



ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL

SUPPLEMENT 5 AVIONIC SYSTEMS

Revision 18 Changed Pages
 May 26, 2020

Revision 18, dated Apr 30/2020, applies to the Enstrom TH-28/480 Series Maintenance Manual, Supplement 5 Avionics Systems.

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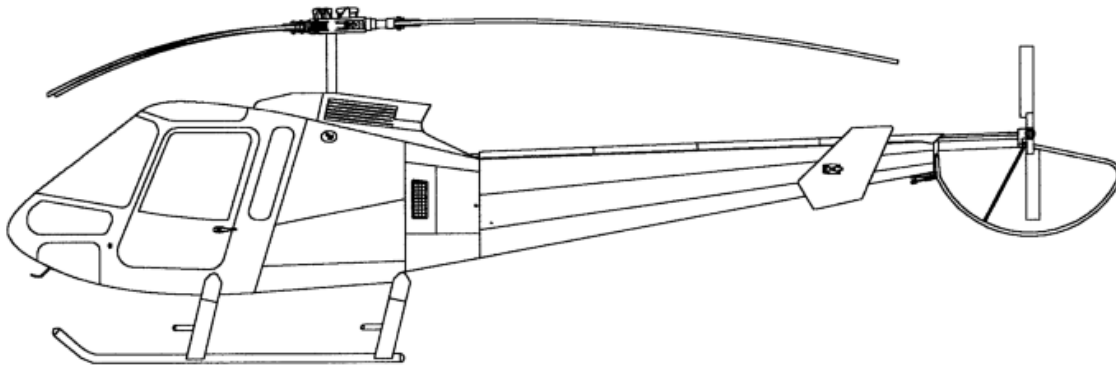
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ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL
SUPPLEMENT 5
AVIONIC SYSTEMS



The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

For EASA approval, the Airworthiness Limitations Section is approved and variations must also be approved.

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INTRODUCTION

Avionic System(s) Effectivity

A. The data is presented in this supplement is applicable to the optional avionic system(s) listed in the following table.

Avionic System(s)

Avionic System	Enstrom Part Number
Appareo Systems Vision 1000	4220641-()
Attitude Indicator	4220542-()
TAS600	4220569-1
Directional Gyro	4220542-()
RA-4500 Radar Altimeter	4220517-()
GMA 350H Audio Panel	4220672-3, -5, -7, -9
GMA 350Hc Audio Panel	4220672-109, -111
GNC 255A Nav/Comm	4220638-1
GNS 430W GPS/Nav/Comm	4220535-()
GNS 530W GPS/Nav/Comm	4220534-()
GTN 650 GPS/Nav/Comm	4220639-()
GTN 750 GPS/Nav/Comm	4220644-()
GTX 327 Transponder	4220512-1, -5
GTX 345 Transponder	4220645-5
SL30 Nav/Comm	4220558-()
MD200 Series CDI	4220574-()
NAT 247 Audio Mixing Amplifier	4220529-5
NAT AMS44 Dual Channel Audio Controller	4220529-1, -3 (NVIS)
Safe Flight Powerline Detection System	4220576-()
SN3500 EHSI	4220609-5, -7
SAE5-35 Altitude Data System	4220561-()

Aircraft Effectivity

A. The data presented in this TH-28/480 Series Maintenance Manual Supplement is applicable to all Enstrom 480 and 480B model helicopters.

Supplemental Changes and Revisions

A. Subsequent to the publication of the initial issue of this supplement, changes in the avionics equipment, support concepts and procedures, as well as information developed by experience may affect the contents of this supplement. To ensure that coverage in the supplement continues to reflect such changes, revised information is released by one of the following methods:

1. Revision - A revision alters portions of the manual by replacement, addition, and/or removal of pages.
2. Reissue - A reissue of this supplement will occur when the amount of changes warrants complete reissue.

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3. Service Directive Bulletins – Used to direct the owner/operator and/or maintenance personnel to make mandatory changes, improvements, or inspections to the aircraft applicable to the entire fleet or a segment of the fleet that are typically safety/airworthiness related. The information provided in the Service Directive Bulletins will be incorporated in the maintenance manual as needed at a later date. At the time of incorporation, the Service Directive Bulletin is superseded by the maintenance manual, and accomplishment or sign-off of the Service Directive Bulletin in the maintenance records book is no longer required. A detailed entry should be made in the maintenance records to indicate that the Service Directive Bulletin is superseded by the maintenance manual.
4. Service Information Letters – Used to transmit information, recommendations, and general service instructions to the aircraft owner/operator and/or maintenance personnel applicable to the entire fleet or a segment of the fleet. The information provided in the Service Information Letters will be incorporated into the maintenance manual as needed at a later date.
5. Service Instructions – Used to provide the owner/operator and/or maintenance personnel with information that is applicable to specific aircraft and does not meet the criteria of a Service Information Letter or Service Directive Bulletin. Service Instructions will not be distributed to the entire fleet.

Enstrom distributes maintenance manual supplement revisions and reissues in electronic form via the Enstrom Helicopter website: www.enstromhelicopter.com (follow the applicable link under the Technical Publications section of the Technical Support page). Revision update notices are sent via email to owners and operators who are registered with Enstrom. Registration to receive publication mailing notifications can be coordinated through the Enstrom Technical Publications Administrator. A complete manual hardcopy may be ordered through Enstrom Customer Service.

Service Information Letters and Service Directive Bulletins incorporated into the maintenance manual are logged in the Service Information Letter Index or the Service Directive Bulletin Index (as appropriate) located on the Enstrom Helicopter website: www.enstromhelicopter.com (follow the applicable link under the Technical Publications section of the Technical Support page). Each index numerically lists all Service Information Letters and Service Directive Bulletins, respectively, and identifies those which have been incorporated into the maintenance manual. All Service Information Letters and Service Directive Bulletins are also located under the Technical Publications section of the website.

Notice of recently released Service Information Letters and Service Directive Bulletins is provided via email notification. Registration to receive publication mailing notifications can be coordinated through the Enstrom Technical Publications Administrator.

CHAPTER 1

TAS600 TRAFFIC ADVISORY SYSTEM

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Avidyne Traffic Advisory System (TAS) is an Airborne Surveillance Radar system. The TAS600 uses transponder replies to compute bearing, relative altitude, and range from nearby Mode C- or Mode S-equipped aircraft. Non-Mode C aircraft provide range and bearing information only. The TAS600 Series System does not detect aircraft without operating transponders.

B. Traffic information from the Avidyne TAS600 is displayed on the Chelton EFIS, the Garmin GMX200, or the Garmin GNS430W/530W systems. If the TAS is interfaced with the Chelton EFIS, audible traffic advisories and annunciator light output are provided by the EFIS MFD. If the TAS is interfaced with Garmin systems, audible traffic advisories are provided by the TAS system and the annunciator light output is produced by the Garmin system.

C. Components of the TAS600 installation include the TAS600 processor, a transponder/coupler, and two antennas.

D. Power to the TAS600 is provided via the **TAS** circuit breaker (CB118) (3 Amp) located on the left side of the center pedestal and an **ON/OFF** power switch (SW82) located on the lower right side of the center pedestal.

E. Refer to the appropriate 480 or 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the TAS600 system.

1-2. Vendor Publications

A. The following components listed in Table 1-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft:

Table 1-1. Vendor Manuals

Component	Publication	Vendor
TAS600	Pilot's Handbook, Part Number 32-2352, Revision 6, or subsequent	Avidyne Corporation 55 Old Bedford Rd. Lincoln, MA 01773

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, the Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the TAS600 system are “on condition”.

CHAPTER 2

SL30 NAV COM

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Garmin SL30 NAV/COM unit is a VHF Navigation/Communications Transceiver utilizing high performance Digital Signal Processing (DSP) filtering. It includes a 760-channel VHF Com transceiver and a 200-channel VOR/LOC/GS navigation receiver.

B. Functions and features of the SL30 include automatic decoding of the Morse code station identifier for VOR/LOC, memory storage for most-used frequency, built-in course deviation indicator, standby Com and Nav frequency monitoring, Nav receiving for both VOR and LOC navigation signals, and built in Glideslope receiver.

C. The components of the SL30 system include the panel mounted SL30 unit and nav and com antennas. If equipped, a dual SL30 installation contains two Garmin SL30 NAV/COM units that share one nav antenna and include two separate, independent com antennas. The SL30(s) provide output to a VOR/LOC/GS indicator and to either a VOX ICS or an audio panel.

D. The part number 4220558-() SL30 may be configured with a diode or an LED-based back course annunciator, each of which may be installed on the upper instrument panel.

E. Power to the SL30 unit is provided via the **COM** circuit breaker (CB61) (5 Amp) and the **NAV** circuit breaker (CB63) (2 Amp) located on the left side of the center pedestal. If equipped, power to the second SL30 unit is provided via the COM2 circuit breaker (also designated CB61) (5 Amp) and NAV2 circuit breaker (also designated CB63) (2 Amp) located on the left side of the center pedestal.

F. Refer to the 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the SL30 system.

1-2. Vendor Publications

A. The SL30 is to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 2-1.

Table 2-1. Vendor Manuals

Component	Publication	Vendor
SL30	SL30 Nav Com Pilot's Guide	Garmin International 1200 E. 151 st Street Olathe, KS 66062

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, the Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the SL30 system are “on condition”.

CHAPTER 3

SANDIA SAE5-35 ALTITUDE DATA SYSTEM

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Sandia SAE5-35 is a solid state altitude data system (blind encoder) that converts pressure altitude into a digital output. The data output is referenced to 29.92 in Hg (1013 Millibars).

B. The Sandia SAE5-35 outputs altitude data via Gillham Grey Code or two independent RS232 digital outputs to Mode C transponders. The transponders utilized include the Bendix/King KT73, KT76A, and KT76C; and the Garmin GTX327 and GTX330.

C. Two configurations of the Sandia SAE5-35 system are available. They are part numbers 4220561-1 and 4220561-3. P/N 4220561-1 is the standard system installation and P/N 28-4220561-3 is the standard system with the "Altitude In-Flight Monitoring" function.

D. Power to the Sandia SAE5-35 encoder is provided via the **ENCDR** circuit breaker (CB39) (2 Amp) located on the lower left side of the center pedestal.

E. Refer to the 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the Sandia SAE5-35 altitude data system.

1-2. Vendor Publications

A. The Sandia SAE5-35 is to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 3-1.

Table 3-1. Vendor Manuals

Component	Publication	Vendor
Sandia SAE5-35	1. SAE5-35 Pilot's Guide, Document 305221 2. SAE5-35 Altitude Data System Installation Manual, Document 305186	Sandia Aerospace, Inc. 3700 Osuna Rd. NE, Suite 171 Albuquerque, NM 87109

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, the Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the Sandia SAE5-35 system are “on condition”.

CHAPTER 5

POWERLINE DETECTION SYSTEM

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Powerline Detection System (PDS) was designed as an aid to helicopter pilots to alert them of their proximity to "live" power lines. The Safe Flight Powerline Detection System emits a pulsing, audible tone along with a visual alert. The system contains a super low frequency (SLF) radio receiver that is tuned to the power line frequency. As the field strength of the power line increases, the system increases the frequency of the aural alerts similar to a Geiger counter. The pilots can literally "hear" their relationship to the power line.

B. The system consists of three primary components: (1) the panel-mounted Powerline Detector, PD (the SLF receiver and other circuits); (2) an antenna coupler to match the impedance of the antenna to the receiver; and (3) the antenna itself.

C. An annunciator located on the front panel illuminates a red warning lamp when the field intensity exceeds a preset value and an amber caution lamp when the audio is muted.

D. Power to the PDS unit is provided via the **PDS** circuit breaker (CB139) (1 Amp) located on the left side of the center pedestal.

E. Two configurations are available: P/N 4220576-1 is a 60 Hz Powerline Detector installation; P/N 4220576-3 is a 50 Hz Powerline Detector installation.

F. Refer to the 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the PDS.

1-2. Vendor Publications

A. The PDS is to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 5-1.

Table 5-1. Vendor Manuals

Component	Publication	Vendor
PDS	Instructions for Continued Airworthiness	Safe Flight Instrument Corporation White Plains, NY

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the PDS are “on condition”.

CHAPTER 6

NAT AMS44 DUAL CHANNEL AUDIO CONTROLLER / NAT 247 AUDIO MIXING AMPLIFIER

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The NAT AMS44 Dual Channel Audio Controller provides one central controller for all aircraft audio, allowing selection of transmit and receive audio, LIVE, PTT (keyed), or VOX intercom, pilot isolation, and emergency operation. Individual control over receive and transmit functions are provided for both the pilot and copilot. Common control is provided for LIVE, PTT, and VOX ICS. Additionally, control is provided for normal, emergency, or isolate operation.

B. The system consists of the dual controller unit located in the avionics panel and the wiring interface for radio, nav/com, and other additional inputs.

C. The NAT 247 is an audio mixing amplifier used in conjunction with the NAT AMS44 to accommodate additional aural warning inputs, if required. The installation is remotely located in the keel.

D. Power to the NAT AMS44 controller is provided via the **AUDIO PANEL** circuit breaker (CB35) (1 Amp) located on the left side of the center pedestal. Power to the NAT 247 amplifier is provided via the **AUD WRN** circuit breaker (CB140) (1 Amp) located on the lower left side of the center pedestal.

E. Refer to the 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the NAT AMS44 and the NAT 247.

1-2. Vendor Publications

A. The NAT audio units are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 6-1.

Table 6-1. Vendor Manuals

Component	Publication	Vendor
NAT AMS44 Dual Channel Audio Controller	AMS44/AMS44 Series Installation and Operation Manual, Revision 4 or later.	Northern Airborne Technology Ltd. 1925 Kirschner Road Kelowna BC, Canada V1Y 4N7 Tele: (250) 763-2232 Fax: (250) 762-3374
NAT 247 Audio Mixing Amplifier	Model 247 SM247 Installation and Operation Manual, Issue 2 or later.	

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. The NAT audio components are “on condition”.

4-2-2. Installation

- A. Install the unit with the attachment screws.
- B. Connect the electrical connectors.
- C. Install the keel access panel.

4-3. Wiring Harnesses/Connectors

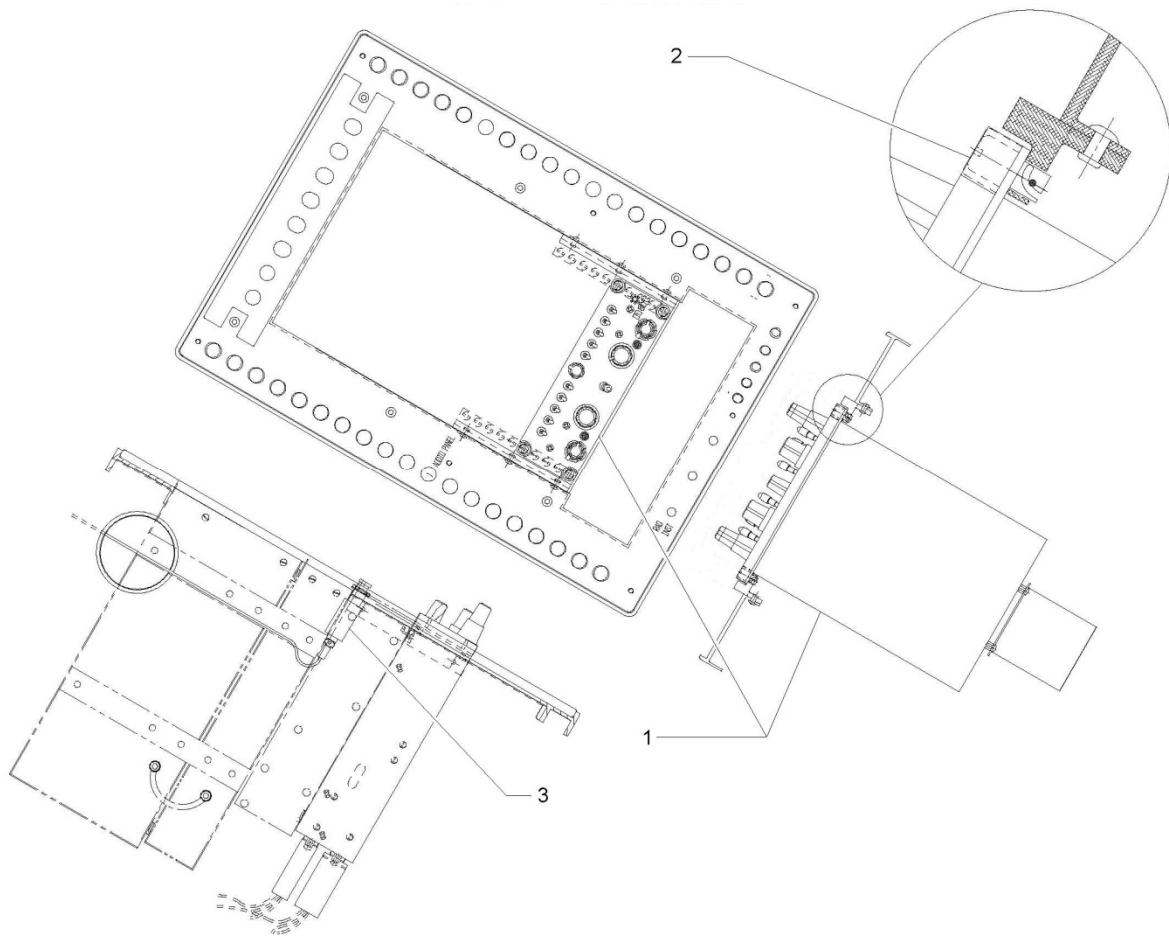
A. Remove, inspect/repair, and install the audio airframe mounted wiring harnesses/connectors in accordance with the TH-28/480 Series Maintenance Manual, Section 6, Paragraphs 6-10 through 6-21. Refer to Diagram 6-1 for the NAT AMS44 electrical wiring interface. Refer to Diagram 6-2 for the NAT 247 electrical wiring interface.

4-4. Figures and Electrical Diagrams

A. The NAT AMS44 installation is shown in Figure 6-1. The NAT 247 installation is shown in Figure 6-2.

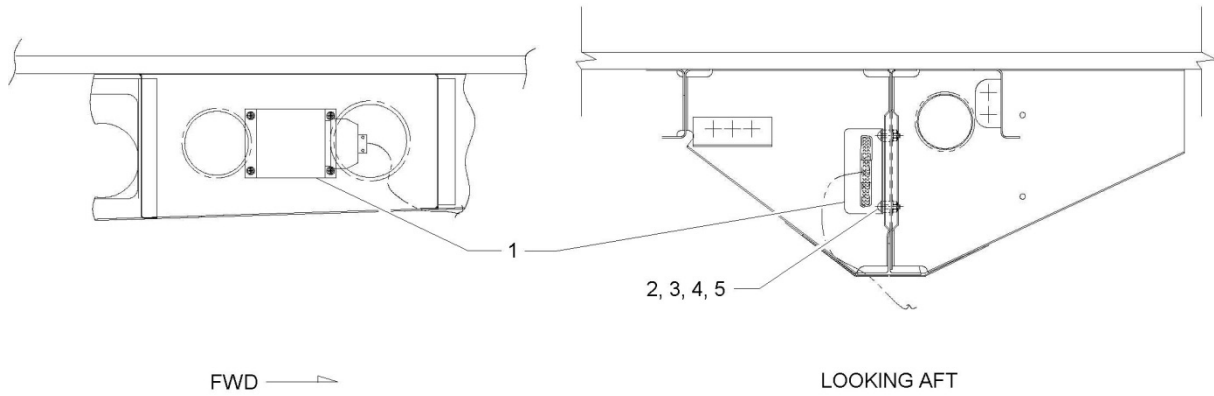
B. The NAT AMS44 electrical wiring interface is shown in Diagram 6-1 and Diagram 6-3. Diagram 6-1 is applicable to S/N 5245 and prior; Diagram 6-3 is applicable to S/N 5246 and subsequent.

C. The NAT 247 electrical wiring interface is shown in Diagram 6-2. Diagram 6-2 is applicable to S/N 5245 and prior; refer to Diagram 6-3 for S/N 5246 and subsequent.



Item	Part Number	Description	Quantity
1	AMS44	Dual Channel Audio Controller	1
1	AMS44N	Dual Channel Audio Controller - NVIS	1
2	N/A	Dzus Fastener	4
3	7277-5-1	Circuit Breaker (1 Amp)	1

Figure 5-1. NAT AMS44 Installation



Item	Part Number	Description	Quantity
1	NAT 247	Audio Mixing Amplifier	1
2	AN525-832R14	Screw	4
3	4220529-11	Spacer	4
4	NAS1149FN816P	Washer	4
5	MS21044N08	Nut	4
-	D44SV-IKC	Audio Mixing Amplifier Kit	1
-	7277-5-1	Circuit Breaker (1 Amp)	1

Figure 5-2. NAT 247 Installation

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247 AUDIO MIXING AMPLIFIER

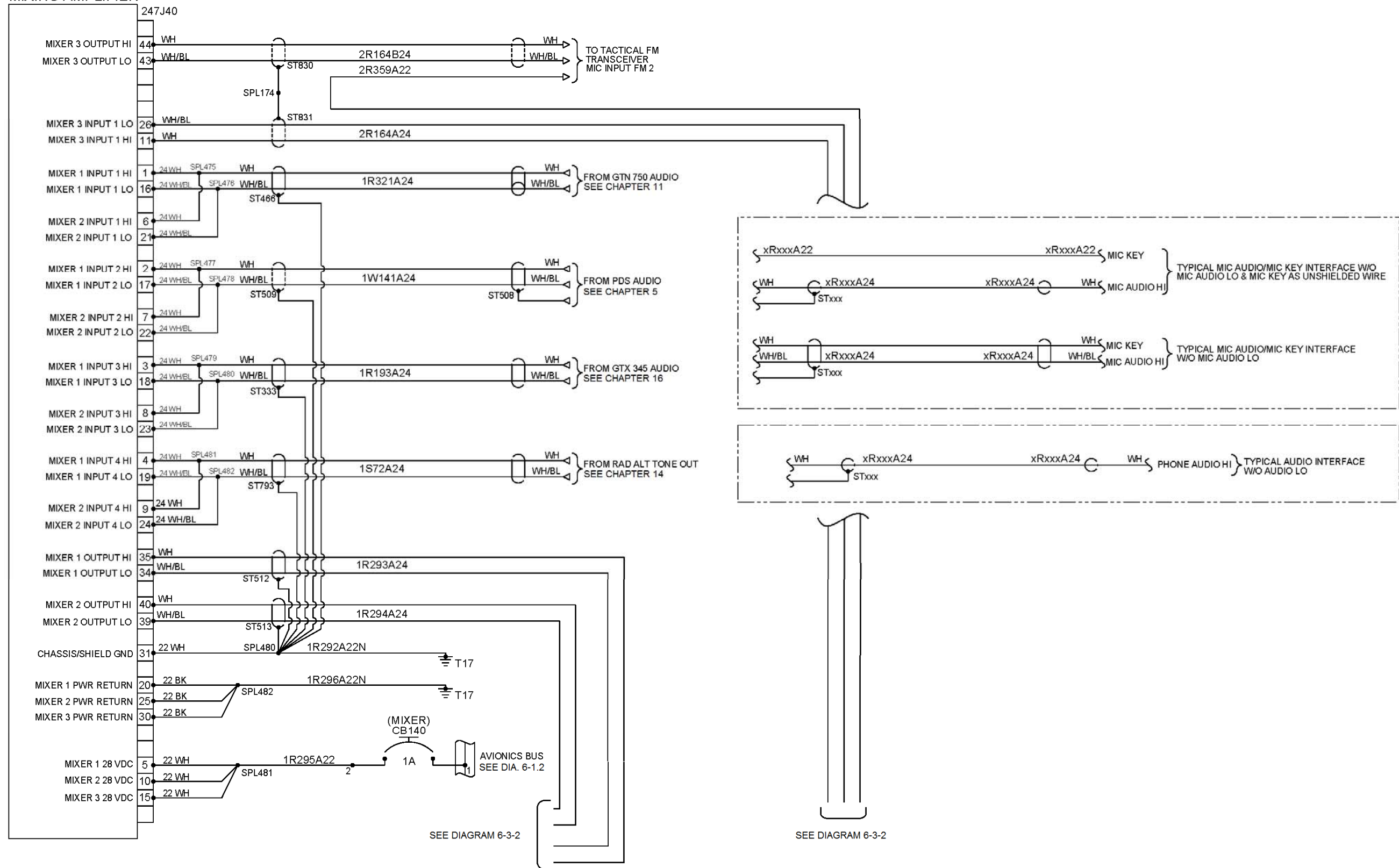
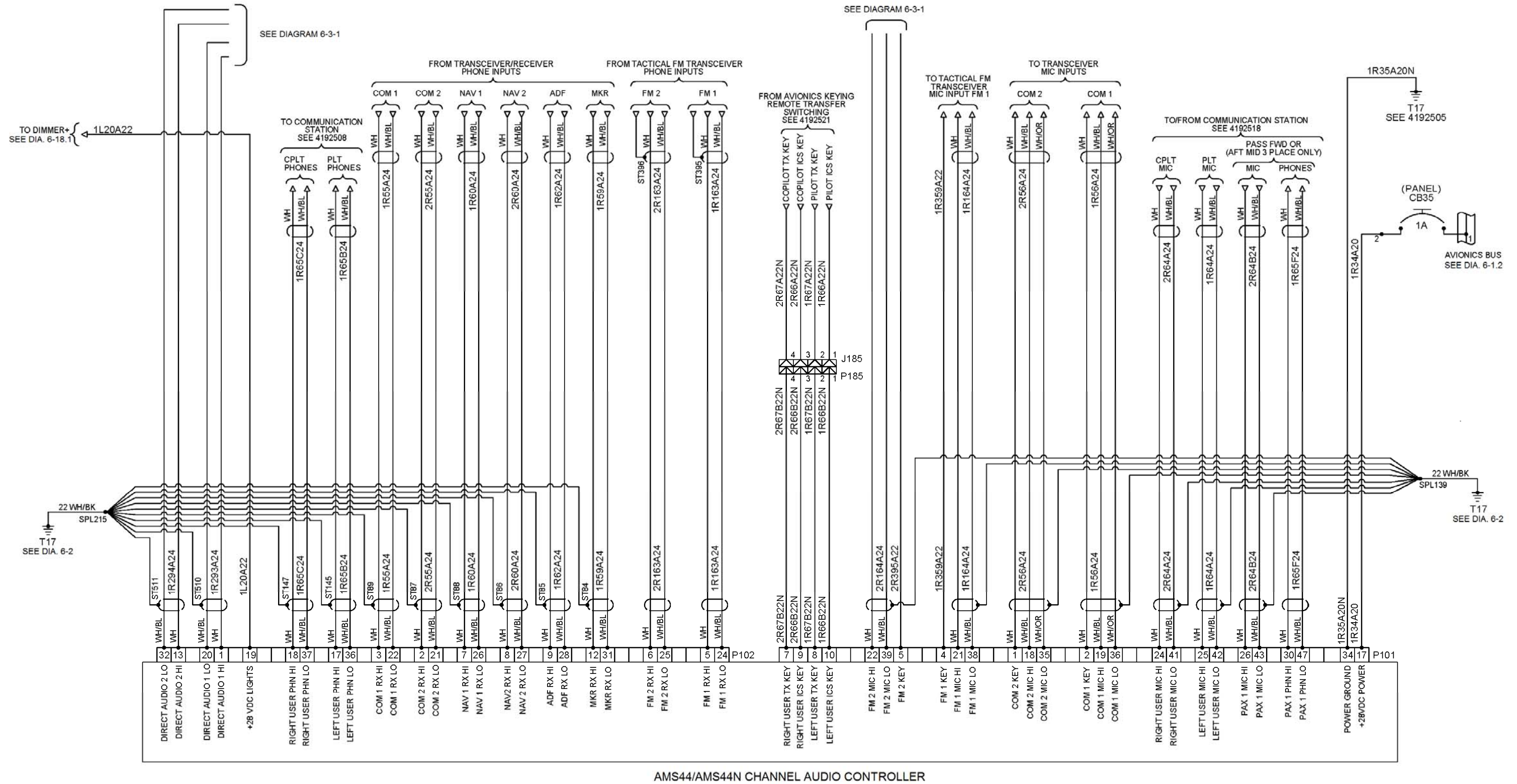


Diagram 6-3. AMS44 Audio Panel Wiring Schematic (4192524-7 Rev Q)
 Sheet 1 of 2
 Apr 30/2020, Rev. 18
 6-13/6-14 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5



AMS44/AMS44N CHANNEL AUDIO CONTROLLER

CHAPTER 7

ATTITUDE INDICATOR AND DIRECTIONAL GYRO

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Attitude Indicator Installation, P/N 4220542-(), provides an indication of the aircraft's attitude relative to the earth by means of an electrically powered gyroscope. The unit is mounted in the instrument panel. Power to the attitude indicator is provided via the **ATTD GYRO** circuit breaker (CB8) located on the left side of the center pedestal. This installation consists of several configurations depending on the manufacturer (refer to Figure 7-1).

B. The Directional Gyro Installation, P/N 4220542-(), provides a heading indication displayed on a rotating compass card by means of an electrically powered gyroscope. The unit is mounted in the instrument panel. Power to the directional gyro is provided via the **D.G.** circuit breaker (CB58) located on the left side of the center pedestal. This installation consists of several configurations depending on the manufacturer (refer to Figure 7-1).

C. Each gyro contains internal lighting and a power monitor indication. The attitude indicator contains a slip indicator attached to the base of the display bezel.

D. Refer to the 480B Rotorcraft Flight Manual for general operational features for the attitude indicator.

1-2. Vendor Manuals

A. The following components listed in Table 7-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft.

Table 7-1. Vendor Manuals

Component	Publication	Vendor
Attitude Indicator AIM Model 1100-() Part Number 504-111()-9()	Installation and Operation Manual, TP-554, latest revision	L3 Communications Avionic Systems, Inc. 5353 52 nd Street, S.E. Grand Rapids, MI 49512-9704, USA www.as.l-3com.com
Attitude Indicator AIM Model 1200-() Part Number 504-112()-9()	Installation and Operation Manual, TP-551, latest revision	
Directional Gyro Aim Series 205 Part Number 505-0031-()	Installation and Operation Manual, TP-584, latest revision	
Slip Indicator for AIM Model 1100-()/1200-() Part Number 248-0168-901	Service Letter SL-237, latest revision	
Attitude Gyro RCA 26 Series	Installation/Operation Guide, Publication No. 1403	Kelly Manufacturing Company 555 South Topeka Wichita, KS 67202 www.kellymfg.com
Slip Indicator for Model 300-14E(L) Part Number 6648-1009-0901	Field Replacement or Installation of Inclinator, 0050-1002, latest revision	Castleberry Instruments & Avionics, Austin, TX www.ciamfg.com

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the gyro systems are “on condition”.

CHAPTER 8

GNS 430W/530W GPS/WAAS NAVIGATOR

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

- A. The 430W/530W GPS/WAAS Navigator is a panel-mounted product that contains a GPS/WAAS receiver for GPS approved primary navigation under TSO C146a, and also VHF COM and VHF NAV radios in an integrated system unit with a moving map and color display. The graphical display is used to depict traffic, weather, or terrain data.
- B. Four configurations of the 430W installation are available. They are part numbers 4220535-107, 4220535-109, 4220535-111, and 4220535-113. The dash numbers differentiate between installations with or without VOR/LOC/GS activation and between installations that are upper or lower panel mounted.
- C. Six configurations of the 530W installation are available. They are part numbers 4220534-107, 4220534-109, 4220534-111, 4220534-113, 4220534-115, and 4220534-117. The dash numbers differentiate between map database variations and installations that are upper or lower panel mounted.
- D. The 430W/530W provides optional output to a VOR/LOC/GS Indicator and to either a VOX ICS or an audio panel.
- E. Power to the 430W/530W unit is provided via the **COMM/NAV GPS** or the **GPS COM** (4220535-109 and 4220535-113 only) circuit breaker (CB79) (5 Amp) and the **COMM TX** circuit breaker (CB80) (5 Amp) located on the left side of the lower panel.
- F. Refer to the 480B Rotorcraft Flight Manual Supplement and the current vendor operating manuals/instructions for operation of the 430W/530W.

1-2. Vendor Manuals

- A. The following components listed in Table 8-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft.

Table 8-1. Vendor Manuals

Component	Publication	Vendor
GNS 430W	400W Series Pilot's Guide and Reference, Document Number 190-00356-00, latest revision 400W Series Installation Manual, Document Number 190-00356-02, latest revision	Garmin International 1200 E. 151 st Street Olathe, KS 66062 913-397-8200 (Direct) 866-739-5687
GNS 530W	500W Series Pilot's Guide and Reference, Document Number 190-00357-00, latest revision 500W Series Installation Manual, Document Number 190-00181-02, latest revision	

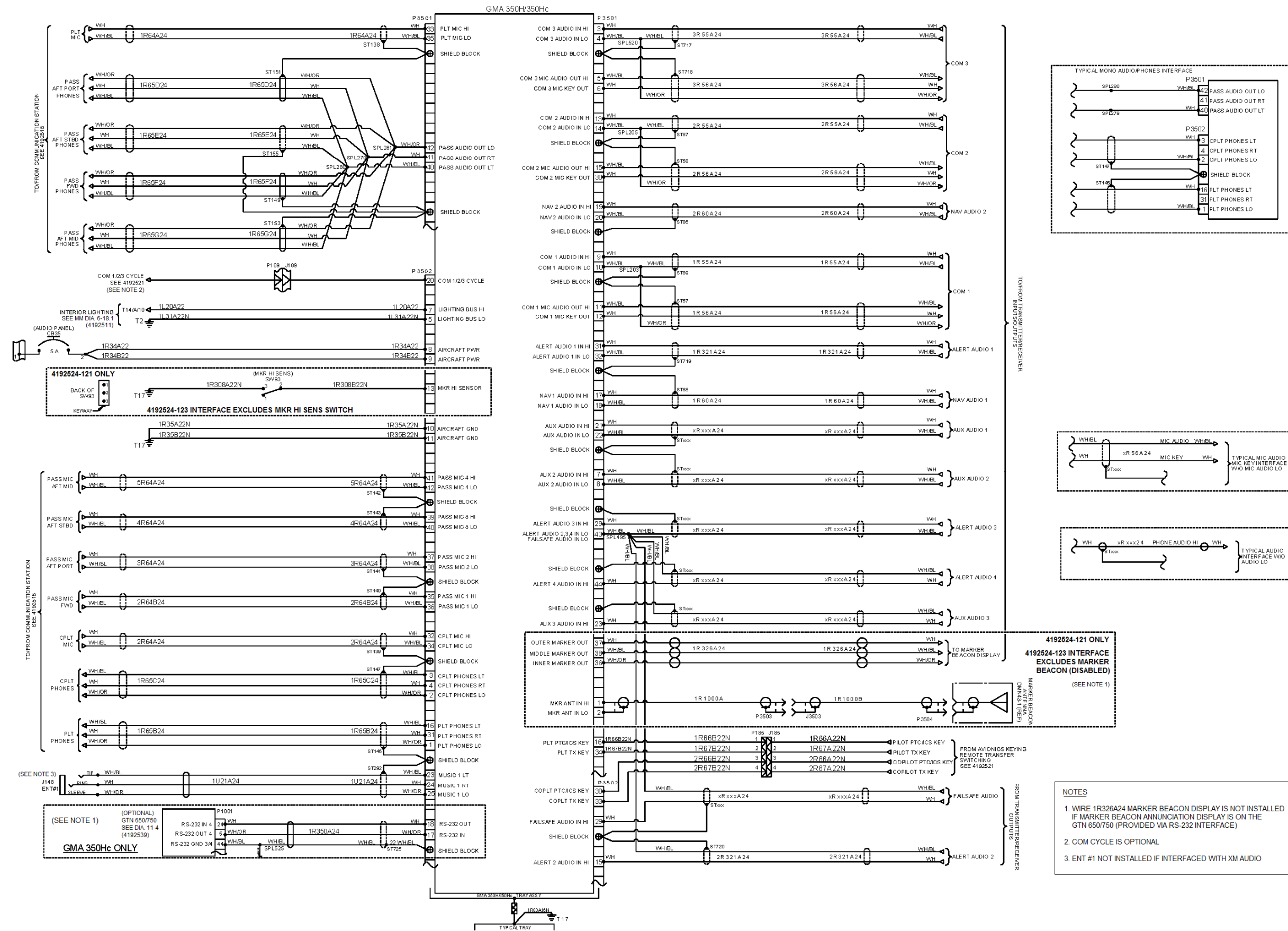
SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

- A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.
- B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.
- C. All components of the GNS 430W/530W are “on condition”.

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- NOTES**
1. WIRE 1R326A24 MARKER BEACON DISPLAY IS NOT INSTALLED IF MARKER BEACON ANNUNCIATION DISPLAY IS ON THE GTN 650/750 (PROVIDED VIA RS-232 INTERFACE)
 2. COM CYCLE IS OPTIONAL
 3. ENT #1 NOT INSTALLED IF INTERFACED WITH XM AUDIO

Diagram 9-2. GMA 350H (Standard)
 (Ref. 4192524-121 and 4192524-123 Rev. P)
 Apr 30/2020, Rev. 18
 9-13/9-14 (Blank)

CHAPTER 11
GTN 650/750 GPS/NAV/COM
SECTION 1
SYSTEM DESCRIPTION

1-1. System Description

A. The GTN 650 installation part numbers are 4220639-1, 4220639-3, and 4220639-5. The GTN 750 installation part number is 4220644-1. The differences are explained in the following table:

Part Number	Location	Nav Enabled
4220639-1	Lower Console	Yes
4220639-3	Instrument Panel	No
4220639-5	Instrument Panel	Yes
4220644-1	Instrument Panel	Yes

B. The GTN installation may be interfaced with navigation, audio, and fuel management systems, as well as integrated control and display of transponder functions. The GTN uses a Secure Digital (SD) card to load and store various types of data. For basic flight operations, the SD card is required for Terrain, Obstacle, and SafeTaxi database storage as well as Jeppesen aviation database updates.

C. The components of the GTN include the panel mounted GTN unit and Nav (4220639-1, 4220639-5, or 4220644-1 only), Com, and GPS antennas. For 4220639-1, 4220639-5, and 4220644-1, an external CDI, HSI, EHSI, or EFIS is required. (If the installation is configured with MD200 series CDI, refer to Chapter 4.)

D. Power to the GTN is provided via the **COM** circuit breaker (CB193) (5 Amp) and the **NAV/GPS** or **GPS** circuit breaker (4220639-3) circuit breaker (CB194) (5 Amp) located on the left side of the center pedestal.

E. For installation 4220639-1, 4220639-5, and 4220644-1, refer to 480B Rotorcraft Flight Manual Supplement 28-AC-064 for GTN 650/750 limitations and basic operation instructions. For installation 4220639-3, refer to 480B Rotorcraft Flight Manual Supplement 28-AC-068 for GTN 650 (Nav Disabled) limitations and basic operation instructions.

1-2. Vendor Manuals

A. The following components listed in Table 11-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft.

Table 11-1. Vendor Manuals

Component	Publication	Vendor
GTN 650/750	GTN 6XX/7XX Part 27 AML STC Maintenance Manual, Document No. 190-01007-B1, latest revision	Garmin International, Inc. 1200 East 151 st Street Olathe, KS 66062 Tele: (913) 397-8200 Fax: (913) 397-8282 www.garmin.com

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. For FAA approval, this Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the GTN 650/750 are “on condition”.

SECTION 3

SERVICING, TROUBLESHOOTING, AND PERIODIC INSPECTIONS

3-1. Servicing

A. The GTN installation contains no user serviceable components or assemblies. Operations involving the removal of the GTN unit must be done by authorized maintenance technicians.

3-2. Troubleshooting

A. Refer to the electrical schematics (ref. para. 4.3) when troubleshooting the GTN installation. Refer also to the Troubleshooting chapter of the applicable manual publication listed in Table 11-1. If the unit fails to operate after troubleshooting efforts, contact Garmin aviation product support for assistance (ref. Table 11-1).

3-3. Periodic Inspections/Maintenance

A. The following inspection checklist is intended as a guide for 100 hour/annual inspections for aircraft operating under normal conditions. More frequent inspections may be required should adverse operating conditions be encountered.

Date		
Signature		
Aircraft Registration Number		
Aircraft Serial Number		
GTN		
INITIAL EACH ITEM AFTER ACCOMPLISHMENT		
Inspect the following items every 100 hours or annually		INITIAL
1. Inspect the antennas, electrical wiring and mounts for security, damage, and obvious defects.		
2. Inspect the GTN unit and mount for security, damage, and obvious defects.		
3. Check fan intake slots (if applicable) on the sides and bottom of the GTN unit's bezel for dust, dirt, or obstructions. Clean as needed.		
4. Inspect interfaced fuel management system equipment (if equipped) for security, damage, and obvious defects.		
5. Check legibility of switch labels and placards.		

SECTION 4

SYSTEM MAINTENANCE

NOTE

Removal or installation of equipment will change the aircraft empty weight and empty weight c.g. These changes will be recorded on Form F-511-5, Basic Weight and Balance Record, as required (reference Enstrom TH-28/480 Series Maintenance Manual).

4-1. GTN

NOTE

All work must be accomplished in accordance with the Enstrom TH-28/480 Series Maintenance Manual.

4-1-1. Cleaning

A. The front bezel, keypad, and display can be cleaned with a microfiber cloth or with a soft cotton cloth dampened with clean water. DO NOT use any chemical cleaning agents. Care should be taken to avoid scratching the surface of the display.

4-1-2. Removal

A. Remove power to the GTN unit. Pull the **COM** and **NAV/GPS** or **GPS** circuit breakers out. Disable the circuit breakers by installing a cable tie or other similar device around each circuit breaker stem.

B. For removal, refer to Section 5.1 of the GTN 6XX/7XX Part 27 AML STC Maintenance Manual (ref. Table 11-1).

4-1-3. Installation

NOTE

Do not use excessive force when inserting the GTN into the rack. This may damage the connectors, unit, and/or unit rack.

A. For installation, refer to Section 5.1 of the GTN 6XX/7XX Part 27 AML STC Maintenance Manual (ref. Table 11-1).

C. Remove the cable tie or other similar device from the **COM** and **NAV/GPS** or **GPS** circuit breaker stems and push the stems in to set the circuit breakers.

4-1-4. Functional Check

A. Perform return-to-service procedures in accordance *GTN 6XX/7XX Maintenance Manual*, Document 190-01007-B1, latest revision. Modify the installed GTN 650/750 configuration settings in accordance with the applicable figure referenced in Table 11-2.

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B. Optional fuel management system interface: Configure a replacement Miniflo-L (Shadin) in accordance with Figure 11-4 (refer also to the Miniflo-L Operating Manual, Document Number OP91204E for data entry and functional test procedures).

C. If the returned GTN is used as the ADS-B Out position source, perform an ADS-B Out test in accordance with *GTX 345 Part 27 AML Maintenance Manual*, Document No. 190-00734-21, Section 8.4.

4-2. Wiring Harnesses/Connectors

A. Remove, inspect/repair, and install the airframe mounted wiring harnesses/connectors in accordance with the TH-28/480 Series Maintenance Manual, Section 6, Paragraphs 6-10 through 6-21.

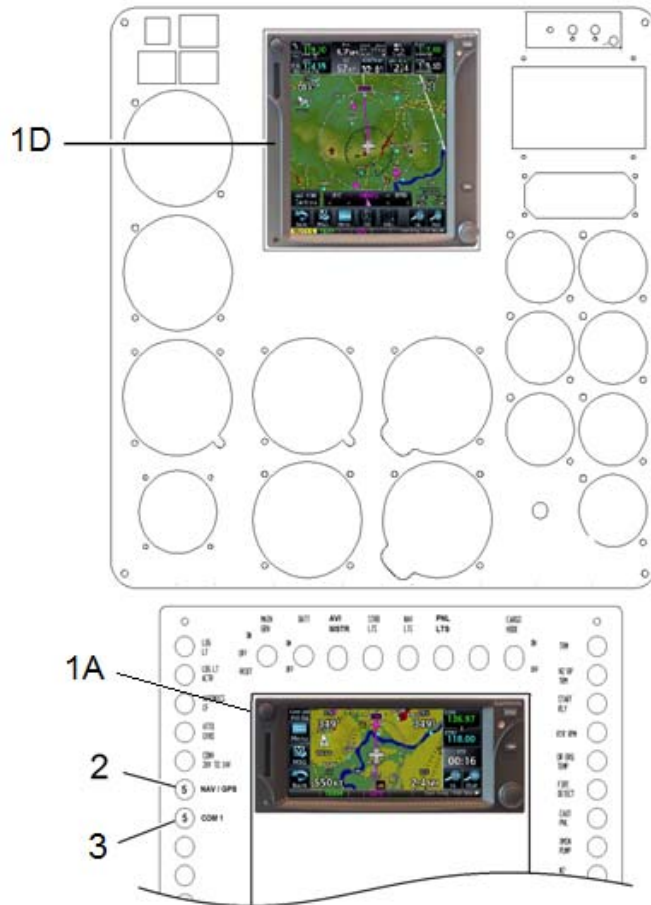
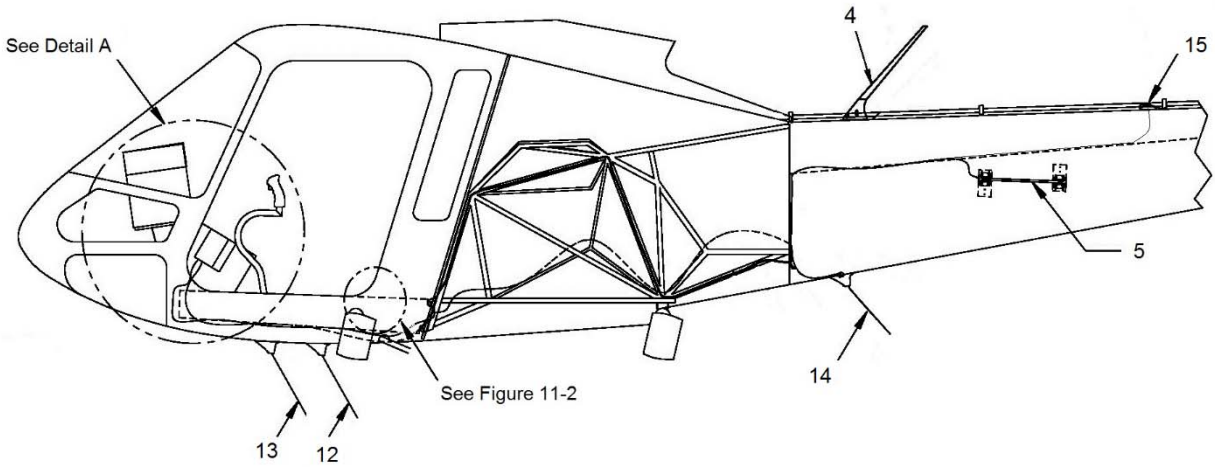
4-3. Figures and Diagrams

A. Refer to Figures 11-1 and 11-2 and Table 11-3 GTN 650/750 for system installation information.

B. Refer to Table 11-2 for configuration set-up pages and wiring diagrams.

Table 11-2. Figures and Diagrams Reference

Part Number	SW			Figure Reference	Diagram Reference
	5.00	6.41	6.51		
4220639-1	X			11-3	11-1
		X	X	11-5	11-2
4220639-3	X			11-3	11-3
		X	X	11-6	11-4
4220639-5			X	11-5	11-2
4220644-1			X	11-5	11-2
Shadin Miniflo Fuel Management				11-4	As applicable



NOTE: Actual location of GTN 650/750 may vary depending on customer preferences.

DETAIL A

Figure 11-1. GTN 650/750 Installation

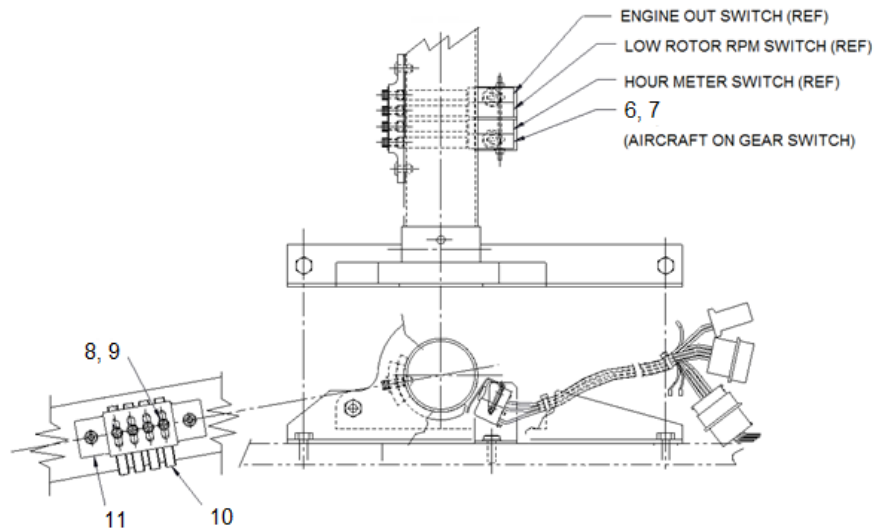


Figure 11-2. GTN 650/750 Installation – Aircraft on Ground Switch

Table 11-3. GTN 650/750 Installation

Item	Part Number	Description	Quantity
-A	4220639-1	GTN 650 Installation	REF
-B	4220639-3	GTN 650 Installation	REF
-C	4220639-5	GTN 650 Installation	REF
-D	4220644-1	GTN 750 Installation	REF
-	011-00979-03	. Configuration Module Kit (Used with Items 1A and 1B)	1
-	010-00813-A0	GTN 650 Kit	REF
1A	011-02256-00	. GTN 650	1
-	011-02325-02	. GTN 650 Connector Kit	1
-	011-02245-02	. GTN 650 Backplate Assembly	1
-	115-01293-A0	. GTN 650 Mounting Rack	1
-	010-00820-A0	GTN 750 Kit	REF
1D	011-02282-00	. GTN 750	1
-	011-02326-02	. GTN 750 Connector Kit	1
-	011-02246-02	. GTN 750 Backplate Assembly	1
-	115-01294-A0	. GTN 750 Mounting Rack	1
-*	010-01157-41	. Helo, Americas North	A/R
-*	010-01157-42	. Helo, Americas South	A/R
-*	010-01157-43	. Helo, Atlantic North	A/R
-*	010-01157-44	. Helo, Atlantic South	A/R
-*	010-01157-45	. Helo, Pacific North	A/R
-*	010-01157-46	. Helo, Pacific South	A/R

Table 11-3. GTN 650/750 Installation

Item	Part Number	Description	Quantity
2	7277-5-5 (5 amp)	. Circuit Breaker (NAV/GPS)	1
-2B	7277-5-5 (5 amp)	. Circuit Breaker (GPS) (4220639-3 only)	1
3	7277-5-5 (5 amp)	. Circuit Breaker (COM)	1
4	4220668-3	Antenna Installation, VHF COM 1/GPS 1	REF
-	CI 2580-200	. Antenna	1
-	MS24693-C52	. . Screw	4
5	4220537-3	Antenna Installation, VOR/LOC/GS (4220639-1, 4220639-5, or 4220644-1 only)	REF
-5	4220537-9	Antenna Installation, VOR/LOC/GS (Dual Nav) (4220639-1, 4220639-5, or 4220644-1 only)	REF
-	CI 205-3	. Antenna System	1
-	MS24693-C55	. . Screw	8
-	4119835-33	. Placard (GPS TO BE USED FOR VFR ONLY)	1
-	4119835-33	. Placard (COM 1 RMT.FREQ.XFER) (Located on Cyclic)	1
-	28-19064-1	. Placard (NAV FREQUENCIES NOT ENABLED) (4220639-3 only)	1
6	1SE1	. Micro Switch (SW 109)	1
7	JE-1	. Actuator	1
8	MS16998-10L	. Cap Screw	1
9	NAS620-6L	. Washer	2
10	4199072-13	. Actuator Contactor	1
11	4199072-11	. Actuator Contactor Positioner	1
12†	4199034-3	Antenna Installation, VHF COM 1 (alternate)	REF
13†	4199034-7	Antenna Installation, VHF COM 1 (alternate)	REF
-	DM C70-1/A	. Antenna	1
-	MS24693-C53	. . Screw	4
-	AN960-8L	. . Washer	4
-	AN364-832A	. . Nut	4
14†	4199025-1	Antenna Installation, VHF COM 2 (alternate)	REF
-	CI 292-1	. Antenna	1
-	AN507-C832R10	. . Screw	3
15	4196582-121	Antenna Installation (alternate, GPS, left side)	REF
-15	4196582-123	Antenna Installation (alternate, GPS, right side)	REF
-	013-00235-00	. Antenna	1
-	MS51959-50	. . Screw	4

- Not illustrated

* Per customer requirements

† This antenna with installation of Item 15 is an alternate antenna system for Item 4

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

ARINC 429 Configuration Page			Notes
ARINC 429 In 1	<u>Speed</u>	<u>Data</u>	For Sandel SN3500 EHSI When not connected
	Low	EFIS Format 4	
ARINC 429 In 2	Low	Off	GTN 750 Only
	Low	OFF	
ARINC 429 In 3	Low	OFF	For Sandel SN3500 EHSI When not connected
	Low	OFF	
ARINC 429 In 4	Low	OFF	GTN 750 Only
	Low	OFF	
ARINC 429 Out 1	Low	GAMA Format 3	For Sandel SN3500 EHSI When not connected
	Low	OFF	
ARINC 429 Out 2	Low	OFF	GTN 750 Only
	Low	OFF	
ARINC 429 Out 3	Low	OFF	For Sandel SN3500 EHSI When not connected
	Low	OFF	
ARINC 429 Out 4	Low	OFF	GTN 750 Only
	Low	OFF	
SDI	LNAV 1	Common	For Sandel SN3500 EHSI When not connected
RS-232 Configuration Page			Notes
RS232 1	<u>Input</u>	<u>Output</u>	For Garmin GTX 345 When not connected
	GTX Mode S+ #1	GTX Mode S+ #1	
RS232 2	OFF	OFF	For Shadin Miniflo When not connected
	Fuel Format 2	Aviation Output 1	
RS232 3	OFF	OFF	For GTR/GNC When not connected
	OFF	Aviation Output 1	
RS232 4	GMA Format 2	GMA Format 2	For GMA When not connected
	OFF	OFF	
RS232 5	OFF	OFF	GTN 750 Only
RS232 6	OFF	OFF	GTN 750 Only
More RS-232 Setup	Disable Forward ALT to GTX No Action		For Garmin GTX 345 When not connected
HSDB (Ethernet) Configuration Page			Notes
Ethernet Port 1	Not Connected		For Garmin GTX 345 When not connected
Ethernet Port 2	Not Connected		
Ethernet Port 3	Connected		
Ethernet Port 4	Not Connected		
Interfaced Equipment Page			Notes
<u>Unit</u>	<u>Present</u>	<u>Type</u>	For Garmin GTX 345 When not connected
Cross-Side Nav	Not Present	---	
GDL 69/69A	Not Present	---	
GDL 88	Not Present	---	
ADS-B In Source	Present	GTX #1	
	Not Present	---	
GDU #1	Not Present	---	
GDU #2	Not Present	---	
GDU #3	Not Present	---	
Transponder #1	Present	GTX Mode S+	
	Not Present	---	
Transponder #2	Not Present	---	
GSR 56	Not Present	---	
GWX	Not Present	---	

Main Indicator (Analog) Configuration page		Notes		
Calibrate OBS Resolver	Calibrate	Calibrate for CDI/Slaved Compass System		
CDI Key	Enabled			
Selected Course For GPS	Allowed			
Selected Course For VOR/LOC	Allowed			
V-Flag State	Normal			
Lighting Configuration Page		Notes		
<u>Display</u>	<u>Keys</u>			
Source	Source			
Lighting Bus 1	Photocell			
Minimum Level	Minimum Level			
5.00%	5.00%			
Photocell Configuration Page		Notes		
Response Time	Slope	Offset		
2sec	50	50	Adjust Offset to match/sync to other installed equipment	
	Key Backlight Cutoff	Photocell Transition		
	80%	10%		
Lighting Bus Configuration Page		Notes		
Lighting Bus 1	28V DC		Adjust Offset to match/sync to other installed equipment	
Response Time	Slope	Offset		
0sec	15	15		
Lighting Bus 2	28V DC			
Response Time	Slope	Offset	Lighting Bus 2 not applicable	
2sec	50	50		
Audio Configuration Page		Notes		
<u>Alert Volume</u>		Adjust per customer requirement		
50%				
Voice Command Configuration Page		Notes		
<table border="1"> <tr> <td>Voice Commands</td> <td></td> </tr> </table>		Voice Commands		For GMA Voice Commands, otherwise disable all. Disable all for EASA specified configuration. (Delivery to Europe)
Voice Commands				
"Say..." Commands	Mute Tone			
Traffic Configuration Page		Notes		
Traffic Intruder Symbol Color	White			
GTN Control of Traffic System	Yes			

Figure 11-5. GTN 650/750 Configuration Set-Up
(P/N 4220639-1, P/N 4220639-5, or P/N 4220644-1; SW 6.41/SW 6.51)
Sheet 1 of 3 (Ref. 4192539-9 Rev. H)
Rev. 18, Apr 30/2020
11-15/11-16 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

Main System Configuration Page		Notes
Airframe Type	Rotorcraft	
Air/Ground Threshold	10KT	
Air/Ground Discrete	Active for Ground	
GPS Antenna Height Above Ground	5.6 feet	
Fuel Type	Jet A	
Synchro Heading Input	Not Connected	GTN 750 Only
GPS Select	Auto	
Heading Source Input	Connected	For Sandel SN3500 EHSI
	Not Connected	When not connected
Radio Altimeter Input	Not Connected	
Altitude Source Input	Connected	For Garmin GTX 345
	Not Connected	When not connected
Enhanced Lighting Mode	Disabled	
Pilot Position	Left	GTN 750 Only
Crossfill Status Alert	Disabled	
System ID	GTN 1	
Database Sync	Pilot Control	
Airspace Labels	Enabled	
Checklist Page	Task List	
Blackout Mode	Disabled	
Com Configuration Page		Notes
Com Radio	Enabled	
RX Squelch Mode	Advanced	
Mic 1 Gain	+12db	Adjust per customer requirement
Sidetone Source	External	
Sidetone Volume	+60.0db	Adjust per customer requirement
Sidetone Pilot Control	Enabled	(SW 6.51 ONLY)
Advanced Com RX Squelch		Notes
25kHz		
Low	80%	
Mid	80%	
High	80%	
8.33kHz (SW 6.51 ONLY)		Adjust all per customer requirement
Low	80%	
Mid	80%	
High	80%	
Advanced Carrier Squelch		Notes
25kHz		(SW 6.51 ONLY)
Low	55%	
Mid	55%	
High	55%	
8.33kHz		Adjust all per customer requirement
Low	0%	
Mid	0%	
High	0%	


VOR/LOC/GS Configuration Page		Notes
Nav Radio	Enabled	
Selected Course	---	
Calibrate OBS Resolver		No action taken
ARINC 429 Speed RX	Low	
ARINC 429 Speed TX	Low	
SDI	VOR/ILS 1	
DME Mode		No action taken
DME Channel Mode		No action taken
LOC/GS Filtering	Disabled	(SW 6.51 ONLY)
ARINC 453/708 Configuration Page		Notes
Port 1	OFF	GTN 750 Only
Discrete Configuration Page		Notes
N/A		No action taken/Default
Navigation Features Configuration Page		Notes
Mark on Target	Disabled	
RF Procedure Legs	Disabled	
Vertical Navigation Configuration Page		Notes
Vertical Navigation Type		(SW 6.51 ONLY)
V C A L C	VNAV	
Transition to Approach	Transition Altitude	VDI Scale
	FL180	500 FT
Ownship Configuration Page		Notes
Color Ownship		The following settings can be modified per customer requirements unless noted otherwise
	3-Blade Rotorcraft	
Terrain Configuration Page		Notes
Terrain Mode		Alert Configuration (SW 6.51)
H T e r r a i n P r o x i m i t y	HTerrain Alerting (SW 6.51)	Audio Clips (SW 6.41/6.51)
HTAWS		Alert Settings (SW 6.51)
		Airport Criteria
		Runway Surface
		Any
		Minimum Length
		0 FT

Figure 11-5. GTN 650/750 Configuration Set-Up
(P/N 4220639-1, P/N 4220639-5, or P/N 4220644-1; SW 6.41/SW 6.51)
Sheet 2 of 3 (Ref. 4192539-9 Rev. H)
Rev. 18, Apr 30/2020
11-17/11-18 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

Chart Configuration Page		Notes
Charts Configured	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> None <hr/> FliteCharts <hr/> ChartView </div>	GTN 750 Only
Com Transmit Power Configuration Page		Notes
Com Transmit Power		
Normal	16W	
Weather Radar Configuration Page		Notes
N/A		GTN 750 Only, Not applicable at this time
Flight Simulator Configuration Page		Notes
N/A		Not applicable at this time
Search and Rescue Configuration Page		Notes
N/A		Not applicable at this time
External Systems - Audio Panel		Notes
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Marker Beacon Display </div>	For GMA Marker Beacon Display, otherwise disable
System - SBAS Providers		Notes
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> WAAS <hr/> EGNOS <hr/> MSAS <hr/> GAGAN </div>	WAAS provides SBAS service for North America and most of Central America Switch to EGNOS prior to shipment per customer requirement (Europe) (SW 6.51 ONLY) Switch to MSAS prior to shipment per customer requirement (Japan) Switch to GAGAN prior to shipment per customer requirement (India) (SW 6.51 ONLY)
System - GTX 345 FIS-B Weather		Notes
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Enabled </div>	For Garmin GTX 345 FIS-B Weather, otherwise disable Disable prior to shipment per customer requirement (Typical for Non-U.S.)
System - Setup		Notes
CDI Scale Auto ILS CDI Capture Auto Switch Local Offset Adjust to Local time Time Format Local 12 hour Runway Surface Any Runway Length 0 FT Include User Airports Enabled		The following settings can be modified per customer requirements unless noted otherwise (SW 6.51 ONLY)
Com Channel Spacing	25.0 kHz	Switch to 8.33 kHz prior to shipment per customer requirement (Europe/Asia) (SW 6.51 ONLY)
Reverse Frequency Lookup	Toggled On	
Com Sidetone Control:		
Link to COM VOL	Toggled Off	
Offset	+0%	
Keyboard Format	ABC	(SW 6.51 ONLY)
Crossfill	Disabled	
System - Alerts		Notes
Arival	Active	The following settings can be modified per customer requirements unless noted otherwise
Proximity	3.0 NM	
Airspace Alerts	All Active	
Altitude Buffer	200 FT	
System - Units		Notes
Altitude/Verticle Speed	Feet (FT/FPM)	The following settings can be modified per customer requirements unless noted otherwise
Distance /Speed	Nautical Miles	
Fuel	Pounds (LB)	
Nav Angle	Magnetic (°)	
Magnetic Variation	N/A	
Position Format	LAT/LON	
Pressure	Inches of Mercury	
Temperature	Celsius (°)	
System - Audio		Notes
Click Volume	60%	Setting can be modified per customer requirements unless
HTAWS Alert Voice	N/A	Not applicable at this time
Voice Callout	N/A	Not applicable at this time
System - Backlight		Notes
Manual Offset	No Action	Setting can be modified per customer requirements unless
System - Connex Setup - GTX 345		Notes
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Bluetooth </div>	For Garmin GTX 345 Bluetooth, otherwise disable
System - Voice Commands		Notes
	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Voice Commands </div>	For GMA Voice Commands, otherwise disable Disable all for EASA specified configuraiton. (Delivery to

Figure 11-5. GTN 650/750 Configuration Set-Up
(P/N 4220639-1, P/N 4220639-5, or P/N 4220644-1; SW 6.41/SW 6.51)
Sheet 3 of 3 (Ref. 4192539-9 Rev. H)
Rev. 18, Apr 30/2020
11-19/11-20 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

ARINC 429 Configuration Page			Notes
	Speed	Data	
ARINC 429 In 1	Low	OFF	
ARINC 429 In 2	Low	OFF	
ARINC 429 In 3	Low	OFF	GTN 750 Only
ARINC 429 In 4	Low	OFF	
ARINC 429 Out 1	Low	OFF	
ARINC 429 Out 2	Low	OFF	
ARINC 429 Out 3	Low	OFF	GTN 750 Only
ARINC 429 Out 4	Low	OFF	
SDI		LNAV 1 Common	

RS-232 Configuration Page			Notes
	Input	Output	
RS232 1	GTX Mode S+ #1 OFF	GTX Mode S+ #1 OFF	For Garmin GTX 345 When not connected
RS232 2	Fuel Format 2 OFF	Aviation Output 1 OFF	For Shadin Miniflo When not connected
RS232 3	OFF	Aviation Output 1 OFF	For GTR/GNC When not connected
RS232 4	GMA Format 2 OFF	GMA Format 2 OFF	For GMA When not connected
RS232 5	OFF	OFF	GTN 750 Only
RS232 6	OFF	OFF	
More RS-232 Setup	Disable Forward ALT to GTX No Action		For Garmin GTX 345 When not connected

HSDB (Ethernet) Configuration Page		Notes
Ethernet Port 1	Not Connected	
Ethernet Port 2	Not Connected	
Ethernet Port 3	Connected	For Garmin GTX 345
	Not Connected	When not connected
Ethernet Port 4	Not Connected	

Interfaced Equipment Page			Notes
Unit	Present	Type	
Cross-Side Nav	Not Present	---	
GDL 69/69A	Not Present	---	
GDL 88	Not Present	---	
ADS-B In Source	Present	GTX #1	For Garmin GTX 345
	Not Present	---	When not connected
GDU #1	Not Present	---	
GDU #2	Not Present	---	
GDU #3	Not Present	---	
Transponder #1	Present	GTX Mode S+	For Garmin GTX 345
	Not Present	---	When not connected
Transponder #2	Not Present	---	
GSR 56	Not Present	---	
GWX	Not Present	---	GTN 750 Only

Main Indicator (Analog) Configuration page		Notes
Calibrate OBS Resolver	Calibrate	No Action Taken
CDI Key	Disabled	
Selected Course For GPS	Allowed	
Selected Course For VOR/LOC	Allowed	
V-Flag State	Normal	

Lighting Configuration Page		Notes
Display	Keys	
Source Lighting Bus 1	Source Photocell	
Minimum Level 5.00%	Minimum Level 5.00%	

Photocell Configuration Page			Notes
Response Time 2sec	Slope 50	Offset 50	Adjust Offset to match/sync to other installed equipment
	Key Backlight Cutoff 80%	Photocell Transition 10%	

Lighting Bus Configuration Page			Notes
Lighting Bus 1 28V DC			Adjust Offset to match/sync to other installed equipment
Response Time 0sec	Slope 15	Offset 15	
Lighting Bus 2 28V DC			Lighting Bus 2 not applicable
Response Time 2sec	Slope 50	Offset 50	

Audio Configuration Page	Notes
Alert Volume 50%	Adjust per customer requirement

Voice Command Configuration Page	Notes
Voice Commands	For GMA Voice Commands, otherwise disable all. Disable all for EASA specified configuration. (Delivery to Europe)
"Say..." Commands	
Mute Tone	

Traffic Configuration Page	Notes
Traffic Intruder Symbol Color	White
GTN Control of Traffic System	Yes

Figure 11-6. P/N 4220639-3 (Main SW 6.41/SW 6.51) Configuration Set-Up (Sheet 1 of 3) (Ref. 4192539-101 Rev. H) Rev. 18, Apr 30/2020 11-21/11-22 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

Main System Configuration Page		Notes
Airframe Type	Rotorcraft	
Air/Ground Threshold	10KT	
Air/Ground Discrete	Active for Ground	
GPS Antenna Height Above Ground	5.6 feet	
Fuel Type	Jet A	
Synchro Heading Input	Not Connected	GTN 750 Only
GPS Select	Auto	
Heading Source Input	Not Connected	
Radio Altimeter Input	Not Connected	
Altitude Source Input	Connected	For Garmin GTX 345
	Not Connected	When not connected
Enhanced Lighting Mode	Disabled	
Pilot Position	Left	GTN 750 Only
Crossfill Status Alert	Disabled	
System ID	GTN 1	
Database Sync	Pilot Control	
Airspace Labels	Enabled	
Checklist Page	Task List	
Blackout Mode	Disabled	

Com Configuration Page		Notes
Com Radio	Enabled	
RX Squelch Mode	Advanced	
Mic 1 Gain	+12db	Adjust per customer requirement
Sidetone Source	External	
Sidetone Volume	+60.0db	Adjust per customer requirement
Sidetone Pilot Control	Enabled	

Advanced Com RX Squelch			Notes
	25kHz		
Low		80%	
Mid		80%	
High		80%	
	8.33kHz		Adjust all per customer requirement
Low		80%	
Mid		80%	
High		80%	

Advanced Carrier Squelch			Notes
	25kHz		
Low		55%	
Mid		55%	
High		55%	
	8.33kHz		
Low		0%	
Mid		0%	
High		0%	


VOR/LOC/GS Configuration Page		Notes
Nav Radio	Disabled	
Selected Course	- - -	
Calibrate OBS Resolver		No action taken
ARINC 429 Speed RX	Low	
ARINC 429 Speed TX	Low	
SDI	VOR/ILS 1	
DME Mode		No action taken
DME Channel Mode		No action taken
LOC/GS Filtering	Disabled	

ARINC 453/708 Configuration Page		Notes
Port 1	OFF	GTN 750 Only

Discrete Configuration Page		Notes
	N/A	No action taken/Default

Navigation Features Configuration Page		Notes
Mark on Target	Disabled	
RF Procedure Legs	Disabled	

Vertical Navigation Configuration Page			Notes
Vertical Navigation Type			
VCALC	VNAV		
Transition to Approach	Transition Altitude	VDI Scale	
	FL180	500 FT	

Ownship Configuration Page		Notes
Color Ownship		The following settings can be modified per customer requirements unless noted otherwise
 3-Blade Rotorcraft		

Terrain Configuration Page			Notes
Terrain Mode		Alert Configuration	
HTerrain Proximity	HTerrain Alerting	Audio Clips	
HTAWS		Alert Settings	
		Airport Criteria	
		Runway Surface	Any
		Minimum Length	0 FT

Figure 11-6. P/N 4220639-3 (Main SW 6.41/SW 6.51) Configuration Set-Up (Sheet 2 of 3) (Ref. 4192539-101 Rev. H) Rev. 18, Apr 30/2020 11-23/11-24 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

Chart Configuration Page	Notes
Charts Configured <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> None <hr/> FliteCharts <hr/> ChartView </div>	GTN 750 Only
Com Transmit Power Configuration Page	Notes
Com Transmit Power <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Normal <hr/> 16W </div>	
Weather Radar Configuration Page	Notes
N/A	GTN 750 Only, Not applicable at this time
Flight Simulator Configuration Page	Notes
N/A	Not applicable at this time
Search and Rescue Configuration Page	Notes
N/A	Not applicable at this time
External Systems - Audio Panel	Notes
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Marker Beacon Display </div>	Disable
System - SBAS Providers	Notes
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> WAAS <hr/> EGNOS <hr/> MSAS <hr/> GAGAN </div>	WAAS provides SBAS service for North America and most of Central America Switch to EGNOS prior to shipment per customer requirement (Europe) Switch to MSAS prior to shipment per customer requirement (Japan) Switch to GAGAN prior to shipment per customer requirement (India)
System - GTX 345 FIS-B Weather	Notes
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Enabled </div>	For Garmin GTX 345 FIS-B Weather, otherwise disable Disable prior to shipment per customer requirement (Typical for Non-U.S.)

System - Setup	Notes
CDI Scale Auto ILS CDI Capture Auto Switch Local Offset Adjust to Local time Time Format Local 12 hour Runway Surface Any Runway Length 0 FT Include User Airports Enabled Com Channel Spacing 25.0 kHz Reverse Frequency Lookup Toggled On Com Sidetone Control: Link to COMVOL Toggled Off Offset +0% Keyboard Format ABC Crossfill Disabled	The following settings can be modified per customer requirements unless noted otherwise Switch to 8.33 kHz prior to shipment per customer requirement (Europe/Asia)
System - Alerts	Notes
Arival Active Proximity 3.0 NM Airspace Alerts All Active Altitude Buffer 200 FT	The following settings can be modified per customer requirements unless noted otherwise
System - Units	Notes
Altitude/Vertide Speed Feet (FT/FPM) Distance /Speed Nautical Miles Fuel Pounds (LB) Nav Angle Magnetic (°) Magnetic Variation N/A Position Format LAT/LON Pressure Inches of Mercury Temperature Celsius (°)	The following settings can be modified per customer requirements unless noted otherwise
System - Audio	Notes
Click Volume 60% HTAWS Alert Voice N/A Voice Callout N/A	Setting can be modified per customer requirements unless noted otherwise Not applicable at this time Not applicable at this time
System - Backlight	Notes
Manual Offset No Action	Setting can be modified per customer requirements unless noted otherwise
System - Connxt Setup - GTX 345	Notes
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Bluetooth </div>	For Garmin GTX 345 Bluetooth, otherwise disable
System - Voice Commands	Notes
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Voice Commands </div>	For GMA Voice Commands, otherwise disable Disable all for EASA specified configuraiton. (Delivery to Europe)

Figure 11-6. P/N 4220639-3 (Main SW 6.41/SW 6.51) Configuration Set-Up (Sheet 3 of 3) (Ref. 4192539-101 Rev. H) Rev. 18, Apr 30/2020 11-25/11-26 (Blank)

ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

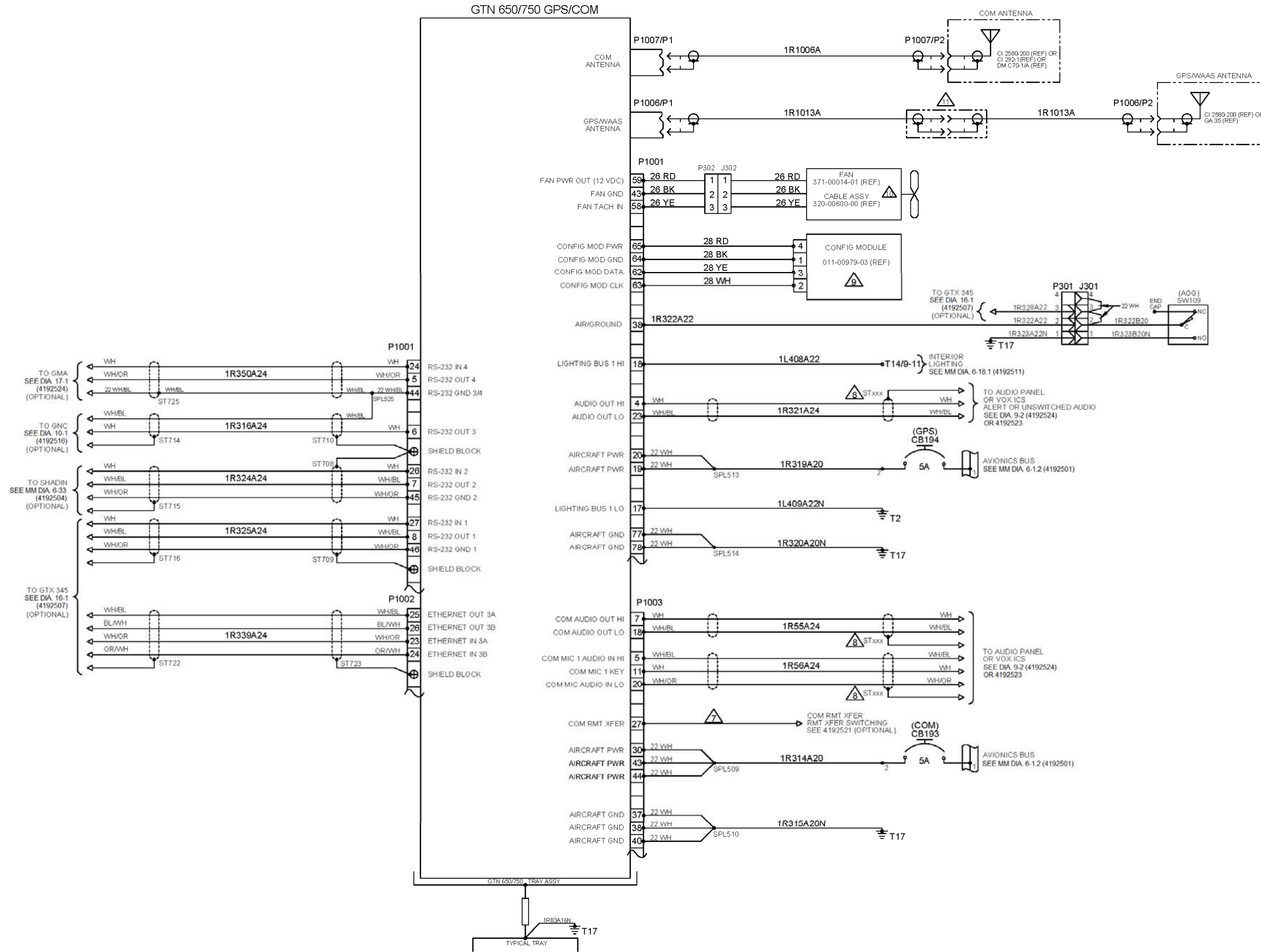


Diagram 11-4. GTN 650 (Main SW 6.41/SW 6.51)
 (Ref. 4192539-101 Rev. H)
 Rev. 18, Apr 30/2020
 11-33/11-34 (Blank)

**CHAPTER 12
GTX 327 TRANSPONDER**

**SECTION 1
SYSTEM DESCRIPTION**

1-1. System Description

A. The GTX 327 is a panel-mounted transponder with the addition of altitude reporting and timing functions. The transponder is a radio transmitter and receiver that operates on radar frequencies, receiving ground radar or TCAS interrogations at 1030 MHz and transmitting a coded response of pulses to ground-based radar on a frequency of 1090 MHz.

B. The GTX 327 installation part number is 4220512-1 (forward antenna location) or 4220512-5 (aft antenna location). The components of the GTX 327 installation include the panel mounted GTX 327 unit and antenna.

C. The GTX 327 installation may be configured with other compatible display units such as the GNS 430W/530W or the GTN 650. The GTN 650 can also be configured as the GTX 327 control head.

D. Power to the GTX 327 is provided via the **XPNDR** circuit breaker (CB38) (3 Amp) located on the left side of the center pedestal.

E. Refer to the 480B Rotorcraft Flight Manual Supplement 28-AC-065 for GTX 327 limitations and basic operation instructions.

1-2. Vendor Manuals

A. The following components listed in Table 12-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft.

Table 12-1. Vendor Manuals

Component	Publication	Vendor
GTX 327	GTX 327 Installation Manual, Document No 190-00187-02, latest revision	Garmin International, Inc. 1200 East 151 st Street Olathe, KS 66062 Tele: (913) 397-8200 Fax: (913) 397-8282 www.garmin.com
	GTX 327 Pilot's Guide, Document No. 190-00187-00, latest revision	

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the GTX 327 are “on condition”.

CHAPTER 12

SANDEL SN3500 EHSI

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Sandel SN3500 is an enhanced electronic horizontal situation indicator (EHSI). It also functions as a secondary attitude indicator when the LED annunciator switch labeled **ATTD IND** is activated. The SN3500 combines the functions of several electronic navigation sources into one unit. For this installation, the SN3500 is configured to display navigation information from a NAV/COM transceiver (VOR/LOC/GS) and an optional navigation receiver. Traffic, weather, ADF, DME, and FCS functions are not integrated into this installation.

B. The SN3500 installation (P/N 4220609-5 and P/N 4220609-7) includes the SN3500 EHSI and LED annunciator switch located on the instrument panel, the SG102 Attitude Heading Reference System (AHRS) located in the baggage box, the MT102 Magnetic Transducer Accessory (MTA) located in the tailcone, and associated wiring. The reversionary function is disabled for configuration P/N 4220609-7 (excluded components include the reversionary switch, day/night illuminated circuit breaker, and associated wiring connections).

C. Power to the EHSI system is provided via the **AHRS** circuit breaker (CB145) (5 Amp) and the **EHSI** circuit breaker (CB144) (5 Amp) located on the left side of the center pedestal. Illumination of the ATTD IND switch is powered by the DAY/NIGHT circuit breaker (CB143) (P/N 4220609-5 only).

D. Refer to the 480B Rotorcraft Flight Manual Supplement, 28-AC-049 Revision 1 (or later), and the current vendor operating manuals/instructions for operation of the EHSI system.

1-2. Vendor Publications

A. The Sandel EHSI installation is to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 13-1.

Table 13-1. Vendor Manuals

Component	Publication	Vendor
SN3500	Component Maintenance Manual, Document No. 82005-0133	Sandel Avionics, Inc. 2401 Dogwood Way Vista, CA 92081, USA Tel: (760) 727-4900 Fax: (760) 727-4899 www.sandel.com
	Installation Manual, Document No. 82005-IM	
	Pilot's Guide, Document No. 82005-PG	
SG102 and MT102	Installation Manual, Document No. 82011-IM	
	Installation/Calibration Utility Software Users Guide, Document No. 82011-ICUG	
	Pilot's Guide, Document No. 82011-PG	

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the Sandel EHSI installation are “on condition”.

CHAPTER 14

RA-4500 RADAR ALTIMETER

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. Enstrom P/N 4220517 provides for installation of the RA-4500 radar altimeter system. P/N 4220517-1, -3, and -5 installations consist of the radar altimeter receiver/transmitter, the RAD-40 radar altimeter display, and two antennas. P/N 4220517-3 and -5 installations include a tone generator to provide audio alerts via an interfaced audio panel. Also, P/N 4220517-5 provides a belly-mounted antenna installation. In comparison, the P/N 4220517-1 and -3 tailcone-mounted antennas allows compatibility when combined with optional float kit equipment.

B. Power to the radar altimeter system is provided via the **RA** circuit breaker (CB119) (3 amp) located on the lower left side of the center pedestal. Power to the **RAD-40** altimeter display is also controlled by switch (SW130), located on the lower side of the circuit breaker panel.

C. A **RA-4500 ZERO CAL** switch is mounted on the forward side of the aft fuel cell support bulkhead. The switch is set to OFF during normal operation. The switch is set to ON while performing calibration (ref. paragraph 4-1-3). A switch guard prevents inadvertent activation of the switch to ON during normal operation.

D. Refer to the 480B Rotorcraft Flight Manual Supplement, 28-AC-071 and the current vendor operating manuals/instructions for operation of the radar altimeter system.

1-2. Vendor Publications

A. The RA-4500 radar altimeter system is to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft. The applicable vendor manuals are listed in Table 14-1.

Table 14-1. Vendor Manuals

Component	Publication	Vendor
RA-4500	Equipment Installation Manual for FreeFlight Systems RA-4000 and RA-4500 Radar Altimeters, Document No. 84629	FreeFlight Systems 3700 Interstate 35 South Waco, TX 76706-3756 1 (254) 662-0000 1 (800) 487-4662
RAD-40	Operation/Installation Manual for FreeFlight Systems RAD-40 Radar Altimeter Display, Document No. 84948	

SECTION 2

AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the RA-4500 installation are “on condition”.

CHAPTER 15

APPAREO SYSTEMS VISION 1000

SECTION 1

SYSTEM DESCRIPTION

1-1. System Description

A. The Vision 1000 is a data gathering system utilizing data from GPS, image capturing, flight attitude acquisition, and ambient and pilot headset audio recording with the intent to aid flight safety and analysis. It will record the aircraft's airframe attitudes, rates, accelerations, GPS position and record cockpit audio and images. Data is recorded simultaneously to both the internal memory and an Appareo SD card.

B. The base Vision 1000 installation is part number 4220641-1, which can also be installed under P/N 4220641-5 or P/N 4220641-6. The -5 and -6 variants are configured to enclose the Vision 1000 installation within a compatible overhead dome light and shroud assembly installation.

C. Components of the installation include the Vision 1000 unit and GPS antenna. The Vision 1000 (0.5 lb) is mounted to the overhead console; the GPS antenna (0.15 lb) is mounted to the top of the instrument panel.

D. Power to the Vision 1000 is provided via the **VISION 1000** circuit breaker (1 Amp) located on the left side of the pedestal circuit breaker panel.

E. Refer to the 480B Rotorcraft Flight Manual Supplement 28-AC-067 for the Vision 1000 limitations and basic operation instructions.

1-2. Vendor Manuals

A. The following components listed in Table 15-1 are to be operated and maintained I/A/W the current vendor's instructions to ensure the continued airworthiness of the aircraft.

Table 15-1. Vendor Manuals

Component	Publication	Vendor
Vision 1000	Vision 1000 Installation Instructions, Manual Number 600840-000024, latest revision	Appareo Systems 1810 NDSU Research Circle North Fargo, ND 58102 USA Tel: +1 701-356-2200 E-mail: support@appareo.com Website: www.appareo.com
	Vision 1000 Instructions for Continued Airworthiness, Manual Number 600845-000019	
	Vision 1000 Configuration Tool User's Guide, Manual Number 600890-000004, latest revision	
	Vision 1000 Playback Utility User's Guide, Manual Number 600890-000006, latest revision	
	Vision 1000 Configuration Overview, Manual Number 600890-000009, latest revision	

SECTION 2

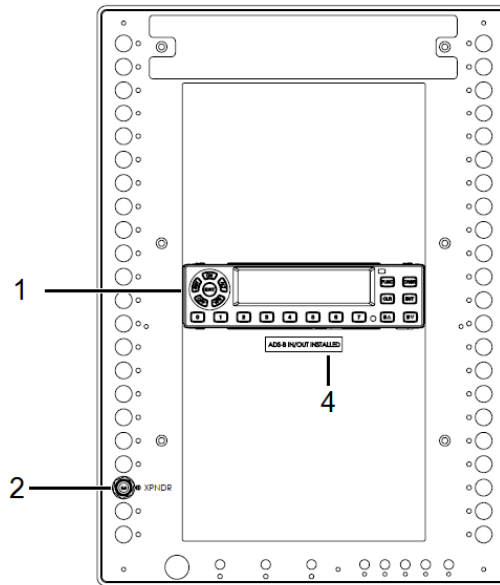
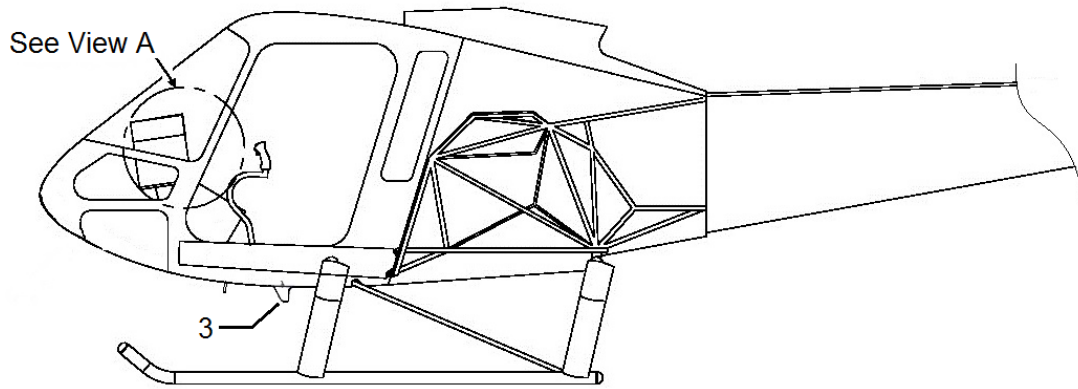
AIRWORTHINESS LIMITATIONS

2-1. Airworthiness Limitations

A. The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

B. For EASA approval, this Airworthiness Limitations Section is approved and variations must also be approved.

C. All components of the Vision 1000 are “on condition”.



View A

Item	Part Number	Component	Quantity
-	4220645-5	GTX 345 Installation	REF
-	010-01216-01	GTX 345 Kit	REF
1	011-03302-00	. GTX 345 unit	1
2	7277-5-3	. Circuit Breaker	1
-	4220637-5	Antenna Installation	REF
3	AV-74-1	. Antenna	1
-	#8	. . Split Washer	2
-	#8-32	. . Hex Nut	2
-	No number	. . Rubber pad	1
4	28-19064-1	. Placard (ADS-B IN/OUT INSTALLED)	1
-	4119835-33	. Placard (RMT.XPNDR.IDENT)	A/R
-	4119835-47	. Placard (TRAFFIC CANCEL)	A/R

Figure 16-1. GTX 345 Installation

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ENSTROM TH-28/480 SERIES MAINTENANCE MANUAL SUPPLEMENT 5

Aircraft Configuration

Aircraft Registration: Enter tail # per customer requirement
 ICAO Address Format: Hex
 ICAO Address: Enter ICAO address per customer requirement

Flight ID

Allow Pilot Entry: No, Typical default setting
 Yes, Per customer requirement
 Default Selection: Same as Tail
 Default: Tail #
 Prefix Selection: Disabled, Typical default setting
 Enabled, Per customer requirement
 Prefix: If Enabled, enter prefix per customer requirement

Airframe Configuration

Max Airspeed: <= 150 knots
 Length: <= 15.0 meters
 Width: <= 23.0 meters
 Category: A: Rotorcraft
 Stall Speed (knots): Unspecified

Operational Options

1090 ES In Capable: Yes
 UAT In Capable: Yes
 1090 ES Out Capable: Pilot Controlled
 UAT Out Remote Control: Disabled
 ADS-B In Processing: Enabled
 Enhanced Surveillance: Disabled

Identification

VFR Squawk Code: 1200
 Installation ID: GTX #1

Unit Options

FIS-B: Enabled
 Bluetooth: Enabled

Display Options

Altitude Units: Feet
 Temperature Units: °C
 Restore Pages on Power-Up: No
 Flash Message Indicator: Yes

Serial

RS-232 Channel 1 Input: Off
 RS-232 Channel 1 Output: Off
 RS-232 Channel 2 Input: Off
 RS-232 Channel 2 Output: Off
 RS-232 Channel 3 Input: Remote Format 1
 RS-232 Channel 3 Output: Remote Format 1
 RS-232 Channel 4 Input: Off
 RS-232 Channel 4 Output: Off
 RS-422 Output: Off

A429

Input Channel 1 Speed: Low
 Input Channel 1 Format: Off
 Input Channel 2 Speed: Low
 Input Channel 2 Format: Off
 Output Channel 1 Speed: High
 Output Channel 1 Format: Off

Discrete Inputs

Audio Mute: J3251-15
 Audio Cancel: J3251-37
 Ident: J3251-36
 Standby: Unassigned
 Squat: J3251-57
 Altitude Source Select: Unassigned
 Air Data Source Select: Unassigned
 Install ID Select: Unassigned
 Squat (A/C On Ground State): Ground (OV)
 Gillham Altitude: Disabled

Discrete Outputs

No action taken

HSDB

G500/600: Not Present
 GTN: Present
 GTS: Not Present
 GX000: Not Present
 Indirect A429 TCAS: Not Present

Garmin Altitude Encoder

Installed: GAE-12
 Ceiling: 13000 ft
 Point Count: 3 is typical. Adjust as needed.

GPS 1

Source: GTN #1
 Source Integrity Level (Errors/Hour): (3) 10⁻⁷
 Lateral Antenna Offset: 0 m
 Longitudinal Antenna Offset: 6 m, for CI 2580-200 Antenna
 8 m, for GA 35 Antenna
 System Design Assurance Level: (2) Level C (<=10⁻⁵)

GPS 2

Source: None
 Source Integrity Level (Errors/Hour): (0) Unknown
 Lateral Antenna Offset: Unknown
 Longitudinal Antenna Offset: Unknown
 System Design Assurance Level: (0) Unknown (>10⁻³)

AHRS Orientation

No action taken

Additional Sensors

Primary Altitude Source: None
 Secondary Altitude Source: None
 OAT Probe Installed: Yes

Audio Options

Output: Transponder
 Volume: 50 is typical. Adjust per customer requirement.
 Voice: Female

Audio Alerts

Timer Expired: Message with Chime
 Traffic: Message
 Altitude Monitor: Message with Chime
 Alert Deviation: 200 ft

Backlight

Display Backlight Source: Lighting Bus
 Display Backlight Minimum: 0
 Keypad Backlight Source: Lighting Bus
 Keypad Backlight Minimum: 1

(Adjust to match/sync with other installed equipment)

Display Defaults

Brightness Offset: 0
 Contrast Offset: 0

(Adjust to match/sync with other installed equipment)

Photocell Curve

Slope: 37
 Offset: 37
 Transition: 10

(Adjust to match/sync with other installed equipment)

Lighting Bus Curve

Slope: 25
 Offset: 0
 Bus Type: 28V DC

(Adjust to match/sync with other installed equipment)

TYPICAL GTX 345 CONFIGURATION WITH A GTN 650/750

Figure 16-2. GTX 345 Configuration (4192507-111J)

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4-2. Wiring Harnesses/Connectors

A. Remove, inspect/repair, and install the airframe mounted wiring harnesses/connectors in accordance with the TH-28/480 Series Maintenance Manual, Section 6, Paragraphs 6-10 through 6-21.

4-3. Figures and Diagrams

- A. GMA 350Hc installation parts list: Figure 17-1 and Figure 17-2.
- B. GMA 350Hc (with marker beacon) installation configuration set-up: Figure 17-3.
- C. GMA 350Hc (without marker beacon) installation configuration set-up: Figure 17-4.
- D. GMA 350Hc audio panel wiring: Diagram 17-1.

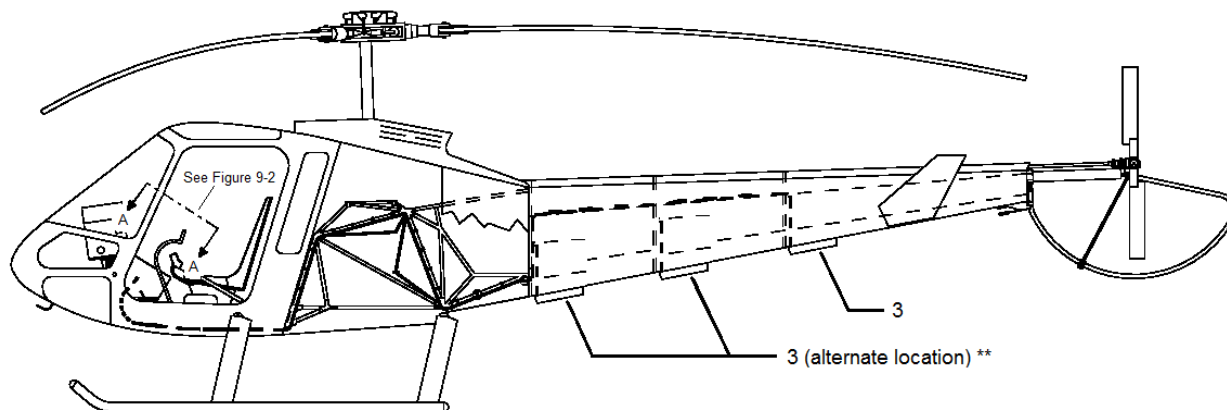
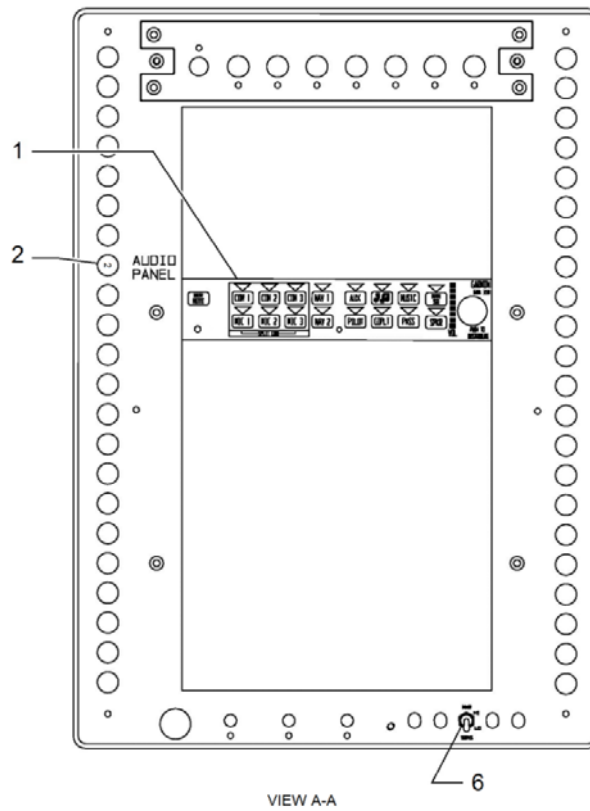


Figure 17-1. GMA 350Hc Installation



Item	Part Number	Component	Quantity
-	4220672-109	GMA 350Hc Audio Panel Installation with Marker Beacon Receiver	REF
-	4220672-111	GMA 350Hc Audio Panel Installation without Marker Beacon Receiver	REF
1	011-02385-50	. GMA 350Hc	1
-	011-02302-00	. Connector Kit (Included with GMA 350Hc)	REF
2	7277-5-5 (5 amp)	. Circuit Breaker	1
3	DMN43-1*	. . Antenna (Used with 4220672-109)	1
-4	AN960-8L	. . Washer	3
-5	AN365-832	. . Nut	3
6	7101SYZQE	. Switch (Used with 4220672-109)	1
-7	161-3402-E	. Entertainment Jack	1
-8**	28-19065-11	. Placard (VOICE COMMANDS DISABLED)	1

- Item not illustrated

* REF 4196512-1; or alternate locations 4196512-3** or 4196512-5**

** EASA-specific configuration only

Figure 17-2. GMA 350Hc Installation

