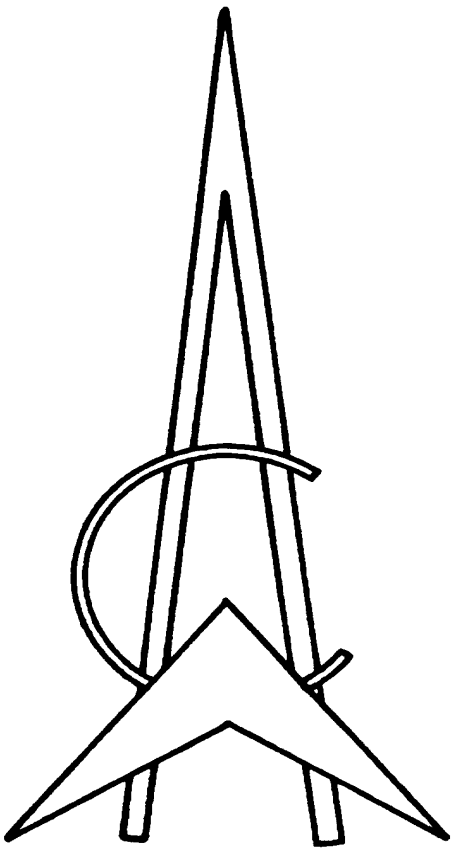

Approved by: Ken Brewer **Ken Brewer** **Repair Station Supervisor**	**Astronautics Corporation of America**
Approved by: **John Latona** **Repair Station Accountable Manager**	**TITLE: Astronautics Corp. of America** **Repair Station Capabilities List**
	QAP 2003/2 — **REV. X**
	CODE IDENT NO 10138 — **Page 1 of 35**

Astronautics Corporation of America	**QAP 2003/2**

REV SYM	DESCRIPTION OF CHANGE	DATE	APPROVED
A	Initial Release.	3/25/2003	PFM
B	Updated to reflect FAA comments regarding when revisions will be submitted.	1/16/2004	JT, DY, JGW
C	Updated to change the preliminary XQAR449-P-L Repair Station Number to XQAR449L. Added the 197800-1 & -3 DU, the 198200-1 & -3 EU, the 198000-( ) EFI and its 198040-( ) Control Panel, and the 260500-( ) EFI.	6/25/2004	JT, EF, JGW
App A	Added the PMA'd 197800-1 and -3 Display Unit, the 198200-1 and -3 Electronics Unit, and the TSOA'd 198000-( ) EFI and its 198040-( ) Control Panel, and the 260500-( ) EFI. The self-evaluation for these items was performed under paragraph 5.5 (d) of this document. These FAA approvals were the basis for the additions.	6/25/2004	JGW
D	Updated to separate Appendix A from the text (removed the date on the cover sheet for the Appendix). The FAA will be sent a copy of the Appendix within ten days of the date on the Appendix whenever items are added or removed. The appendix will be controlled by date. A copy of the QAP cover sheet and text are controlled by revision letter, and a copy of that will be submitted to the FAA within ten days of the date that the new revision letter version of the text is released.	11/30/2004	JT, EF, JGW
App A	Added information on 260000-( ) EFI (STC effort by applicant Gulf Air Maintenance Co. or GAMCO).	12/02/2004	JGW
App A	Added information on the 186950-7 (Hamilton-Sundstrand PMA, Supplement 377). Updated the 197800-( ) Display Unit information and 198200-( ) information based on new or updated PMA Supplements.	08/07/2006	JGW
App A	Added 197800-31 (PMA Supplement 2) and 197800-51 (PMA Supplement 7) Display Units, as well as the 19800-7 Electronic Unit.	05/11/2007	JGW
App A	Corrected minor errors.	06/11/2007	JGW
App A	Added 197800-7 DUs for Boeing 757-200PF based on PMA Supplement 5, dated, Sept 17, 2007.	09/18/2007	JGW
App A	Added the TSO'd 262500-( ) EFI, as well as the 197800-51 DU for Boeing 737-700 based on Boeing aircraft approval.	10/05/2007	JGW
App A	Added the 198200-9 Electronics Unit (PMA Supplement 6), as well as TSO'd 261710-( ) EID and the 261850-( ) EDCU. Also added information on the 186950-11 (Hamilton-Sundstrand PMA, Supplement 404)	03/12/2008	JGW
App A	Added 197800-71 Display Unit information (PMA Supplement 8); updated 197800-51 (PMA Supplement 7)	02/06/2009	JGW

Astronautics Corporation of America | **QAP 2003/2**

REV SYM	DESCRIPTION OF CHANGE	DATE	APPROVED
App A	Added 261400-( ) EFI and 261450-( ) EDCU, as well as 265460-( ) UCDTI. Updated information on 261690-101 and 261700-1 noting the addition of 777-300 series to PMA Supplement 9.	11/11/2009	JGW
App A	Added the TSO'd 266060-1 Electronic Flight Instrument (EFI) the 266070-( ) Control Panel (CP), and the 267070-( ) EDCU.	10/25/2010	JGW
App A	Updated information on the 138740-( ), both the 261690-1 and 261700-1 (in both PMA Supplements 11 and 12), as well as the 261690-201 (PMA Supplement 10) and added a note to 265460-(). Also added the 654100-351 Electronics Unit and the 649100-151, -251, -551, and -651 Display Units (PMA Supplement 13).	06/19/2012	JGW
App A	Added the 186950-9 Flap Control Unit (FCU) based on recently obtained Hamilton Sundstrand Service Bulletin FAS01EC-27-1 and Hamilton Sundstrand drawing 5915069. Also added the 272500-( ) Electronic Flight Instrument (EFI), which was a major change to the previously approved 266060-( ) EFI. The addition of the 272500-( ) was based on FAA TSOA approval letter dated 01/04/2013.	03/29/2013	JGW
App A	Added 267410-1 & -101 Display Units (DUs), the 267420-1 Electronics Unit (EU), the 270250-0002 Universal Airborne Cockpit Display of Traffic Information (UACDTI), and the 273076-0003 EFB A320 Design Approved Support Files based on PMA Supplement 14, dated 08/21/2013. This is a PMA by licensing agreement by Avionics Support Group Inc. (STC ST04126AT).	09/23/2013	JGW
App A	Clarified the connection between the 267420-1 EU, and the associated software parts, UACDTI 270250-0002, and the 273076-0003 EFB A320 Design Approved Support Files, noting that that software is approved to be installed and the EU could be approved for return to service either with or without those files, depending on the customer order.	07/25/2014	JGW
App A	Added 269500-( ), which was granted TSOA on January 26, 2015	01/30/2015	JGW
App A	Added 275000-( ), which was granted TSOA on April 16, 2015. Also corrected typos that had been noted since the last review.	04/17/2015	JGW
App A	Added model 273714-( ) Multi-Function Display System - part numbers 267800-( ) EFI, 269480-( ) EDCU, & 273400-( ) Tray. Sorted the entire list, putting the newest model numbers at the top. Also clarified the certification basis for several model numbers.	06/01/2015	JGW
E	Updated to add a page for FAA acceptance of the procedure (the appendix may be updated separately). Added more detail to the evaluation steps.	03/31/2016	JS, JW
F	Updated to correct page 3 – "FAA Approval" was changed to "FAA Acceptance".	04/07/2016	JS, JW
G	Added a "list of effective pages" and added the following to section 5.6 "…and mail a copy of the revised list to the	05/11/2017	JS, JW

Astronautics Corporation of America | **QAP 2003/2**

REV SYM	DESCRIPTION OF CHANGE	DATE	APPROVED
	applicable Principle Inspection located at the....” Added a table of contents. Moved the revision history to the front of the document, combining it with that of Appendix A.		
H	***Added*** EFI 278440-( ), which was granted TSOA on September 17, 2017. ***Added*** EFIS model 277690, including part numbers DU 277000-( ), CHSP 277190-( ), & CHFDCP, 277200-( ), all of which were granted TSOA on January 24, 2018. ***Updated*** the entry for 186950-9 to include a reference to Gulfstream Aerospace Certification Report GAC-CR-3683	02/14/2018	JS, JGW
J	Added Electronics Unit (Final Assembly) 277950-1, noted in Astronautics'' PMA Supplement 16, dated 3 October 2018.	10/23/2018	JS, JGW
K	Added EFIS Model 277060, including part numbers EFI 276800-( ), Installation Ring 277397-( ) & EFI Wiring Harness 278934-( ) Changed Repair Station Accountable Manager from Jeffrey G. Williams (retired) to Christopher J. Wodushek	06/19/2019	JS, CJW
L	Added 277700-( ) Mast Torque Signal Conditioner (MTSC).	09/07/2019	JS, CJW
M	Removed Models 303560-( ), 303640-( ), 303770-( ), 303880-( ) and 303990-( ) Turn Coordinators. Also removed Model 303890-( ) Gyro.	01/06/2020	JS, CJW
N	Added 282300-() AEC115 Mini-wACS	10/08/2021	JRS, JSL
O	Added 280200-() AvioCast Dock	04/01/2022	JRS, JSL
P	Removed part numbers associated with the sale of the electromechanical product lines to Extant Aerospace Changed repair station supervisor and document approver from Joel Simet to Amanda Zamora	1/24/2023	JSL, AZ
Q	Removed John Latona and added Amanda Zamora as Repair Station Accountable Manager. Removed Amanda Zamora and added Ken Brewer as Repair Station Supervisor. Changed date in Matrix Revision P to 1/24/2023.	5/31/2023	AZ, KB
R	Added 278870-1 Airborne Communication Server (ACS) Added 278830-1 Connectivity Module (CM)	7/12/2023	AZ, KB
T	Removed Amanda Zamora and added Leonisa Shaffer as Repair Station Accountable Manager. Updated 280200-1 to add PMA Supplement 19.	4/23/2024	LS, KB
U	Removed Leonisa Shaffer and added John Latona as Repair Station Accountable Manager. Noting revision S was skipped and never created.	07/18/2024	JSL, KB
V	Added 282100-1 NFDIMU	11/26/2024	JSL, KB
W	Added 278870-101 Communication Server for Pilatus Added 278830-1 for Pilatus Corrected published date	03/07/2025	JSL, KB
X	Added 279800-()	12/19/2025	JSL, KB

FAA FSDO

Acceptance

DANIEL OLIVER JOHNSON JR

Digitally signed by DANIEL OLIVER JOHNSON JR
Date: 2025.12.29 11:20:21 -06'00'

Table of Contents

i. LIST OF EFFECTIVE PAGES

The entire manual will be updated with each revision, noting the revision at the top of each page, rather than tracking revision levels by page number. Changes from the previous revision will be indicated by the use of change bars.

1.0 PURPOSE

This document contains the **capability list** for Astronautics' Certified Repair Station, XQAR449L. This is to fulfill the requirement of the Code of Federal Regulations (CFR), Title 14, Part §145, paragraph 145.215, "Capability list".

2.0 APPLICATION

This list applies to Astronautics' Repair Station XQAR449L. It is a list of articles (accessories and instruments) that may be maintained or altered that can be this repair station. This list is required by Part §145, paragraph 145.215.

3.0 DEFINITIONS

AD	Airworthiness Directive
Articles	For Astronautics, this means airframe parts (e.g. PMA parts), appliances, or component parts (ref. Part 145.3 (b))
A/W	Airworthiness
CFR	Code of Federal Regulations
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
NTSB	National Transportation Safety Board
PMA	Parts Manufacturer Approval
PS	Process Specification
QAM	Quality Assurance Manual
QDP	Quality Departmental Procedure
STC	Supplemental Type Certificate (an aircraft level FAA approval supplementing a Type Certificate)
TC	Type Certificate (an FAA approval at the aircraft level of a certain type of aircraft, e.g. single engine land)
TSO	Technical Standard Order (a set of instructions, the successful completion of which will lead to an FAA approval of the DESIGN, also called a TSO.)
TSOA	Technical Standard Order Authorization (an FAA MANUFACTURING approval for the approved – "TSO'd" -- design at the "box level" for an aircraft part or appliance that performs a specific function as defined in a TSO, e.g. a Horizontal Situation Indicator)

4.0 ASSOCIATED MATERIALS

CFR 14, Part 145	Code of Federal Regulations, Title 14 Aeronautics and Space, Parts 21, 25, 43, 45, 65, 121, 135, 145. **NOTE - current Federal Regulations always take precedent.**
LST-001	Astronautics Training Manual
PS3008, Repair Station Manual	Production Engineering document PS3008, Repair Station Manual.

QAP 2003/1 Astronautics' Repair Station Forms Manual

QAP 2003/3 Astronautics' Repair Station Roster

5.0 PROCEDURES

5.1 As required by Part §145, paragraph 145.215, a certificated repair station may perform maintenance, preventive maintenance, or alterations on an article if the article is listed on a current capability list acceptable to the FAA or on the repair station's operations specifications. The capability list in this document (appendix A) is that list for Repair Station XQAR449L.

5.2 The capability list must identify each article by make and model or other nomenclature designated by the article's manufacturer and be available in a format acceptable to the FAA.

5.3 Frequency of Capability List Updates -- A procedure is required by §145.215(c) for revising the capability list, including methods and frequency of such evaluations, and procedures. Regarding Frequency:

a) **Astronautics' equipment** - The Capability List is to be updated on an "as needed" basis. As an Original Equipment Manufacturer (OEM), Astronautics Corporation of America's manufacturing operation obtains FAA approvals for designs under Supplemental Type Certificates (STCs), Technical Standard Orders (TSOs), and Parts Manufacturer Approvals (PMAs), and is both a Design Approval Holder (DAH) and a Production Approval Holder (PAH). As a DAH, Astronautics provides the required data, equipment, and parts to the Astronautics' Repair Station.

1. If the Repair Station has evidence of FAA approval, such as a TSO authorization letter or PMA Supplement, and if the Repair Station has the FAA approved or accepted data and ability to maintain the item – specifically that it has the required housing, facilities, equipment, tools, technical data, and personnel -- then that item can be added.
2. Evidence that a "Self-Evaluation" audit has been successfully completed is shown by listing the evidence of FAA approval in the Capabilities List on the row for that particular article. The date of updated Capabilities List is noted in the header, along with the initials of the person who performed the "Self-Evaluation".
3. Items may be deleted at any time for any reason, by the Repair Station Accountable Manager, or the Repair Station Supervisor. In that case, again the date of updated Capabilities List is noted in the header, along with the initials of the person who updated the Capabilities List.
4. In the case of new TSOA approvals or PMA's the FAA's approval will stand as a sufficient review for adding the part number to the capability list. An addition to the list of an item that is NOT manufactured by Astronautics is covered as noted in 5.3 (b) below. In either case, an FAA approved item is required to be added to the Capabilities List before that item can be approved for return to service.

b) **Non-Astronautics equipment** - Again, this is "as needed". Once a change is proposed to add non-Astronautics built equipment (instruments, accessories, etc.) to the capability list, Quality Assurance Engineering, or Repair Station personnel as designated by management, will perform an evaluation audit. The purpose of this audit will be to ensure the applicable FAA approved data is available, and appropriate test equipment is available, as well as

anything else that may be required. This audit must show the required items are in place before adding that equipment to the capabilities list.

c) **Other Evaluations** - At any time that a significant change is made, as determined by the Accountable Manager, the Repair Station Supervisor, or Astronautics' management (e.g. a major change to the housing of the repair station), then the repair station must perform a self evaluation relevant to that change to determine that the repair station still has all of the housing, facilities, equipment, material, technical data, processes, and trained personnel in place to perform the work on the article as required by part 145. Again, this is on an "as needed" basis.

5.4 **Methods of Evaluations** - There are several methods of performing self evaluations.

a) The evaluation for adding items to the Capabilities List may take the form of an initial Technical Standard Order Authorization (TSOA) request documented in a letter submitted to the FAA Aircraft Certification Office. As a manufacturer, Astronautics considers an FAA TSOA approval request package, a.k.a. a TSO request letter, evidence of such an evaluation. NOTE: For new TSOA approval requests, the addition to the Capability List must be backed by an approval from the FAA.

b) The evaluation for adding items to the Capabilities List may take the form of a minor change review, which will be documented in a letter submitted to the FAA Aircraft Certification Office. A "minor change" request letter sent to the FAA is evidence of an evaluation audit as well. NOTE: "Minor changes" are "preapproved" and may be added to the capability list as long as a "minor change" letter is submitted to the FAA within the time frame noted in FAR 21.611(a).

c) The evaluation for adding items to the Capabilities List may take the form of a major change review, which will be documented in a letter submitted to the FAA Aircraft Certification Office. A "major change" letter sent to the FAA is evidence of an evaluation audit as well. NOTE: For "major change" TSOA approval requests, the addition to the Capability List must be backed by an approval from the FAA.

d) Non-Astronautics instruments and accessories will be evaluated on a "as needed" basis as outlined in 5.5 below.

5.5 **Evaluation Procedure** -- Once a change is proposed to add instruments, accessories, etc. to the capability list, Quality Assurance Engineering, or Repair Station personnel as designated by management, will perform an evaluation audit.

a) The assigned auditor will ensure the applicable FAA approved design data is available and appropriate test equipment is available, as well as anything else that may be required. The repair station must perform this self evaluation to determine that the repair station has all of the housing, facilities, equipment, material, technical data, processes, and trained personnel in place to perform the work on the article as required by part 145.

b) The self-evaluation must be performed in accordance with the procedures under § 145.209(d)(2). This audit must show that all the required items are in place before adding that equipment to the capabilities list. An article may be listed on the capability list only if the article is within the scope of the ratings of the repair station's certificate, and only after the successful completion of this self-evaluation.

c) As required by part 145, the Repair Station had to perform a self evaluation initially to determine that the Repair Station had all of the housing, facilities, equipment, material,

technical data, processes, and trained personnel in place to perform the work on the articles listed on the original capability list. As a result, the self-evaluation covering the added articles can be limited to the additional needs generated by those added articles, not on the entire Repair Station.

d) If the evaluation results show that actions should be taken, QAE must report the results to the QAE Manager, or the appropriate management in the Repair Station, for review and action. Before an addition to the capabilities list is made, all steps must be taken in order to meet the requirements for such additions. Articles manufactured by Astronautics under TSOA approvals and PMA approvals will be added to the list in each case only after the FAA approval is obtained, as required, and before the Repair Station performs maintenance or alteration on the affected articles. The capability list will also be updated on an "as needed" basis to reflect articles made by other manufacturers for which Astronautics has FAA approved data and for which Astronautics has the ratings and equipment necessary for performing the work.

e) Any item requiring an FAA approval for return to service form must be added to the Capabilities List before any Repair Station Repairman will be allowed to complete such a form for the Repair Station.

f) The repair station must retain on file documentation of the last evaluation performed, and of all other evaluations for a minimum of two (2) years.

g) Under NO circumstances is an article to be returned to service by Astronautics' Repair Station if that article is not on the FAA accepted capability list.

5.6 **Procedure for Revising the Capabilities List** -- Upon the successful completion of the self-evaluation– i.e. the audit has been performed and all action items are closed -- the Capability List may be updated. The Repair Station Accountable Manager or Repair Station Supervisor will provide a copy of the revised list to the applicable Principle Inspection located at the certificate holding district office, i.e. the Flight Standards District Office (FSDO) in Milwaukee Wisconsin. The preferred method for providing a copy of the revised list to the FAA as directed in Part §145.209(d), is to mail it, but a paper copy may also be provided in person. Only after the FAA accepts the revised Capability List, as indicated by signing the "FAA FSDO Acceptance" page of this document, will the revision be considered to be acceptable for use by the Repair Station. Copies may then be posted on the internal "intranet" webpage, as well as on the external website. The external website is currently http://astronautics.com, or more directly at http://astronautics.com/support/#_repairstation.

APPENDIX A

CAPABILITY LIST
for
FAA Certified Repair Station XQAR449L

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Display Unit, Badger Gen 2	279800-()	ACA is an approved source of supply for the Display Unit, Badger Gen 2	TSO-C209, TSO-C3e (incomplete) and TSO-C165b	12/17/2025	279800-() where 279800-YYY-XXX is the first in a series where YYY can be -101 or -301 based on customer installation and XXX can be -201, -301, or -901 based on flight application and configuration file software part numbers installed.
Communication Server (Final Assembly)	278870-101	ACA is an approved source of supply for the Communication Server (Final Assembly)	PMA No. PQ2070CE Supplement No. 21	12/16/2024	PMA was granted on 2024 November 21 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corp. of America and Pilatus Aircraft Ltd. File No. 1010569 dated 11/21/2024 DWG No: 278870-101 Rev: E Date: 3/1/2023 or later FAA-approved revisions Pilatus PC-24
Connectivity Module (Final Assembly)	278830-1	ACA is an approved source of supply for the Connectivity Module (Final Assembly)	PMA No. PQ2070CE Supplement No. 21	12/16/2024	PMA was granted on 2024 November 21 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corp. of America and Pilatus Aircraft Ltd. File No. 1010569 dated 11/21/2024 DWG No: 278830-1 Rev: F

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
					Date: 8/22/2023 or later FAA-approved revisions Pilatus PC-24
New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	282100-1	ACA is an approved source of supply for the New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	PMA No. PQ2070CE Supplement No. 20	11/20/2024	PMA was granted on 2024 November 20 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America and Airbus File No. CT2407948, dated September 23, 2024, DWG No: 282100-1 Rev: E Date: August 29,2024 or later FAA-approved revisions A320-251N A320-252N A320-253N A320-271N A320-272N A320-273N

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	282100-1	ACA is an approved source of supply for the New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	PMA No. PQ2070CE Supplement No. 20	11/20/2024	PMA was granted on 2024 November 20 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America and Airbus File No. CT2407949, dated September 23, 2024, DWG No: 282100-1 Rev: E Date: August 29,2024 or later FAA-approved revisions A321-251N A321-251NX A321-252N A321-252NX A321-253N A321-253NX A321-271N A321-271NX A321-272N A321-272NX
New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	282100-1	ACA is an approved source of supply for the New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	PMA No. PQ2070CE Supplement No. 20	11/20/2024	PMA was granted on 2024 November 20 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America and Airbus File No. CT2408237, dated September 30, 2024, DWG No: 282100-1 Rev: E Date: August 29,2024 or

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
					later FAA-approved revisions A319-151N A319-153N A319-171N
New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	282100-1	ACA is an approved source of supply for the New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	PMA No. PQ2070CE Supplement No. 20	11/20/2024	PMA was granted on 2024 November 20 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America and Airbus File No. CT2409544, dated November 7, 2024, DWG No: 282100-1 Rev: E Date: August 29,2024 or later FAA-approved revisions A321-253NY
New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	282100-1	ACA is an approved source of supply for the New Flight Data Interface and Management Unit (Final Assembly) (NFDIMU)	PMA No. PQ2070CE Supplement No. 20	11/20/2024	PMA was granted on 2024 November 20 Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America and Airbus File No. CT2409648, dated November 8, 2024, DWG No: 282100-1 Rev: E Date: August 29,2024 or

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
					later FAA-approved revisions A319-173N
Airborne Communication Server (ACS)	278870-1	The Airborne Communication Server (ACS) is a component of the Aerosync Max (AGCS) System. ACA is the approved source of supply of the kit.	PQ2070CE PMA supplement 18	07/07/2023	PMA was granted on 2023 July 07. Identicality per 14 CFR 21.303, Airbus Helicopter (Airbus) assist letter dated June 20, 2023, letter number PMA 2023-02, DWG No: 278870-1 Rev: P Date: February 24, 2023 or later FAA approved revisions
Connectivity Module (CM)	278830-1	The Connectivity Module (CM) is a component of the Aerosync Max (AGCS) System. ACA is the approved source of supply of the kit.	PQ2070CE PMA supplement 18	07/07/2023	PMA was granted on 2023 July 07. Identicality per 14 CFR 21.303, Airbus Helicopter (Airbus) assist letter dated June 20, 2023, letter number PMA 2023-02, DWG No: 278870-1 Rev: P Date: February 24, 2023 or later FAA approved revisions
AvioCast Dock	280200-1	The AvioCast dock is a component of the AvioCast kit. ACA is the approved source of supply of the kit.	PQ2070CE PMA supplement 17 for De Havilland Aircraft of Canada Limited DHC-8-400 Series. Also, Canard STC# ST04553CH	04/01/2022 03/16/2022	PMA supplement **17** was granted on 2022 April 01. Identically per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America (Astronautics) and Canard Aerospace, dated March 21, 2022, DWG No: 40221 Rev: D

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
			PMA supplement 19 for Boeing 737-700 and 737-800 Series Also, Canard STC# ST04630CH	02/22/2024 01/29/2024	Date: January 12, 2022 or later FAA approved revisions PMA supplement **19** was granted on 2024 February 22. Identicality per 14 CFR 21.303, licensing agreement between Astronautics Corporation of America (Astronautics) and Canard Aerospace Corporation (Canard) dated 1/30/2024 DWG No: 40225 Rev: C Date: 1/23/2024 or later FAA-approved revisions
AEC115 Mini-wACS	282300-()	This consists of: 282300-( ) where 282300-1 is the first in the series Miniature Wireless Airborne Communication Server 282588-( ) where 282588-0003 is the first in the series Miniature Wireless Airborne Communication Server Boot Loader 282283-( ) where 282283-0005 is the first in the series Miniature Wireless Airborne Communication Server Platform Software 282589-( ) where 282589-0004 is the first in the series Miniature Wireless Airborne Communication Server Radio Firmware 283786-( ) where 283786-0003 is the first in the series Miniature Wireless Airborne Communication Server Resident Loader In each case the parens, i.e. ( ), indicate this will be a series of part numbers under a TSO minor change.	TSO-C109	10/08/2021	TSOA was granted on 2021 October 08.
Mast Torque Signal Conditioner (MTSC) (Final Assembly)	277700-( )	The MTSC is a component of the Bell Helicopter Textron Inc (BHT) MTSC retrofit kit. ACA is the approved source of supply to BHT.	BHT TC H4SW Revision 34 for Bell 212, 412, 412EP, 412CF.	02/26/2019	

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Installation Wiring Harness, Electronic Flight Instrument	278934-( )	This Installation Wiring Harness, Electronic Flight Instrument is part of an Electronic Flight Instrument System (EFIS), model 277060 consisting of Electronic Flight Instrument (EFI) 276800-( ), Installation Ring, 277397-( ) and Electronic Flight Instrument Installation Wiring Harness 278934-( ). In each case the parens, i.e. ( ), indicate this will be a series of part numbers under a TSO minor change.	TSO-C3e incomplete; TSO-C165a and TSO-C209.	05/30/2019	EFIS model 277060 includes part numbers EFI 276800-( ), Installation Ring 277397-( ) & EFI Installation Wiring Harness 278934-( ), all of which were granted TSOA on May 30, 2019.
Installation Ring	277397-( )	This Installation Ring is part of an Electronic Flight Instrument System (EFIS), model 277060 consisting of Electronic Flight Instrument (EFI) 276800-( ), Installation Ring, 277397-( ) and Electronic Flight Instrument Installation Wiring Harness, 278934-( ). In each case the parens, i.e. ( ), indicate this will be a series of part numbers under a TSO minor change.	TSO-C3e incomplete; TSO-C165a and TSO-C209.	05/30/2019	EFIS model 277060 includes part numbers EFI 276800-( ), Installation Ring 277397-( ) & EFI Installation Wiring Harness 278934-( ), all of which were granted TSOA on May 30, 2019.
Electronic Flight Instrument (Final Assembly)	276800-( )	This Electronic Flight Instrument (EFI), is part of an Electronic Flight Instrument System (EFIS), model 277060 consisting of Electronic Flight Instrument (EFI), 276800-( ), Installation Ring, 277397-( ) and Electronic Flight Instrument Installation Wiring Harness, 278934-( ). In each case the parens, i.e. ( ), indicate this will be a series of part numbers under a TSO minor change. This EFIS is also known as Astronautics AFI4700 Roadrunner.	TSO-C3e incomplete; TSO-C165a and TSO-C209.	05/30/2019	EFIS model 277060 includes part numbers EFI 276800-( ), Installation Ring 277397-( ) & EFI Installation Wiring Harness 278934-( ), all of which were granted TSOA on May 30, 2019. Equipment limitations for the incomplete system TSO authorizations and non-TSO functions of the EFIS must be provided to each installer and are found in the following documents: PLI12862, Rev. E dated April 30, 2019, Installation Procedures and Equipment Limitations; ICD12854 Rev. H, dated April 15, 2019, Interface Control Document and CMM14033 Rev B, Component Maintenance Manual.
Electronics Unit (Final Assembly)	277950-1	Electronics Unit, a.k.a. the block-point 5 (BP5) EU. This Electronics Unit (EU) is part of an Electronic Flight Bag (EFB). The EU is compatible with the 261690-1, 261690-101, or 261690-201 Display Units.	PMA Supplement 16 dated 3 October 2018,	10/03/2018	PMA per licensing agreement and Identically per 14 CFR, § 21.303, between Boeing Commercial Airplane Group and Astronautics Corp. of America, dated 9/27/2018, PMA Assist Letter" from The Boeing

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
					Company, which was letter "2423 ASTRONAUTICS CORP OF AMERICA PMA TA 10-100", a.k.a. "2423", dated 9/27/2018
Display Unit (DU)	**277000-( ),**	This is Display Unit is part of an Electronic Flight Instrument System (EFIS), model 277690, consisting of Display Unit (DU), 277000-( ), Course/Heading Select Control Panel (CHSP), 277190-( ), and Course/Heading/Flight Director Control Panel (CHFD), 277200-( ). In each case, the parens, i.e. ( ), indicate this will be a series of part numbers under a TSO minor change. This EFIS is also known as Astronautics' Integrated Avionics System (IAS).	**TSO-C113a** and incomplete or partial TSO TSO-C3e.	01/24/2018	EFIS model 277690, includes part numbers DU 277000-( ), CHSP 277190-( ), and CHFDCP, 277200-( ), all of which were granted TSOA on January 24, 2018. Under TSO-C113a, this EFIS is approved for display aspects of: TSO-C2d, TSO-C3e, TSO-C4c, TSO-C5f , TSO-C6e, TSO-C8e, TSO-C10b, TSO-C34e, TSO-C36e, TSO-C40c, TSO-C41d, TSO-C43c, TSO-C44c, TSO-C46a, TSO-C47a, TSO-C49b, TSO-C55a, TSO-C63d, TSO-C66c, TSO-C87a, TSO-C102, TSO-C113a, TSO-C115d, TSO-C118a, TSO-C146d, TSO-C147a, TSO-C165a, TSO-C194, TSO-C198, and TSO-C201.
Course/Heading Select Control Panel (CHSP)	**277190-( )**	This is Course/Heading Select Control Panel is part of an Electronic Flight Instrument System (EFIS), model 277690, consisting of Display Unit (DU), 277000-( ), Course/Heading Select Control Panel (CHSP), 277190-( ), and Course/Heading/Flight Director Control Panel (CHFD), 277200-( ). The parens noted here, i.e. ( ), indicate this can be a series of part numbers under a TSO minor change.	**TSO-C113a** and incomplete or partial TSO TSO-C3e.	01/24/2018	EFIS model 277690, includes part numbers DU 277000-( ), CHSP 277190-( ), and CHFDCP, 277200-( ), all of which were granted TSOA on January 24, 2018.

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Course/Heading/Flight Director Control Panel (CHFD)	**277200-( )**	This is Course/Heading Select Control Panel is part of an Electronic Flight Instrument System (EFIS), model 277690, consisting of Display Unit (DU), 277000-( ), Course/Heading Select Control Panel (CHSP), 277190-( ), and Course/Heading/Flight Director Control Panel (CHFD), 277200-( ). The parents noted here, i.e. ( ), indicate this can be a series of part numbers under a TSO minor change.	**TSO-C113a** and incomplete or partial TSO TSO-C3e.	01/24/2018	EFIS model 277690, includes part numbers DU 277000-( ), CHSP 277190-( ), and CHFDCP, 277200-( ), all of which were granted TSOA on January 24, 2018.
Electronic Instrument Display (Final Assembly), a.k.a. AFI3300 Bearing Distance Heading Indicator (BDHI).	**278440-( )**	This is an Electronic Flight Instrument (EFI), model 278440 and initial part number "-1", where the "-1" is the first part number in a series. This EFI is also known as the AFI3300 Bearing Distance Heading Indicator (BDHI). The 278440-( ) was a major change to the TSOA approved 275000-( ) Electronic Flight Instrument.	**TSO-C113a** and incomplete or partial TSOs: TSO-C40c and TSO-C66c.	09/17/2017	The model 278440 EFI was designed for cockpit installations in aircraft approved under Title 14 of the Code of Federal Regulations (14 CFR) part 25. It is part of the AFI 3300 family of instruments.
Electronic Flight Instrument (Final Assembly); a.k.a. an Electronic Instrument Display (EID)	**275000**-( )	This is an Electronic Flight Instrument (EFI), model 275000 and part number "-1" and "-101", where both the 275000-1 and the 275000-101 are the first part numbers in a series. The initial flight application software part number for both part numbers is 275090-0005\000.	**TSO-C113a** and partial TSOs C2d, C8e, C10b, C43c, C44c, C46a, C47a, C49b, C55a, C95a, C101, and C106.	04/16/2015	The EDI was designed for use on Part 23 aircraft, part of the AFI 3300 family of instruments.
Multi-function Display System (MFDS)	Model **273714-( )** with P/Ns: 267800-( ) EFI, 269480-( ) EDCU, and 273400-( ) Tray	Multi-function Display System (MFDS), model 273714-( ) where model 273714-1 is the first in a series, and the 273714-1 includes: 267800-( ) Electronic Flight Instrument (EFI), 269480-( ) Engine Data Concentrator Unit (EDCU), and 273400-( ) Mounting Tray. The 267800-1, 269480-1, and 273400-5 are the first part numbers in a series.	**TSO-C113a,** with C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C43c, C46a, C47a, C49b, C55a, C63d, C66c, C87a, C101, C110a, C115c, 118, C119d, C146d, C147, C165a, C194, C198, and C201.	05/27/2015	Astronautics' designed this MFDS system, model number 273714-( ), for use on 14 CFR Part 27 or Part 29 aircraft; with the initial target aircraft to be Agusta Bell AB-212 helicopters.

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
EFB A320 Design Approved Support Files	273076-0003	These Design Approved Support Files are part of the STC for the installation of the NEXIS ™ Electronic Flight Bag (EFB). This software is covered by its own PMA part number, and is to be installed in a 267420-1 Electronics Unit in the field. Note: When a 267420-1 is returned containing this software, it could be returned with it, but not usually - follow customer orders.	**PMA Supplement 14 for Airbus A319, A320, and A321. FAA STC ST04126AT**	PMA 14 08/21/2013. STC ST04126AT issued August 13, 2013 for Airbus A319, A320, and A321 series.	Avionics Support Group, Inc. (ASG) STC ST04126AT; this is a change to the original Airbus TC A28NM. PMA Technical Assist letter from ASG's Hugo L. Fortes dated 08/13/2013. ASG Master Data List, 29106-MDL, Revision D, dated July 22, 2013 ASG Master Kit List, 29106-MKL, Revision C, dated April 02, 2013
Electronic Flight Instrument (EFI),	272500-( ), (a major change to 266060-( )	In a letter dated January 4, 2013 from Brenda S. Ocker, Aerospace Engineer, from the Federal Aviation Administration's Small Airplane Directorate, Chicago Aircraft Certification Office located at 2300 East Devon Avenue, Des Plaines, IL 60018, Astronautics' was granted TSO Authorization approval for the 272500-1 EFI as the first of a series, along with 272535-0011 Flight Application Software.	**TSO-C113** and display aspects of C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C43c, C44c, C46a, C47a, C49b, C66c, C87, C95a, C101, C146c, C147, C165, and C198.	01/04/2013	Pilatus PC-7 (USA FAA TC), and Switzerland FOCA TC. The 272500-1 with272535-0011 Flight Application Software is the same as Pilatus Aircraft part number 975.96.32.744.
Universal Airborne Cockpit Display of Traffic Information	270250-0002	This UACDTI is part of the STC for the installation of NEXiS ™ Electronic Flight Bag (EFB). This software is covered by its own PMA part number, and is to be installed in a 267420-1 Electronics Unit in the field. Note: When a 267420-1 is returned containing this software, it could be returned with it, but not usually - follow customer orders.	**PMA Supplement 14 for Airbus A319, A320, and A321. FAA STC ST04126AT**	PMA 14 08/21/2013. STC ST04126AT issued August 13, 2013 for Airbus A319, A320, and A321 series.	Avionics Support Group, Inc. (ASG) STC ST04126AT; this is a change to the original Airbus TC A28NM. PMA Technical Assist letter from ASG's Hugo L. Fortes dated 08/13/2013. ASG Master Data List, 29106-MDL, Revision D, dated July 22, 2013 ASG Master Kit List, 29106-MKL, Revision C, dated April 02, 2013

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Electronic Flight Instrument (EFI)	269500-( )	The 269500-1 Electronic Flight Instrument (EFI) was approved in TSOA letter dated 01/26/2015, with 269696-( ) Flight Application Software,	**TSO-C113a,** & C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C46a, C63d, C66c, C87a, C95a, C115c, C119d, C151c	TSOA letter dated January 26, 2015	Linked to the initial TC project for the SARAS aircraft, the first transport category aircraft designed and developed in India. Oversight was by National Aerospace Laboratories (NAL).
Electronics Unit	267420-1	This Electronics Unit (EU) is part of the NEXiS ™ Electronic Flight Bag (EFB). The EU works with either the 267410-1 Display Unit or the 267410-101 Display Unit. Refer to notes below regarding PMA'd software parts 270250-0002 and 273076-0003.	**PMA Supplement 14 for Airbus A319, A320, and A321. FAA STC ST04126AT**	PMA 14 08/21/2013. STC ST04126AT issued August 13, 2013 for Airbus A319, A320, and A321 series.	Avionics Support Group, Inc. (ASG) STC ST04126AT; this is a change to the original Airbus TC A28NM. PMA Technical Assist letter from ASG's Hugo L. Fortes dated 08/13/2013. ASG Master Data List, 29106-MDL, Revision D, dated July 22, 2013 ASG Master Kit List, 29106-MKL, Revision C, dated April 02, 2013
Display Unit	267410-1	This Display Unit (DU) is part of the NEXiS ™ Electronic Flight Bag (EFB). The DU works with the 267420-1 Electronics Unit. This is a modification part.	**PMA Supplement 14 for Airbus A319, A320, and A321. FAA STC ST04126AT**	PMA 14 08/21/2013. STC ST04126AT issued August 13, 2013 for Airbus A319, A320, and A321 series.	Avionics Support Group, Inc. (ASG) STC ST04126AT; this is a change to the original Airbus TC A28NM. PMA Technical Assist letter from ASG's Hugo L. Fortes dated 08/13/2013. ASG Master Data List, 29106-MDL, Revision D, dated July 22, 2013 ASG Master Kit List, 29106-MKL, Revision C, dated April 02, 2013

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Display Unit	267410-101	This Display Unit (DU) is part of the NEXiS ™ Electronic Flight Bag (EFB). The DU works with the 267420-1 Electronics Unit.	**PMA Supplement 14 for Airbus A319, A320, and A321. FAA STC ST04126AT**	PMA 14 08/21/2013. STC ST04126AT issued August 13, 2013 for Airbus A319, A320, and A321 series.	Avionics Support Group, Inc. (ASG) STC ST04126AT; this is a change to the original Airbus TC A28NM. PMA Technical Assist letter from ASG's Hugo L. Fortes dated 08/13/2013. ASG Master Data List, 29106-MDL, Revision D, dated July 22, 2013 ASG Master Kit List, 29106-MKL, Revision C, dated April 02, 2013
Engine Date Concentrator Unit (EDCU), part of the system known as "Gen II 6x8 EFIS", RSAF EFIS, or "Badger EFIS"	267070-( )	The 267070-1 EDCU was approved in TSOA letter dated 10/25/10, with flight software part number S01076-09C23. This is part of an integrated EFIS system including: 266060-() 6"x8" EFI; 266070-( ) CP; & 267070-( ) EDCU.	**TSO-C113** and display aspects of TSO-C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C43c, C44c, C46a, C47a, C49b, C52b, C55a, C63c, C66c, C87, C95a, C115b, C119c, C129a, and C151b.	10/25/2010	
Control Panel (CP), part of the system known as "Gen II 6x8 EFIS", RSAF EFIS, or "Badger EFIS"	266070-( )	The 266070-1 CP was approved in TSOA letter dated 10/25/10, with 260996-0003 Flight Application Software. This is part of an integrated EFIS system including: 266060-() 6"x8" EFI; 266070-( ) CP; & 267070-( ) EDCU.	**TSO-C113** and display aspects of TSO-C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C43c, C44c, C46a, C47a, C49b, C52b, C55a, C63c, C66c, C87, C95a, C115b,C119c, C129a, and C151b.	10/25/2010	

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Electronic Flight Instrument (EFI), part of the system known as "Gen II 6x8 EFIS", RSAF EFIS, or "Badger EFIS"	266060-( )	The 266060-1 Electronic Flight Instrument (EFI) was approved in TSOA letter dated 10/25/10, with 266720-0003 Flight Application Software, This is part of an integrated EFIS system including: 266060-() 6"x8" EFI; 266070-( ) CP; & 267070-( ) EDCU.	**TSO-C113** and display aspects of TSO-C2d, C3e, C4c, C5f, C6e, C8e, C10b, C34e, C36e, C40c, C41d, C43c, C44c, C46a, C47a, C49b, C52b, C55a, C63c, C66c, C87, C95a, C115b, C119c, C129a, and C151b.	10/25/2010	
Universal Cockpit Display of Traffic Information (UCDTI)	265460-( )	This is a software only TSOA. The UCDTI software application, Astronautics P/N 265460-( ), is intended for use in Class 2 Electronic Flight Bag (EFB) Systems installed in Part 23, Part 25, Part 27, and/or Part 29 aircraft;	**TSO-C165**	10/2/2009	If this aircraft instrument software is corrupted, and is "fixed", this could be considered to be an instrument repair. As a result, it is listed here. Installing this UCDTI on an EFB typically requires a field approval, not an STC.
Electronic Flight Instrument a.k.a. Pilatus 6x8 EFI	262500-( )	Electronic Flight Instrument (EFI). This was a major change to the 260500-5 due to a software change that added functionality. (There was essentially no change to the hardware.) The 262500-1 was approved in TSOA letter dated 09/27/07. Follow-on units, the 260500-3, -5, -7 etc. are to be covered in minor change letters.	**TSO-C113; also C2d,** C3d, C4c, C5e, C6d, C8d, C9c, C10b, C34e, C36e, C40c, C41d, C43c, C44c, C47a, C49b, C52b, C66c, C87, C95, C101,	TSOA letter 09/27/07	Pilatus PC-7 (USA TC) and PC-9, among others

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
			C129a, and C147.		
Electronics Unit	261700-1	Electronics Unit (EU) -- part of the Pilot Information Display system, a.k.a. PID, or Electronic Flight Bag (EFB). The EU works with the 261690-1, -101, or -201 Display Unit. Boeing Service Letter 737-SL-46-006-A, dated 11/12/2009, allows the installation of Electronic Flight Bag (EFB) Generation 2 hardware with Block Point 4.0 (BP 4) software -- both the Electronics Unit (EU) and Display Unit (DU) -- to be installed on Boeing 737 aircraft.	**PMA, Supplement 9, 10, 11 and 12.** **Also, Boeing B-787 FAA TC T00021SE, and EASA TC A.115 (IM) for Boeing 787**	PMAs: **9 -**05/20/2009. **10 -**08/30/2012 **11-** 03/23/2012 **12-** 05/03/2012 Also T00021SE, September 22, 2011. and EASA TC A.115 (IM) Boeing 787, August 26, 2011.	Boeing FAA TCs T00001SE and EASA A.003 (B777) and T00021SE & EASA A.115 (B787). Built as a PMA under Production PMA PQ2070CE-D. Connected to the TCs as shown in such documents as the ANA Illustrated Parts Data for the Boeing 787-8 aircraft. Initially designed for the 787-8, this is approved for use in other aircraft as well, including 737-600, 737-700, 737-700C, 737-800, 737-900, 737-900ER, 767-300, 777-200, 777-200LR 777-300, 777-300ER, 777F, 747-8, 747-8F .
Display Unit	261690-201	Display Unit (DU) -- part of the Pilot Information Display system, a.k.a. PID, or Electronic Flight Bag (EFB). The DU works with the 261700-1 Electronic Unit. FAA traceability for approval of PN 261690-201 was obtained in the form of an FAA 8100-9, signed on 12/18/2009, by Chris L. Brown, FAA AR-635846, approving Boeing Drawing 246W0900, revision E, dated 12/16/09, "Interchangeable Parts Electronic Flight Bag (EFB)", which indicates the 261690-201 DU is interchangeable with the 261690-101 DU, as the only difference is the bezel color. Boeing Service Letter 737-SL-46-006-A, dated 11/12/2009, allows the installation of Electronic Flight Bag (EFB) Generation 2 hardware with Block Point 4.0 (BP 4) software -- both the Electronics Unit (EU) and Display Unit (DU) -- to be installed on Boeing 737 aircraft.	**PMA, Supplement 10.** TC approval for this DU is in Boeing Drawing 246W0900, revision E, dated 12/16/09. TC A16WE & EASA A.120 (B737). Also Boeing Service Letter 737-SL-46-006-A allows installation of BP 4 EFB articles, i.e. the EU & DU, on B737s.	**PMA 10: 08/30/2012** Boeing Drawing 246W0900 revision E, dated 12/16/09. Boeing Service Letter 737-SL-46-006-A, dated 11/12/2009; Also CMM document 46-11-03, revision 5, dated July 15, 2010	Licensing agreement between Boeing Commercial Airplane Group and Astronautics Corp. of America dated 08/23/10, Boeing Company, letter No 6-5900-10-DSH-15683R1, dated August 23, 2010; Boeing TC No. A16WE. A16WE & EASA A.120 (B737). Component Maintenance Manual (CMM) for the Gen 2 BP 4.0 DU covers maintenance activities for the 261690-1, 261690-101, and 261690-201 Display Units. The CMM is document 46-11-03, "Display Unit Component Maintenance Manual with Illustrated Parts List Part Number 261690-1, -101, -201", revision 5, dated July 15, 2010. The Illustrated Parts Listing found in the CMM for these 261690-1, -101, & -201", units shows that the same hardware is used for each. The only difference between the three DU

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
					PNs, covered by CMM document 46-11-03, is the bezel colors.
Display Unit	261690-101	Display Unit -- part of the Pilot Information Display system, a.k.a. PID, or Electronic Flight Bag (EFB). Works with the 261700-1 Electronics Unit -- Covered by PMA. Initial model effectivity: Boeing 777-200, 777-200LR, etc.	**PMA, Supplement 9.**	**PMA Supplement 9,** 05/20/09; amended 11/19/2009; amended 05/04/2012	Boeing TC number T00001SE & EASA A.003 (B777). Built as a PMA under Production PMA PQ2070CE-D. Initially designed for the 787. Initial PMA assist letter 6-5900-09-DSH-15199; amended to add 777-300 with Boeing PMA assist letter 6-5900-09-DSH-15199R1
Display Unit (DU)	261690-1	The 261690-1 Display Unit (DU) is used with the 261700-1 Electronics Unit (EU) and both are associated with the Boeing B-787 Dreamliner Aircraft. Note: the 261690-101 and 261690-201 DUs and the 261700-1 EU were previously added to the Capabilities List based on FAA approved or accepted data associated with Astronautics' Parts Manufacturer Approvals, PMA Supplement numbers 9 and 10, dated November 19, 2009 and August 30, 2010 respectively.	**PMA, Supplement 11;** B767-300. Also, Boeing B-787 FAA TC T00021SE, and EASA TC A.115 (IM) Boeing 787	**PMA 11-03/23/2012** T00021SE, for B-787-8, September 22, 2011. EASA TC A.115 (IM) Boeing 787, August 26, 2011.	PMA by identicality via licensing agreement- 14 CFR § 21.303. Aviation Communication & Surveillance Systems (ACSS) No PMA-ASCC-0025_A, dated March 22, 2012; ACSS STC No. ST02126LA (B 767-300) Also FAA TC T00021SE and EASA TC A.115. CMM 46-11-03, revision 6, dated 11/12/2010, for the 261690-1, the -101, and the -201 DUs. Connected to the Boeing TCs as shown in such documents as the ANA Illustrated Parts Data for the Boeing 787-8 aircraft.
Engine Data Concentrator Unit (EDCU)	261850-( )	Engine Data Concentrator Unit (EDCU), hardware P/N 261850-( ) and software P/N S00925-( ). Part of a SYSTEM TSOA APPROVAL consisting of an Engine Indication Display (EID), 5x4 EFIS part number 261710-( ), and the 261850-( ) EDCU for Pilatus PC-9 Aircraft	**TSO-C113,** with C43c, C44c, C47a, and C49b	2/27/2008	
Engine Data Concentrator Unit (EDCU)	261450-( )	Engine Data Concentrator Unit (EDCU). The 261450-( ) was approved in TSOA letter dated 10/21/2009. This is part of a TSOA approved system that includes the 261400-1 EFI (a.k.a. UH-1).	**TSO-C113,** with C-2d, C3e, C4c, C5f, C6e, C-8e, C-10b, C34e, C36e, C40c, C41d, C-43c, C46a, C47a, C49b, C66c, C87, and C-129a.	10/21/2009	

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Electronic Flight Instrument (EFI)	261400-( ) Except for 261400-3	Electronic Flight Instrument (EFI). The 261400-( ) was approved in TSOA letter dated 10/21/2009. This is part of a TSOA approved system that includes the 261450-1 EDCU (a.k.a. "UH-1").	**TSO-C113,** with C-2d, C3e, C4c, C5f, C6e, C-8e, C-10b, C34e, C36e, C40c, C41d, C-43c, C46a, C47a, C49b, C66c, C87, and C-129a.	10/21/2009	Astronautics worked on a 261400-3 version as requested by a customer. However the customer insisted on using all metric units, which would have gone against FAA guidance.
Engine Indication Display (EID)	261710-( )	Engine Indication Display (EID) with hardware P/N 261710-( ) and software P/N 261724-( ). Part of a SYSTEM TSOA APPROVAL consisting of an Engine Indication Display (EID), 5x4 EFIS, part number 261710-( ), and the 261850-( ) EDCU for Pilatus PC-9 Aircraft	**TSO-C113,** with C43c, C44c, C47a, and C49b	2/27/2008	261710-3 is Pilatus part number 975.96.32.430
Electronic Flight Instrument a.k.a. Pilatus 6x8 EFI	260500-( )	Electronic Flight Instrument (EFI) This initially started life as a 198000-21, but was changed to the 260500-( ) after discussions with the FAA. The 260500-1 was approved in TSOA letter dated 06/07/04. The 260500-3, -5, -7 etc. are by minor change.	**TSO-C113;** C2d, C3d, C4c, C5e, C6d, C8d, C10b, C34e, C36e, C40c, C41d, C66c, C87, C95, C101, C129a and C147	TSOA letter 06/07/04	Pilatus PC-7 (USA TC) and PC-9, among others
Electronics Unit	198200-1, 198200-3, 198200-5, 198200-7, 198200-9	Electronics Unit -- initially 198200-1, then -3, -5, etc. Part of the Pilot Information Display system a.k.a. Boeing PID or EFB for Electronic Flight Bag. Works with the 197800-( ) Display Unit -- Covered by PMA. Initial model effectivity: Boeing 777-200, then 777-300ER, etc. NOTE: The different dash numbers have different installation eligibility on different model aircraft.	**PMA, Supplements 1, 2, 3, & 6.**	Superseded Supplement 1, 05/17/2006; Sup. 2 11/29/2006, Sup 3 01/25/2007, and Sup 6 01/27/09.	Boeing FAA TC number T00001SE, amendment dated 10/22/2003 & EASA A.003 (B777) and Boeing TC number A16WE & EASA A.120 (B737). Built under Production PMA PQ2070CE
CONTROL PANEL, for Electronic Flight Instrument a.k.a. Royal Saudi / "Jet" EFI	198040-( )	The initial 198040-1 Control Panel is used with the associated 198000-1 Electronic Flight Instrument (EFI) on 747s. The 198040-3 is an updated Panel for use with the TC'd L-382 (a.k.a. L-100).	**TSO-C113;** C2d, C3d, C4c, C5e, C6d, C8d, C10b, C34e, C36e, C40c, C41d, C52b, C63c, C66c,	TSOA letter 06/17/04	Boeing 747SP, 747-100, and 747-200 aircraft; TC resulting from FAA Project ST3587NY-T

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
			C87, C92c, C119b, C129a		
DISPLAY, Electronic Flight Instrument a.k.a. Royal Saudi / "Jet" EFI	198000-( )	The initial 198000-1 Electronic Flight Instrument (EFI) is used with the associated 198040-1 Control Panel on 747s. The 198040-3 was updated for use with the TC'd L-100.	**TSO-C113;** C2d, C3d, C4c, C5e, C6d, C8d, C10b, C34e, C36e, C40c, C41d, C52b, C63c, C66c, C87, C92c, C119b, C129a	TSOA letter 06/17/04	Boeing 747SP, 747-100, and 747-200 aircraft; TC resulting from FAA Project ST3587NY-T
Display Unit	197800-51	Display Unit -- similar to 197800-( ) as noted above. This is an approved aircraft part as noted in the Boeing 737-700 Recommended Spare Parts List (RSPL) for 737-700 aircraft, registration number D2-TBJ, which includes the 197800-51 DU. The 737-700 TC is as noted in Type Certificate Data Sheet TCDS No. A16WE, Rev. No. 40, for The Boeing Company, 737-700 Series aircraft, and in TC T00001SE for 777s.	**PMA, Supplement 7**	Sup. 7, 05/23/2008; TSDS dated April 27, 2007	Boeing 737-700 Recommended Spare Parts List (RSPL) for 737-700 aircraft. Type Certificate Data Sheet TCDS No. A16WE & EASA A.120 for B737 aircraft, and in TC T00001SE and EASA A.003 for B777s.
Display Unit	197800-71	Display Unit -- similar to 197800-( ) DUs as noted above. This part is approved in Type Certificate A16WE for Boeing 737 aircraft.	**PMA, Supplement 8**	Sup. 8, 01/08/2009	This part is approved in FAA Type Certificate A16WE & EASA A.120 for Boeing 737 aircraft.
Display Unit	197800-1, 197800-3, 197800-5, 197800-7, 197800-31	Display Unit -- initially 197800-1, then -3, etc. Covered by PMA or TC or both. Initial model effectivity: Boeing 777-200, then 777-300ER, etc. Part of the Pilot Information Display system, a.k.a. Boeing PID, or Electronic Flight Bag (EFB). Works with the 198200-( ) EU.	**PMA, Supplements 1, 2, 3, & 5.**	Superseded "new" Supplement 1, 05/17/2006; Sup. 2 11/29/2006, Sup 3 01/25/2007, and Sup 5 09/17/07.	Boeing TCs FAA T00001SE & EASA A.003 (777), FAA TC A2NM (757), and FAA TC No. A16WE & EASA A.120 (737): all PMA units built under Production. PMA PQ2070CE-D.
CONTROL PANEL, PEDESTAL, for Electronic Flight Instrument (EFIS) for Lufthansa (Dubai Air Wing) 747	195570-( )	Pedestal Control Panel for the 195000-( ) Electronic Flight Instrument. The 195560-1 Glareshield Control Panel (GCP) and 195570-1 Pedestal Control Panel (PCP) together replaced the 195010-1 DCP used in the Honeywell SAA 195000-1 EFIS.	**TSO-C113;** also C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c,	07/05/2001, 06/24/2004, 07/18/2002	Lufthansa Technik STCs: Dubai Air Wing, LBA STC TA0467. Amiri Flight Abu Dhabi, LBA STC TA0534. The 195000-9 and 195000-11 EFIs were for Kallita 747s, via CMC STC.

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
			C119b, and C129a		The 195000-15 was for LM Aero aircraft (L-100). The 195000-17 was for SRF Boeing. The 195000-19 was for Dragonair (Hong Kong, China)
CONTROL PANEL, GLARESHIELD, for Electronic Flight Instrument (EFIS) for Lufthansa (Dubai Air Wing) 747	195560-( )	Glareshield Control Panel for the 195000-( ) Electronic Flight Instrument. The 195560-1 Glareshield Control Panel (GCP) and 195570-1 Pedestal Control Panel (PCP) together replaced the 195010-1 DCP used in the Honeywell SAA 195000-1 EFIS. Either the DCP or the Lufthansa (Dubai Air Wing) GCP and PCP combination can be used to control the 195000-1 EFI..	**TSO-C113;** also C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c, C119b, and C129a	07/05/2001, 06/24/2004, 07/18/2002	Lufthansa Technik STCs: Dubai Air Wing, LBA STC TA0467. Amiri Flight Abu Dhabi, LBA STC TA0534. The 195000-9 and 195000-11 EFIs were for Kallita 747s, via a CMC STC. The 195000-15 was for LM Aero aircraft (L-100). The 195000-17 was for SRF Boeing. The 195000-19 was for Dragonair (Hong Kong, China)
CONTROL PANEL, used with Electronic Flight Instrument (EFIS)	195010-( )	The initial 195010-1 Display Control Panel was used with the 195000-1 Electronic Flight Instrument for Honeywell/South African Airways 747s.	**TSO-C113;** also C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c, C119b, and C129a	4/25/2001, 10/19/2002, 07/16/2002, 07/18/2002, 01/30/2003, 01/08/2004, 06/24/2004, 4/13/04	Lufthansa Technik STCs: Dubai Air Wing, LBA STC TA0467. Amiri Flight Abu Dhabi, LBA STC TA0534. The 195000-9 and 195000-11 EFIs were for Kallita 747s, via CMC STC. The 195000-15 was for LM Aero aircraft (L-100). The 195000-17 was for SRF Boeing. The 195000-19 was for Dragonair (Hong Kong, China)
DISPLAY, Electronic Flight Instrument (EFIS)	195000-( ) *except for* 195000-3	Electronic Flight Instrument (EFIS) display. The initial 195000-1 Electronic Flight Instrument was used with the 195010-1 Display Control Panel for Honeywell/South African Airways 747s. Note: Currently a 195000-3 would require an alteration to a different dash number to be returned to service as a TSOA approved unit.	**TSO-C113;** also C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c, C119b, and C129a	4/25/2001 original, 07/16/2002, 07/18/2002, 06/24/2004, 01/08/04, 04/13/04	Lufthansa Technik STCs: Dubai Air Wing, LBA STC TA0467. Amiri Flight Abu Dhabi, LBA STC TA0534. The 195000-9 and 195000-11 EFIs were for Kallita 747s, via CMC STC. The 195000-15 was for LM Aero aircraft (L-100). The 195000-17 was for SRF Boeing. The 195000-19 was for Dragonair (Hong Kong, China)

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
DISPLAY, Electronic Flight Instrument (EFIS), Display for UPS, a.k.a. Cockpit Display of Traffic Information (CDTI) "Free Flight" unit	194440-( )	Electronic Flight Instrument (EFIS), Display, initially for UPS, a.k.a. Cockpit Display of Traffic Information (CDTI) "Free Flight" unit	**TSO-C113;** also C63c, C92c, C105, and C119b	9/13/2000 initial, 3/21/2001 (Minor Change), 9/12/2002 (Minor Change)	Initial unit was a 194440-1 Electronic Flight Instrument built for UPS (formerly "II Morrow"), which was the first TSOA approved Cockpit Display of Traffic Information (CDTI) "Free Flight" unit. FAA Administrator Jane Garvey flew on the UPS aircraft to see the units work during a "free flight" demonstration.
DISPLAY, Engine Display Unit (EDU)	193860-( )	Engine Display Unit (EDU) initially for Agusta A-119 Helicopters. The TSOA authorization was approved 02/05/02 for 193860-( ) hardware and 193893-( ) software.	**TSO-C113;** also C43c and C47	2/5/2002	These are used in the Agusta S.p.A. A119 (US Type Certificate H7EU, and EASA TC R.005); the same TCs as the A109. The 193860-5 and minor changes 193860-7 and -9 fall under Agusta part number 109-0900-66-1A01. The 193860-11, the -13, and the -111 are Agusta part numbers 109-0900-66-3A01, 109-0900-66-3A02, and 109-0900-66-2A01, respectively.
DISPLAY, Electronic Flight Instrument (EFI)	193850-( )	Electronic Flight Instrument, initially for Agusta A-109 helicopters.	**TSO-C113;** C3d, C4c, C6d, C34e, C35d, C36e, C40c, C41d, C52b, C63c, C66c, C87, C119b, & C129a	6/4/2001 TSOA; -3 and -101 by Minor Change letter	These are used in the Agusta S.p.A. A109 (US Type Certificate H7EU, and EASA TC R.005); the same TCs as the A119. The 193850-3 is Agusta part number 109-0900-71-1A01 and the 193850-103 is Agusta part number 109-0900-71-2A01.
CONTROL PANEL, for Electronic Flight Instrument System (EFIS).	193240-( )	EFIS for L3 (formerly Raytheon) Flat Panel Display (FPD), a Multifunction Display (MFD), and a Control Panel (CP). Part numbers in the initial system were 193220-1 FDP, 193230-1 MDU, and 193240-1 CP	**TSO-C113;** C4c, C6d, C34e, C35d, C36e, C40c, C41d, C52b, C63c, C66c, C87, C92c, C119b, C129a	2/3/2003	The entire system includes a Flat Panel Display (FPD), a Multifunction Display Unit (MDU), and a Control Panel.
DISPLAY, Multifunction, for Electronic Flight Instrument System (EFIS).	193230-( )	EFIS for L3 (formerly Raytheon) Flat Panel Display (FPD), a Multifunction Display (MFD), and a Control Panel (CP). Part numbers in the initial system were 193220-1 FDP, 193230-1 MDU, and 193240-1 CP	**TSO-C113;** C4c, C6d, C34e, C35d, C36e, C40c, C41d, C52b, C63c, C66c, C87, C92c,	2/3/2003	The entire system includes a Flat Panel Display (FPD), a Multifunction Display Unit (MDU), and a Control Panel.

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
			C119b, and C129a		
DISPLAY, Flat Panel for Electronic Flight Instrument System (EFIS).	193220-( )	EFIS for L3 (formerly Raytheon) Flat Panel Display (FPD), a Multifunction Display (MFD), and a Control Panel (CP). Part numbers in the initial system were 193220-1 FDP, 193230-1 MDU, and 193240-1 CP	**TSO-C113;** C4c, C6d, C34e, C35d, C36e, C40c, C41d, C52b, C63c, C66c, C87, C92c, C119b, and C129a	2/3/2003	The entire system includes a Flat Panel Display (FPD), a Multifunction Display Unit (MDU), and a Control Panel.
DISPLAY, Electronic Flight Instrument (EFIS) -- Boeing VC-25	192150-( )	Electronic Flight Instrument--typically used with Navigator and Pilot Control Panels. The EFI uses control panels: 192130-( ) NCP, and 192120-( ) PCP. The 192150-1 includes Multifunction Display functions ADI, HSI, ILS Glideslope, ILS Localizer, VOR, Flight Director, Color Weather Radar, and Traffic Collision Avoidance System II, but doesn't display TAWS. 192150-3 (same as -1 but it does display Ground Proximity Warning System/TAWS, TSO-C92c). The 192150-7 uses a new AMLCD (minor change letter 12/22/1999.) The -3 and -7 both display Ground Prox. The 192150-9 is the same as -1 but with new LCD and it does NOT display the Ground Proximity Warning System/Terrain Avoidance Warning System (TSO-C92c). See Minor Change letter 12412JGW.jw 12/20/2000. The 192150-11 is also operationally the same as the 192150-1 (Minor Change letter 15234JGW:jw, 4/30/02)	**TSO-C113,** C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c (Grd Prox), and C119b	06/17/1999 (192150-1) 11/17/1999 (192150-3) 12/22/1999 (192150-7) 12/20/2000 (192150-9) 4/30/2002 (192150-11)	Aircraft installation by Boeing in VC-25 (747) airliner – a.k.a. "Executive Transport" aircraft
Navigator Control Panel -- used with Electronic Flight Instrument (EFIS) -- Boeing VC-25	192130-( )	EFI 192150-( ) uses the Navigator Control Panel 192130-1, etc.	**TSO-C113,** C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c (Grd Prox), and C119b	06/17/1999 11/17/1999	Aircraft installation by Boeing in VC-25 (747) airliner – a.k.a. "Executive Transport" aircraft

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Pilot Control Panel - used with Electronic Flight Instrument (EFIS) -- Boeing VC-25	192120-( )	Pilot Control Panel. EFI 192150-( ) uses this control panel, PCP 192120-( ); initially 192120-1	**TSO-C113,** C4c, C6d, C34e, C36e, C40c, C52b, C63c, C92c (Grd Prox), and C119b	06/17/1999 11/17/1999	Aircraft installation by Boeing in VC-25 (747) airliner – a.k.a. "Executive Transport" aircraft
DISPLAY, Electronic Flight Instrument (EFI)	191640-( )	Electronic Flight Instrument Multifunction LCD Display -- HSI, ILS Glideslope, ILS Localizer, VOR, and Color Weather Radar The 191640-1 was approved 20 August 1999. (Also see Minor Change was letter 15710BB:bb, 8/23/02) The 191640-3 has new AMLCD "glass" and was approved by Major Change via FAA letter dated 6/9/00 (Also see Minor Change was letter 15690BB:bb, 8/23/02)	**TSO-C113,** C6d, C34e, C36e, C40c, C63c	08/20/1999 06/09/2000	STC'd by Bristow on a S-61 helicopter
DISPLAY, Electronic Flight Instrument (United Airlines)	188600-( )	Electronic Flight Instrument--ADI, HSI, Color Weather Radar, Traffic Collision Avoidance System, Maps (GPS)	**TSO-C113,** C4c, C6d, C63c, C119a	06/17/1996 02/07/1997	STC'd by United Air Lines on DC-10 airliners
Autorig Data Module (for use with Flap Control Units	187579-3 & 187579-4	Autorig Data Module (ADM) for FCUs for Gulfstream V aircraft. Unit is built for Hamilton-Sundstrand. Autorig Modules, p/n 187579-3, and -4, are attached to the 186950-( ) Flap Control Unit as part of the system. 187579-3 is HS p/n 5910731 (Gulfstream 1159SCC509-3), and 187579-4 is HS p/n 5910732 (Gulfstream 1159SCC509-4).	**NONE by ACA** Gulfstream FAA TC, A12EA and EASA TC, EASA.IM.A.070.	Hamilton-Sundstrand PMA, Supplement 186 dated Sept 29, 1997	Hamilton-Sundstrand has the PMA (not ACA), based on licensing agreement with Gulfstream under their FAA TC, A12EA and EASA TC, EASA.IM.A.070. Hamilton Sundstrand drawings 5910731 for ACA's 187579-3 and 5910732 for ACA's 187579-4.
Flap Control Unit (FCU) Hamilton Sundstrand's PMA supplement 404 that shows FAA approval traceability for the 186950-11 to the Hamilton Sundstrand 5915070 part number.	186950-11	FLAP CONTROL UNIT (FCU) for Gulfstream aircraft (GV and G550). Original -3 unit was built for Hamilton-Sundstrand (HS). The follow-on unit, the 186950-7 (see above) was then upgraded to a 186950-11, which is Hamilton Sundstrand p/n 5915070 and Gulfstream P/N 1159SCC651-7. Note: Autorig Modules, p/n 187579-( ), i.e. -3, and -4, are attached to the FCU in service, but are often not returned with the FCU for repair.	**NONE by ACA** Gulfstream FAA TC, A12EA and EASA TC, EASA.IM.A.070.	Hamilton-Sundstrand PMA, Supplement 404 dated Dec 14, 2007.	Hamilton-Sundstrand has the PMA (not ACA), based on licensing agreement with Gulfstream under their FAA TC, A12EA and EASA TC, EASA.IM.A.070. GV=G500 GV-SP=G550 Hamilton Sundstrand drawing 5915070.
Flap Control Unit (FCU) Gulfstream Aerospace Certification Report GAC-CR-	186950-9	The 186950-9 FCU was created from the originally approved 186950-3. The design is the same (see above) except for the updated software noted in Service Bulletin FAS01EC-27-1	**NONE by ACA** Gulfstream FAA TC, A12EA and	Gulfstream Aerospace Certification Report GAC-CR-3683,	In this case, Gulfstream Aerospace Corporation holds the PMA; not Hamilton Sundstrand, but Gulfstream uses Hamilton Sundstrand Flap Control Unit (FCU).drawing 5915069,

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
3683 shows FAA approval traceability for the 186950-9 to the Gulfstream 1159SCC506-5 part number.		The change caused the Astronautics 186950-3 part number to become 186950-9. The corresponding changes to Hamilton Sundstrand's part numbers were 5910712 to 5915069, and Gulfstream's went from 1159SCC506-3 to 1159SCC506-5.	EASA TC, EASA.IM.A.070.	revisions A through D, plus Service Bulletin FAS01EC-27-1 dated Nov 13, 2007.	which ties the 186950-9 to Gulfstream's 1159SCC506-5.
Flap Control Unit (FCU)	186950-7	FLAP CONTROL UNIT (FCU) for Gulfstream aircraft (GV and G550). Unit built for Hamilton-Sundstrand (HS). The follow-on unit, the 186950-7 is Hamilton Sundstrand p/n 5914041 and Gulfstream P/N 1159SCC651-5. NOTE: This capability list does NOT include the 186950-5 (HS p/n 5913545, Gulfstream p/n 1159SCC651-3). Note: Autorig Modules, p/n 187579-( ) , i.e. -3, and -4, are attached to the FCU in service, but are often not returned with the FCU for repair.	**NONE by ACA** Gulfstream FAA TC, A12EA and EASA TC, EASA.IM.A.070.	Hamilton-Sundstrand PMA, Supplement 377 dated July 24, 2006.	Hamilton-Sundstrand has the PMA (not ACA), based on licensing agreement with Gulfstream under their FAA TC, A12EA and EASA TC, EASA.IM.A.070. Hamilton Sundstrand drawing 5914041.
Flap Control Unit (FCU)	186950-3	FLAP CONTROL UNIT (FCU) for Gulfstream aircraft (models GV and GV-SP a.k.a. G550). Unit built for Hamilton-Sundstrand (HS). The initially approved FCU, 186950-3, is HS p/n 5910712, and Gulfstream P/N 1159SCC505-5. NOTE: This capability list does NOT presently include the 186950-5 (HS p/n 5913545). Note: Autorig Modules, p/n 187579-( ) , i.e. -3, and -4, are attached to the FCU in service, but are often not returned with the FCU for repair.	**NONE by ACA** Gulfstream FAA TC, A12EA and EASA TC, EASA.IM.A.070.	Hamilton-Sundstrand PMA, Supplement 186 dated Sept 29, 1997	Hamilton-Sundstrand has the PMA (not Astronautics), based on licensing agreement with Gulfstream under their FAA TC, A12EA and EASA TC, EASA.IM.A.070. Hamilton Sundstrand drawing 5910712
Vertical Stabilizer (a.k.a. Vertical Fin) Control Unit	186900-( )	MD900 VERTICAL STABILIZER CONTROL UNIT, initially 186900-1	**C9c**	6/14/1995	This TSOA'd unit is included in a MDHC Type Certificate
Yaw Damper Actuator	186830-( )	NOTAR Heavy Duty ACTUATOR - MD900 Helicopter, initially 186830-1.	**C9c**	2/13/1997	
Yaw Stability Augmentation System	168670-( )	MDHC NOTAR YAW DAMPER SYSTEM, a.k.a. NOTAR YAW Stability Augmentation System (SAS), initially 168670-1. Note, only the individual components of this system were TSO'd under TSO-C9c. For approved maintenance data, refer to the TSO related items.	**C9c**	9/6/1991	MDHC Type Cert. (OEM)
Yaw Damper Computer	168240-( )	NOTAR Yaw Damper COMPUTER /Control Box, initially 168240-1	**C9c**	9/6/1991	MDHC Type Cert. (OEM)
Yaw Damper Actuator	165490-( )	NOTAR ACTUATOR - TSOA'd. Initially 165490-3, then -5, -11, -13, -15, -17, etc. (Electronic Stop started with -5)	**C9c**	8/16/1991, 04/20/1992, 10/12/1994	Used in MD900 helicopters (Type Certificated)

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Panel	155450-( )	BASIC CONTROL PANEL (AUTOPILOT), initially 155450-1	**C9c**	03/11/1992 06/29/1992	
Autopilot System	148600-( )	MDHC AUTOPILOT for AGUSTA, initially 148600-1, then 148600-3. Essentially the same as 131500-21 above, with slight differences for the Agusta aircraft. The *components* of the Autopilot system are TSO'd.	**C9c**	Components are TSO'd; 07/11/1991, 08/23/1991, 10/15/1991, 05/29/1992	TSO'd componenets. Approved at the aircraft level by Agusta Helicopters
Actuator, Yaw Parallel	147650-( )	ACTUATOR, YAW PARALLEL (large movements) 147650-1 actuator was made to work with the 147580-1 (small movements)	**C9c**	10/07/1991 06/29/1992 11/15/1993 04/25/1996	STC'D SH1655GL
Control Panel Coupler	147640-( )	MODE SELECT FOR COUPLED AUTOPILOT initially 147640-1, then 147640-1 Mod A	**C9c**	10/07/1991 06/29/1992 07/16/1997	STC'D SH1655GL
Computer, Remote Autopilot	147630-( )	Remote Autopilot Computer initially 147630-1, then 147630-3, etc.	**C9c**	11/27/1991, 06/29/1992, 07/18/1994, 04/25/1996	STC'D SH1655GL
Accelerometer, Linear (Lateral)	147610-( )	ACCELEROMETER (the 147610-001 was also known as a 147610-1)	**C9c**	7/15/1994	STC'D SH1655GL
Actuator, Yaw Series	147580-( )	ACTUATOR, YAW SERIES (small movements) 147580-1 was made to work with the 147650-1 "parallel" actuator (large movements)	**C9c**	07/11/1991 06/29/1992 07/15/1994	STC'D SH1655GL
Airspeed/Altitude Hold Sensor	147450-( )	AIRSPEED/ALT HOLD SENSOR, 147450-1, -3, etc.	**C9c**	06/29/1992, 07/15/1994, 08/15/1991	STC'D SH1655GL
Actuator, Servo	135050-( )	ACTUATOR, ROLL (135050-1, & 135050-11 a.k.a. 1A), YAW (135050-5), PITCH (135050-7, 135050-9)	C9c	7/18/1994	STCs SH716GL, SH1655GL
Control Panel Coupler	134280-( )	Mode Select for Coupled Autopilot	C9c	10/25/1983	STC'D SH716GL
Sensors	133160-( )	ALTITUDE HOLD	C9c, C52a	12/1/1981	
Control Panel Coupler	132510-( )	MODE SELECT (Control Panel) FOR COUPLED AUTOPILOT	C9c	11/24/1981	Astronautics' STCs SH543GL & SH716GL

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Installation Kit	132448-( )	INSTALLATION KIT Note: the 132448-21 was TSOA approved. Previous versions were PMA'd, including 132448-1, -5, -9, -11, -13, and -15	C9c or PMA	10/31/1991 for TSO, 07/08/1987 for initial PMA	Astronautics' STCs 132448-21 STC'D SH1655GL; 132448-1 & -5 STC'D SH543GL; 132448-9, -11, -13, & -15 STC'D under SH716GL.
Actuator, Roll Servo	131880-( )	ACTUATOR 131880-1, -3, -5, -9, etc. e.g. ROLL (-1), PITCH (-3), YAW (-5 and -9). Covered by STC approval for the -1, -3, and -5	C9c	11/23/1981	Astronautics' STCs SH543GL & SH716GL
Computer	131810-( )	SEARS 2Q FLIGHT DIRECTOR		8/23/1980	Astronautics' STC SH435GL
Autopilot System	131500-21	MDHC AUTOPILOT (COUPLED); AUTOPILOT FOR MD500 HELICOPTER. The TSOA letter states the -21 as the first in a series that is granted TSOA	C9c	07/11/1991, 08/23/1991, 10/15/1991, 05/29/1992	Astronautics' STC SH1655GL 10/31/1991
Autopilot System	131500-15	MDHC AUTOPILOT (COUPLED/Lt Wt) -- STC'd system with TSO'd components	C9c	11/5/1987	Astronautics' STC SH716GL
Autopilot System	131500-13	Hughes Autopilot (Uncoupled/Single/Light Weight) The system is STC'd, not TSO'd, but the individual components have either TSO or PMA.	C9c	11/5/1987	Astronautics' STC SH716GL
Autopilot System	131500-11	MDHC AUTOPILOT (COUPLED/Dual/Light Wt) The system is STC'd, not TSO'd, but the individual components have either TSO or PMA.	C9c	11/5/1987	Astronautics' STC SH716GL
Autopilot System	131500-9	Hughes/MDHC AUTOPILOT (COUPLED) The system is STC'd, not TSO'd, but the individual components have either TSO or PMA.	C9c	11/15/1983	Astronautics' STC SH716GL
Autopilot System	131500-5	HUGHES AUTOPILOT (UNCOUPLED/Single) The system is STC'd, not TSO'd, but the individual components have either TSO or PMA.	C9c	11/23/1981	Astronautics' STC SH543GL
Autopilot System	131500-1	HUGHES AUTOPILOT (UNCOUPLED/Dual) The system is STC'd, not TSO'd, but the individual components have either TSO or PMA.	C9c	11/23/1981 05/29/1992	Astronautics' STC SH543GL
Autopilot System	131500-( )	AUTOPILOT SYSTEM (various "dashes" as noted above).	C9c	Various	Astronautics' STCs (various)

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Transducers	131270-( )	Altitude Transducer (ROSEMONT #1241U)	C52a	6/26/1980	
Computer, Remote Autopilot	131140-( )	AUTOPILOT COMPUTER, 131140-1, -3, -5, -7, -9, -11, etc.	C9c	11/27/1981, 02/09/1983, 04/06/1987	Astronautics' STCs SH543GL & SH716GL
Computer	131030-( )	FLIGHT DIRECTOR, 2Q	C52a	7/2/1980	
Flight Director Computer	129855-( )	KLM 3Q FLIGHT DIRECTOR	Components are TSO'd to C52a	4/22/1981	STC'D SH399GL
Panels	129180-( )	NAV MODE SELECT	C52a	4/1/1980	
Sensors	129170-( )	COLLECTIVE STICK POSITION SENSOR	C52a	04/01/1980	
Computer	128870-( )	FLIGHT DIRECTOR, 3Q Initially 128870, then 128870-3, 128870-5, etc.	C52a	09/17/1979, 04/19/1982, 04/24/1984	
Panels	128840-( )	FDC MODE SELECT, initially 128840, then 128840-3, etc.	C52a	4/27/1984	
Flight Director Computer/Controller	111301-( )	Flight Dir. System (FDS) COMPUTER	C52a	1/12/1971	
Flight Director System	111300-( )	FLIGHT DIRECTOR SYSTEM (FDS).	C4c, C6c, C52a	1/12/1971	
Indicator, Temperature	102576-( )	EHU-15/A, 2" DIAMETER, WHITE LIGHTED	C43	10/6/1965	
Gyro, Yaw Rate (mechanical)	17595- ( )	The 17595-1 is a mechanical rate gyro, the same as the 303891. The 17595-3 is also a mechanical gyro used in MDHC NOTAR helicopters,	C9c	11/25/1981, 06/29/1992, 07/15/1994	Astronautics' Autopilot STC's SH543GL, & SH716GL, SH1655GL. Also MDHS (MDHI) NOTAR Type Certificate No. H19NM, 08/15/1991, 07/15/1994, & 12/15/2000. Initially tested to Q303891

INSTRUMENT/ACCESSORY	Model/P/N	DESCRIPTION	TSO, PMA, STC, or TC	Date	Other Approvals & Comments
Gyro, Yaw Rate (Solid State,)	17595-( )	NOTAR RATE GYRO (Solid State Gyro) 17595-5, 17595-7, etc.	C9c	8/27/1993, 07/18/1994	Astronautics' Autopilot STC SH1655GL. Also MDHS MD 520N NOTAR Type Certificate No. H19NM
Gyro, Vertical (Attitude)	17569-( )	GYRO, VERTICAL (ATTITUDE) Initial unit was 17569-001	C4c	11/12/1981	Astronautics' STCs SH543GL & SH716GL
Gyro, Heading Indicator	17512-( )	HEADING INDICATOR GYRO	C5c,II	11/12/1981	Astronautics' STCs SH543GL & SH716GL
Altitude Sensor	17511-( )	ALTITUDE SENSOR	C9c,C52a	11/12/1981	Astronautics' STC SH543GL
Special Items					
Electronics Unit	654100-351	Electronics Unit (EU) -- part of the Electronic Flight Bag – Single Processer (EFB- SP). These are modification parts.	PMA Supplement 13 Electronic Cable Specialists STC ST03112CH issued May 22, 2012.	PMA 13: 06/04/2012	PMA by identically per 14 CFR, §21.303, licensing agreement between Carlisle Interconnect Technologies (Carlisle IT)/ Electronic Cable Specialists Inc. and Astronautics Corp. of America, dated June 01, 2012;
Display Unit	649100-151, 649100-251, 649100-551, and 649100-651	Display Unit (DU) -- part of the Electronic Flight Bag – Single Processer (EFB- SP). Each of these was approved for use as an alternative Display to be used with the 654100-351 EU (above). These are modification parts.	PMA Supplement 13 Electronic Cable Specialists STC ST03112CH issued May 22, 2012.	PMA 13: 06/04/2012	PMA by identically per 14 CFR, §21.303, licensing agreement between Carlisle Interconnect Technologies (Carlisle IT)/ Electronic Cable Specialists Inc. and Astronautics Corp. of America, dated June 01, 2012;