TITLE

ENGINE CONTROLS - TRANSMITTAL OF INNOVATIVE SOLUTIONS AND SUPPORT SERVICE BULLETIN SB2124 AND RECALL NOTICE RN2111

EFFECTIVITY

MODEL	SERIAL NUMBERS
Super King Air B200GT	BY-393 thru BY-395
Super King Air B300	FL-1234 thru FL-1243, FL-1245 thru FL-1252, FL-1267

This service letter is applicable to the airplanes installed with the Innovative Solutions and Support Inc Standby Display Unit with Autothrottle System in the King Air Proline-Fusion Models.

REASON

Innovative Solutions and Support Inc. has released Service Bulletin SB2124 and Recall Notice RN2111, which provides software updates and calibration procedures for the Standby Display with Autothrottle System.

DESCRIPTION

This service document transmits Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111. Refer to the Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111 for detailed information about changes.

COMPLIANCE

RECOMMENDED. This service letter should be accomplished at a scheduled maintenance period or inspection.

CONSUMABLE MATERIAL

No specialized consumable materials are required to complete this service document.

TOOLING

No specialized tooling is required to complete this service document.

REFERENCES

Innovative Solutions and Support Inc. Service Bulletin SB2124

Innovative Solutions and Support Inc. Recall Notice RN2111

PUBLICATIONS AFFECTED

None.

ACCOMPLISHMENT INSTRUCTIONS

1. Review RN2111. If an RSC serial number from the list is installed, remove and return to IS&S to update the unit calibration.
2. Review and complete the Innovation Solution and Support Inc Service Bulletin SB2124. Software is available at txtavsupport.com under the applicable model's Instructions for Continued Airworthiness (ICA) page.

Textron Aviation Customer Service, P.O. Box 7706, Wichita, KS 67277, U.S.A. 1-316-517-5800

3. Make an entry in the airplane logbook that states compliance and method of compliance with this service letter.

   NOTE: Textron Aviation recommends that compliance with all service documents is reported to a maintenance tracking system provider.
   - Complete a record of compliance. (Maintenance Transaction Report, Log Book Entry, or other record of compliance.)
   - Put a copy of the completed record of compliance in the airplane logbook.
   - Send a copy of the completed record of compliance to the maintenance tracking system provider used.

MATERIAL INFORMATION

Refer to the Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111.

TITLE

ENGINE CONTROLS - TRANSMITTAL OF INNOVATIVE SOLUTIONS AND SUPPORT SERVICE BULLETIN SB2124 AND RECALL NOTICE RN2111

TO:

Beechcraft Model Super King Air B200GT and B300 Aircraft Owner

REASON

Innovative Solutions and Support Inc. has released Service Bulletin SB2124 and Recall Notice RN2111, which provides software updates and calibration procedures for the Standby Display with Autothrottle System.

This service letter is applicable to the airplanes installed with the Innovative Solutions and Support Inc Standby Display Unit with Autothrottle System in the King Air Proline-Fusion Models.

COMPLIANCE

RECOMMENDED. This service letter should be accomplished at a scheduled maintenance period or inspection.

LABOR HOURS

Refer to the Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111.

MATERIAL AVAILABILITY

Refer to the Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111.

WARRANTY

Refer to the Innovative Solutions and Support Inc. Service Bulletin SB2124 and Recall Notice RN2111.

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Innovative Solutions & Support, Inc **CAGE CODE: 0EUW0**

720 Pennsylvania Drive
Exton, PA 19341 USA
Telephone: 610-646-9800 Fax: 610-646-0146

RECALL NOTICE

I. KING AIR REMOTE STANDBY CONTROLLER (RSC) ATTITUDE SENSOR CHARACTERIZATION UPDATE FOR IS&S AUTOTHROTTLE SYSTEM ON KING AIR PROLINE FUSION EQUIPPED COCKPITS

A. This attitude sensor characterization of the RSC addresses the slight pitch, roll, and/or heading offset from primary values reported during climb and descent witnessed during test acceptance flights. The characterization offsets sensor drift that can occur during periods of changing pressure altitude (climb / descent).

1. IS&S is suggesting a serial number specific calibration curve be added to each RSC after it is run through a series of tests at different pressure altitudes in the IS&S chamber. The curve (if needed) is loaded in non-volatile memory after testing and before ATP.

II. PLANNING INFORMATION

WARNING: FAILURE TO CORRECTLY IMPLEMENT ANY INSTRUCTION GIVEN HERE, AS AMENDED FROM TIME TO TIME BY INNOVATIVE SOLUTIONS & SUPPORT, MAY ENDANGER HEALTH OR SAFETY.

A. Effectivity

1. P/N 9B-84181-7 Remote Sensor Controller

2. This change is incorporated for the King Air Aircraft RSC per IS&S Engineering Change Order (ECO) 14889, which took effect on 01/25/21 and IS&S Engineering Change Order 14998, which took effect on 04/22/21.

This is a recommended modification, which affects the LRU Part Number 9B-84181-7,

(a) 9B-84181-7 require a calibration / characterization curve addition only. A label is added to the unit to indicate completion of the characterization with ECO 14998. No hardware is changed.

B. Reason

1. This is an update required to address the following identified issue(s):

- Pitch, Roll, or Heading difference compared to primary instruments on standby display unit (SDU) as driven by sensors in the RSC.

2. This update can be tracked by this Recall Notice (RN2111) and the internal IS&S Engineering Change Order 14889 and 14998.

C. Description

1. The information below identifies the King Air RSC hardware update for the LRUs that are changed with incorporation of this Recall Notice.

   CHANGE

   - A calibration procedure and new label are required to complete this modification. No end user is authorized to upgrade units as described in Section III.

2. The following are the RSCs are affected:

Part Number	Description	ECO	Platform	Customer	S/Ns
9B-84181-7	RSC	ECO 14889 ECO 14998	King Air	Textron	25024, 25148, 25154, 25730, 25022, 25032, 25298, 25150, 25146, 25026, 25030, 25034, 25638, 24800, 25296, 25642, 25294, 25640, 24804, 25644, 25036, 25028

D. Timing

1. This Recall Notice should be accomplished within 12 months of receipt during a scheduled maintenance visit. Contact Textron to determine availability of rotable pool of RSCs to shorten downtime to accomplish update.

E. Approval

1. This Recall Notice contains a calibration / characterization update that falls under the FAA category of TSO Minor Change. This change was approved in accordance with the IS&S approved FAA Approved Quality Manual with respect to TSO Minor Changes.

F. Manpower

1. Removal of the RSC from the aircraft will take 1.0 hour.

G. Material Cost and Availability

1. This modification is available through IS&S, at a cost of $0.00.

2. Balance of warranty is not affected.

H. Tooling

1. Please follow the details outlined in the IS&S Operations and Installation Manual, 1D-88129 for removal and replacement of the RSC.

I. Weight and Balance Data

1. Not applicable

J. Electrical Load Data

1. Not affected

K. References

1. IS&S Operations and Installation Manual, 1D-88129

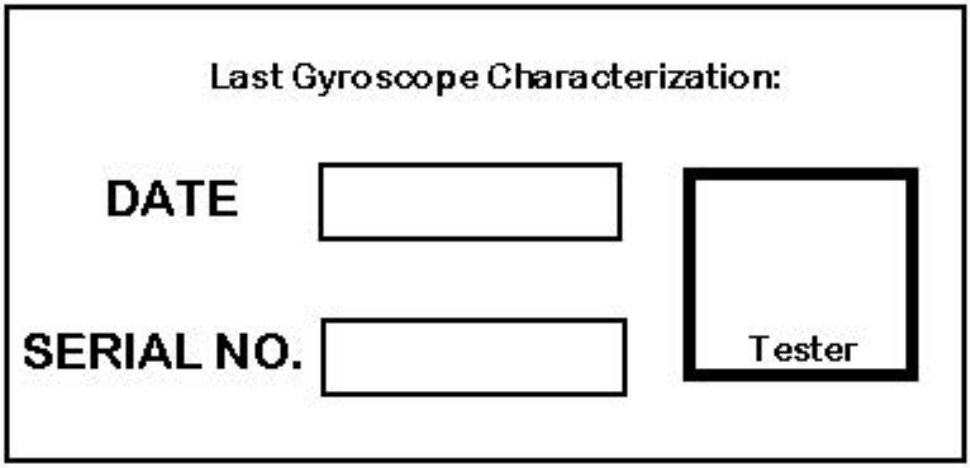
L. Other Publications Affected

1. Not applicable at this time.

III. ACCOMPLISHMENT INSTRUCTIONS

A. This RSC update can only be performed at Innovative Solutions & Support. When the modification is accomplished at IS&S, the RSCs will be marked accordingly:

Upgraded RSCs carry the following calibration label:



IV. MATERIAL INFORMATION

A. This RSC update must be accomplished at Innovative Solutions & Support. The RSCs can be returned to:

Innovative Solutions & Support
Customer Services
720 Pennsylvania Drive
Exton, PA 19341 USA
Tel.: 610-646-9800 Fax: 610-646-0149

ATTN: Steve Golden
Customer Service Manager
Tel: 610-646-9800
E-mail: sgolden@innovative-ss.com

Innovative Solutions & Support, Inc **CAGE CODE: 0EUW0**
720 Pennsylvania Drive
Exton, PA 19341 USA
Telephone: 610-646-9800 Fax: 610-646-0146

SERVICE BULLETIN

I. IS&S STANDBY DISPLAY WITH AUTOTHROTTLE UPDATE FOR PRODUCT IMPROVEMENT.

A. IS&S is releasing software to improve performance of the IS&S Standby Display with Autothrottle System installed in King Air B200 and B300 aircraft equipped with Proline-Fusion avionics

II. PLANNING INFORMATION

WARNING: FAILURE TO CORRECTLY IMPLEMENT ANY INSTRUCTION GIVEN HERE, AS AMENDED FROM TIME TO TIME BY INNOVATIVE SOLUTIONS & SUPPORT, MAY ENDANGER HEALTH OR SAFETY.

A. EFFECTIVITY

1. This software update is applicable to the following components:
   a. 9K-88129-25 Standby Display with Autothrottle System, B300 series
   b. 9K-88129-23 Standby Display with Autothrottle System, B200 series
   c. P/N 9D-84180-7 Standby Display Unit (SDU)
2. This change is incorporated into production units manufactured after Engineering Change Order (ECO) 15072 took effect on 08/05/2021.
3. The Service Bulletin is not mandatory but a highly recommended modification.

B. REASON

1. This is a software update addresses the following functions:
   a. Reduced force required to move failed engine throttle lever after engine failure
   b. Improved actuator communication initialization and fault detection
   c. Improved ATP test of serial RS-485 communication

2. This software update can be tracked by this Service Bulletin (SB2124) and the internal IS&S Engineering Change Order (ECO) 15072.

C. DESCRIPTION

1. The table below identifies the updated software versions for the LRUs that are addressed by this Service Bulletin.

Software Description	CSCI Part Number
SDU OFP	7H-13905-11
SDU Service	7H-13904-11

Table 1 Updated Software Part Numbers

The following table identifies the prerequisite software required prior to installing the updated software.

LRU	Software Version	Software Description
SDU	7H-13905-09	SDU OFP SW
	7H-13904-09	SDU Service SW
	7H-09848-07	SDU Bootstrap SW
RSC	7H-13908-05	RSC OFP SW
	7H-13907-05	RSC Service SW
	7H-13226-03	RSC Bootstrap SW

Table 2 Prerequisite Software

D. APPROVAL

1. This Service Bulletin provides software updates that fall under the FAA category of TSO Minor Change and STC Minor Change. IS&S will provide acknowledgment letters of the TSO and STC Minor Changes contained in this software update once received from the FAA.

E. MANPOWER

1. Modification will require 1.0 hour with the unit on aircraft. See Section G. for equipment required.

F. MATERIAL COST and AVAILABILITY

1. Parts are available through IS&S, at a cost of $0.00
2. Balance of warranty is not affected.

G. TOOLING

1. A Windows PC equipped with an RS-485 interface and the IS&S Service Tool, Software 7P-13938-07 or higher, is required to perform the data loading process.
2. Data Loader adapter: IS&S part number 8E-14204-1 or self-procure using the drawing provided. The IS&S adapter 8E-14024-1 is intended for use with a StarTech ICUSB422 USB to RS-485 converter. Other 2-wire RS-485 interfaces may be used, but adapters must be self-procured. See Wiring Diagram 8E-13910 Revision 8 or newer for the pin assignment of the maintenance connector used for data loading.
2. Follow the details outlined in this Service Bulletin, as well as those outlined in the IS&S Operations and Installation Manual, 1D-88129, revision 11 or higher.

H. WEIGHT AND BALANCE DATA

1. Not applicable

I. ELECTRICAL LOAD DATA

1. Not applicable

J. REFERENCES

1. IS&S Operation and Installation Manual, 1D-88129

K. OTHER PUBLICATIONS AFFECTED

1. Pilot’s Guide, IS&S part number 1D-13793

III. ACCOMPLISHMENT INSTRUCTIONS

A. Data load IS&S Standby Display with Autothrottle System in accordance with IS&S Operation and Installation manual 1D-88129 Appendix B or by following the procedure below.

Data load the Standby Display with Autothrottle System software by following the procedure below:

1. Attach ground power for use in the data loading procedure to conserve battery power.
2. Connect the test PC to the maintenance port via RS-485. Open the Service Tool 7P-13938 and select the connected COM port in the “Select PC Com Port” field
3. Turn on the ESIS power switch to start the Standby Display and within 30 seconds, press MENU and use the knob to select the “SERV MODE…” option. Press the knob to confirm service mode entry
4. When prompted on the SDU, cycle power by turning the ESIS power switch; OFF and ON.
5. Within 30 seconds of startup, use the (PC) Service Tool to send a “Service Request” to the RSC. The RSC will automatically enter service mode. (Note, the “Check RSC Comm” function can be used to verify the RSC is in service mode)
6. On the SDU, use the knob to highlight the “Data loading” option and press it to prepare the SDU to receive data.
7. On the PC running the Service Tool, left click the “Select Software” button and select the .uImage to load from among choices listed in file browser. If multiple images are going to be loaded, then they may all be selected at this time.
8. On the PC, press the “Data load Software” button once the desired software has been selected.
9. Select the desired software to load and press “Transmit”. A progress bar will fill as the software is being loaded.
10. Continue until each required software image has been selected and transmitted and “Complete” is indicated.
11. Switching the ESIS power switch to OFF to turn off the Standby Display.
12. Verify the loaded software versions by following the procedures in Section IV.

IV. FUNCTIONAL TEST INSTRUCTIONS

1. Turn on the ESIS power switch to start the Standby Display.
2. On the SDU, press the MENU button and use the knob to select the “PART NUMBERS” screen.
3. Scroll through the part numbers by rotating the knob and confirm that the software present on the system matches the software referenced in Section II. Record the displayed versions below.

Software Description	Displayed Version
SDU OFP	
SDU Service	
RSC OFP	
RSC Service	
Configuration	

Table 1 Software Part Numbers

4. Cycle power to the Standby Display by turning the ESIS power switch off and on. Once the SDU has started, press MENU and use the knob to select “SERV MODE…” and confirm service mode entry.
5. Cycle power to the ESIS to restart the SDU in service mode.
6. Perform the Autothrottle Friction test and verify satisfactory performance of the power control lever movement forward and backward throughout the test. Note the values displayed at the conclusion of the test and verify that the Slip values are less than 10000.

   ☐ Pass ☐ Fail

   Left Fric Value _____ Left Slip Value _____

   Right Fric Value _____ Right Slip Value _____

7. Perform the Override Friction test and verify satisfactory performance of the Autothrottle and the force required to override within the test.

   ☐ Pass ☐ Fail

8. Ensure that all avionics are turned on. Open the Status Page of the SDU while in service mode. Verify that all parameters are listed: Pitch, Roll, Heading, Airspeed, Altitude, N1 (L and R), Oil (L and R), FREQ, Localizer, Glideslope, Bearing, T.T.G, Ground Speed, DME Freq., DME Distance, AP Mode, SEL Speed, SAT, IAS, Flap, Torque (L and R), ITT (L and R).

   ☐ Pass ☐ Fail

9. Cycle ESIS power; OFF then ON to re-enter normal Standby Display operation. After alignment is complete, verify that the SDU displays attitude and there are no red or amber error annunciations.

   ☐ Pass ☐ Fail

10. Verify the automatic friction test occurs on startup and that no errors are annunciated when the test is concluded.

    ☐ Pass ☐ Fail

11. Cross compare with the primary displays and verify that the SDU displayed attitude matches the pitch and roll displayed on the PFD within 2 degrees. Verify that heading is displayed within 5 degrees. Note difference below.

    ☐ Pass ☐ Fail

    Pitch Difference: _____

    Roll Difference: _____

    Heading Difference: _____

    Note: If the pitch/roll indication is incorrect, perform Pitch Offset Calibration as defined in 1D-88129 Operation and Installation Manual, Section 4.8.6.1. If Heading is incorrect, perform the Magnetometer Calibration as defined in 1D-88129 Operation and Installation Manual, Section 4.8.6.1.

12. Rotate the Pilot Instrument Panel lighting rheostat clockwise then counterclockwise and verify the button backlighting on the SDU intensity increases in the clockwise direction and decreases in the counterclockwise direction

    ☐ Pass ☐ Fail

13. Rotate the Standby Display rheostat clockwise then counterclockwise and verify the screen brightness of the SDU intensity increases in the clockwise direction and decreases in the counterclockwise direction.

    ☐ Pass ☐ Fail

A. .ENGINE RUNNING TEST instructions

The following procedures require that the aircraft engines are active and the aircraft can be moved.

14. Operate the SDU in service mode. Select the “Status Page” option to display engine parameters.
15. Adjusting one engine at a time, bring the engine torque up to at least 40% power. Note the torque below.

    Engine 1: _____ Engine 2: _____
16. Verify the Torque and ITT values on the SDU match the values displayed on the primary displays or engine instrument display within the listed tolerances: (Torque +/- 1.5% (50 ftlbs for B200 installations), ITT +/- 10 °C). Note the values in the table below. Note: Allow the values to stabilize after an acceleration of the engines occur before marking down readings.

    ☐ Pass ☐ Fail

Signal	MFD	SDU
Torque 1 (L)		
Torque 2 (R)		
ITT 1 (L)		
ITT 2 (R)		

V. MATERIAL INFORMATION

A. Order Materials or Return LRUs to:

Innovative Solutions & Support
Customer Services
720 Pennsylvania Drive
Exton, PA 19341 USA
Tel.: 610-646-9800 Fax: 610-646-0149

ATTN: IS&S Product Support
Customer Service
Tel: 610-646-9800
E-mail: issproductsup@innovative-ss.com