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SERVICE BULLETIN

NAVIGATION - KSG 7200 AIR DATA ATTITUDE HEADING REFERENCE SYSTEM (ADAHRS) - Conversion of KSG 7200 ADAHRS from PN 065-00188-5101 or PN 065-00188-5102 to PN 065-00188-5103 (With Software Version [SW.v] 03/01)

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24 Sep 2009
Revision 0, 24 Sep 2009

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Transmittal Information

ATA Number KSG 7200-34-09 (Publication Number D200906000077)

Summary

This is the INITIAL release.

Revision History

This service bulletin has had no revision(s) as shown in Table 1.

Table 1. Revision History

Revision Number	Revision Date
Initial Release	24 Sep 2009

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1. Planning Information

A. Effectivity

- (1) This service bulletin is applicable to the KSG 7200 ADAHRS, PN 065-00188-5101 or -5102.

B. Concurrent Requirements

- (1) No other modification must be done before the conversion given in this service bulletin.

C. Reason

- (1) Problem:
 - (a) The possibility exists that one or both primary flight displays (PFD)s can indicate a roll attitude error of up to 10 degrees if an accelerated turn onto an active runway is performed and immediately followed by a takeoff. In addition, annunciated heading splits have been reported.
 - (b) During on-ground operation at geographical latitudes where the horizontal magnetic field strength is less than 80 milliGauss (mGauss) and when the system is switching back from global positioning system (GPS) track reference to magnetometer heading reference above a field strength of 95 mGauss, only slow slewing of the heading is performed. Depending upon the amount of heading difference between the two references, this could take several minutes until the correct heading is displayed.
- (2) Solution:
 - (a) Slaving algorithms, both on the ground and in the air, have been updated in SW.v 03/01 to prevent roll offset indications on both PFDs after takeoff and to prevent annunciated heading splits.
 - (b) In SW.v 03/01, the automatic mGauss switch settings (from magnetometer based heading reference to GPS track reference and vice versa) have been changed from a fixed value of 80/95 mGauss (≤ 80 mGauss magnetic field strength to switch from magnetometer based heading reference to GPS track reference and ≥ 95 mGauss to switch back) to a value specified in the certification file. In addition, the slow slewing of the heading on the ground has been changed to fast slewing so that the correct GPS track (TRK) or magnetometer heading (HDG) is displayed without delay.

D. Description

- (1) This conversion consists of an on-aircraft load of new application, maintenance and certification software to both channels of the ADAHRS using the KSG 7200 field maintenance program via an RS-232 communications port.

NOTE: This is a software change only. The ADAHRS will not be disassembled and the inspection seals will not be broken.

E. Compliance

- (1) It is recommended that this conversion be done at the first possible date.

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F. Approval

- (1) Certification approvals associated with incorporation of this service bulletin are TSO-C3d, TSO-C4c, TSO-C6d, and TSO-C106.

G. Manpower

- (1) This conversion can be completed in the approximate time that follows:
 - 6.0 hour(s) for the labor to do the conversion and test of the ADAHRS.
- (2) If the ADAHRS is not under warranty, more hours can be applicable. The hours are for the labor necessary to prepare, package, and inspect the ADAHRS.

H. Weight and Balance

- (1) Not applicable.

I. Electrical Load Data

- (1) Not changed.

J. Software Accomplishment Summary

- (1) A Software Accomplishment Summary has been completed to agree with the necessary conditions of RTCA document DO-178B, Software Considerations in Airborne Systems and Equipment Certification.

K. References

- (1) To find, see, and download Honeywell Technical Publications, go to <http://portal.honeywell.com/wps/portal/aero>.
- (2) The document(s) that follow(s) is/are necessary to complete this conversion. Unless specified differently, you can use subsequent revisions.
 - Installation Manual, Publication Number 006-10662-0007, KSG 7200 KMG 7010 Installation Manual, Revision 8
 - For Pilatus PC-12/47E aircraft: Pilatus PC-12/47E Aircraft Maintenance Manual
 - For Viking DHC-6, Series 400, Twin Otter aircraft: Viking DHC-6 Series 400 Twin Otter Aircraft Maintenance Manual.

L. Other Publications Affected

- (1) Not applicable.

M. Interchangeability or Intermixability of Parts

- (1) The operator must speak to the OEM about the interchangeability and intermixability of the ADAHRS part numbers identified in this service bulletin.

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2. Material Information

A. **Material - Price and Availability**

- (1) Speak to Honeywell personnel at the location identified below for the necessary documentation, applicable material and labor prices, available parts, and supply times.

Honeywell
 Global Customer Care Center
 Telephone: (800) 601-3099 (Toll Free U.S.A/Canada)
 Telephone: (602) 365-3099 (International Direct)
 Telephone: 00-800-601-30999 (EMEA Toll Free)
 Telephone: 420-234-625-500 (EMEA Direct)

- (2) This conversion can be done at a Honeywell service center or Honeywell-authorized repair location. There will be no cost to approved customers.
- (3) Honeywell can supply the parts necessary to do this conversion. There is no cost to approved customers. If you make an order for parts, send a no-charge purchase order that refers to this Service Bulletin, ATA Number KSG 7200-34-09 (Publication Number D200906000077) - free of charge (FOC). The purchase order must include only the applicable parts specified in Table 2 of this service bulletin.

B. **Industry Support Information**

- (1) The maximum labor hours that will be reimbursed by Honeywell to modify the ADAHRS are given below. Reimbursement will only be given if the unit is under the original new product warranty. Reimbursement will not be more than Honeywell's applicable reimbursement labor rate or as specified in the agreement or contract.

- 6.0 hour(s) for the labor to do the conversion and test of the ADAHRS.

- (2) To get reimbursement after the conversion of each ADAHRS is completed, send a labor claim to Honeywell.

The labor claim must be sent before 60 days after the approved work was completed.

- (3) Claims should be submitted to:

- <https://portal.honeywell.com/wps/portal/aero/serviceprograms/warranty>.

C. **Material Necessary for Each Component**

- (1) The parts identified in Table 2 are necessary to do this service bulletin.

Table 2. Operator-Purchased Material

New PN	Keyword/ Nomenclature	Old PN	Qty	List Price	Instructions/ Disposition Codes
057-05287-0301	Software modification tag (SW.v 03/01)	Not applicable (N/A)	1	1	2
057-06060-1002	Duplicate serial number tag	N/A	1	1	2 3
057-06060-1003	Serial number tag	N/A	1	1	2 3

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Table 2. Operator-Purchased Material (Cont)

New PN	Keyword/ Nomenclature	Old PN	Qty	List Price	Instructions/ Disposition Codes
222-30306-0000	KSG 7200 APEX software CD-ROM (SW.v 03/01)	N/A	1	1	2 4
222-30197-0006	KSG 7200 Pilatus PC-12/47E certification file compact disk read-only memory (CD-ROM) (60/75 mGauss settings)	N/A	1	1	2 4 6
222-30278-0004	KSG 7200 Viking DHC-6, Series 400, Twin Otter certification file CD-ROM (Certification File 1a)	N/A	1	1	2 4 5 7
222-30278-0005	KSG 7200 Viking DHC-6, Series 400, Twin Otter certification file CD-ROM (Certification File 2a)	N/A	1	1	2 4 5 7
222-30278-0006	KSG 7200 Viking DHC-6, Series 400, Twin Otter certification file CD-ROM (Certification File 3a)	N/A	1	1	2 4 5 7

NOTES:

1. There is no charge for this part.
2. Refer to the Honeywell Global Customer Care Center (Paragraph 2.A.) when you need data about available parts, supply times, or minimum order quantities.
3. It is imperative that you include the following note on your purchase order to Honeywell in order to receive the correct serial tags: Honeywell Customer Service Representative - please add this mandatory message to AS400 pick ticket notes: Requires unit serial tags for KSG 7200, Serial Number XXXX. (XXXX denotes serial number of the KSG 7200 being upgraded.)
4. The quantity of this part is one for each location that does this conversion.
5. Refer to the Viking DHC-6 Series 400 Twin Otter Aircraft Maintenance Manual for which one of the three certification files to use for a given aircraft configuration.
6. This part is necessary for use with the Pilatus PC-12/47E aircraft.
7. This part is necessary for use with the Viking DHC-6, Series 400, Twin Otter aircraft.

(2) No operator-supplied material is necessary to do this service bulletin.

D. Material Necessary for Each Spare

(1) Same as Paragraph 2.C.

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E. Reidentified Parts

- (1) The part number on the parts identified in Table 3 are changed as a result of this conversion. Refer to the instructions in Paragraph 3.

Table 3. Reidentified Part(s)

Old PN	Keyword/Nomenclature	New PN	Qty
065-00188-5101 or -5102	KSG 7200 ADAHRS	065-00188-5103	1

F. Tooling - Price and Availability

- (1) In addition to the equipment specified in the documents given in Paragraph 1.K. of this service bulletin, the item(s) in Table 4 are necessary to do this conversion. Items in Table 4 with a part number of N/A are commercially available. Do not send an order for the items to Honeywell as part of this service bulletin.

Table 4. Tooling

Part Number	Description	Qty
N/A	Laptop personal computer ¹ (PC) with KSG 7200 ADAHRS Field Maintenance Program, PN 222-30183-0002 installed	1
222-30183-0002	KSG 7200 ADAHRS Field Maintenance Program CD-ROM	1
N/A	RS-232 Cable	1
222-30306-0000	KSG 7200 APEX software CD-ROM (SW.v 03/01)	AR
985.99.99.610	Maintenance box - This item available from Pilatus Aircraft Limited, CAGE: SV220 ²	1
200-10367-0000	KSG 7200 installation T-harness ³	1

NOTES:

1. The minimum platform requirements for hosting the ADAHRS field maintenance program are:
 - CD-ROM, 8X or better
 - 20 gigabyte or greater hard disk drive
 - Capable of running MS Windows XP, 2000, NT (Vista is not compatible)
 - RS-232 (serial) port or compatible universal serial bus (USB) to serial converter.
2. Required for Pilatus PC-12/47E aircraft.
3. Required for Viking DHC-6, Series 400, Twin Otter aircraft.

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3. Accomplishment Instructions

A. General Information

WARNING: TO AVOID INJURY TO PERSONNEL, BE AWARE THAT VOLTAGES ARE PRESENT IN THE ADAHRS AND IN THE AIRCRAFT. VOLTAGES AS LOW AS 28 VOLTS CAN CAUSE SERIOUS INJURY UNDER SOME CONDITIONS. DO NOT BE MISLED BY THE TERM "LOW VOLTAGE."

CAUTION: THE ADAHRS CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE ITEMS. USE INDUSTRY APPROVED PRECAUTIONS.

NOTE: For the purpose of Paragraph 3, the term Pilatus is used to refer to Pilatus PC-12/47E aircraft.

NOTE: For the purpose of Paragraph 3, the term Twin Otter is used to refer to Viking DHC-6, Series 400, Twin Otter aircraft.

- (1) Obey the precautions.
- (2) Obey standard established maintenance practices during conversion of the ADAHRS unless specified differently.
- (3) The application software upgrade must be done first and then followed by the maintenance software upgrade as described herein.

B. Preparation

- (1) Make sure the aircraft is on the ground and connected to an auxiliary power source.
- (2) Open these circuit breakers (or equivalent):
 - (a) ADAHRS CH A (ESSENTIAL BUS)
 - (b) ADAHRS CH B (MAIN BUS).
- (3) Make the connections identified below.
 - (a) On the Pilatus:
 - 1 Connect the maintenance box (Pilatus PN 985.99.99.610) to the maintenance panel.
 - (b) On the Twin Otter:
 - 1 Insert the KSG 7200 installation T-harnesses (Honeywell PN 200-10367-0000) between the ADAHRS Channel A (or B) connector and the corresponding aircraft mating connector.
- (4) Connect the RS-232 cable.
 - (a) On the Pilatus:
 - 1 Use an RS-232 cable to connect the PC to the maintenance box ADAHRS channel A (or B) connector.
 - (b) On the Twin Otter:
 - 1 Use an RS-232 cable to connect the PC to the KSG 7200 installation T-harness.
- (5) Close these circuit breakers (or equivalent):
 - (a) ADAHRS CH A (ESSENTIAL BUS)

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- (b) ADAHRS CH B (MAIN BUS).
- (6) Energize the aircraft electrical system.
- (7) Wait 2 minutes after the ADAHRS self test to let the ADAHRS unit warm up.

C. KSG 7200 Application Software Upgrade

- (1) Start the KSG 7200 field maintenance program on the laptop computer. Verify that KSG 7200 maintenance program, Honeywell PN 731-30183-0002, is displayed at the top of the window. Refer to Figure 1.

NOTE: The PC should NOT be operating on battery power.

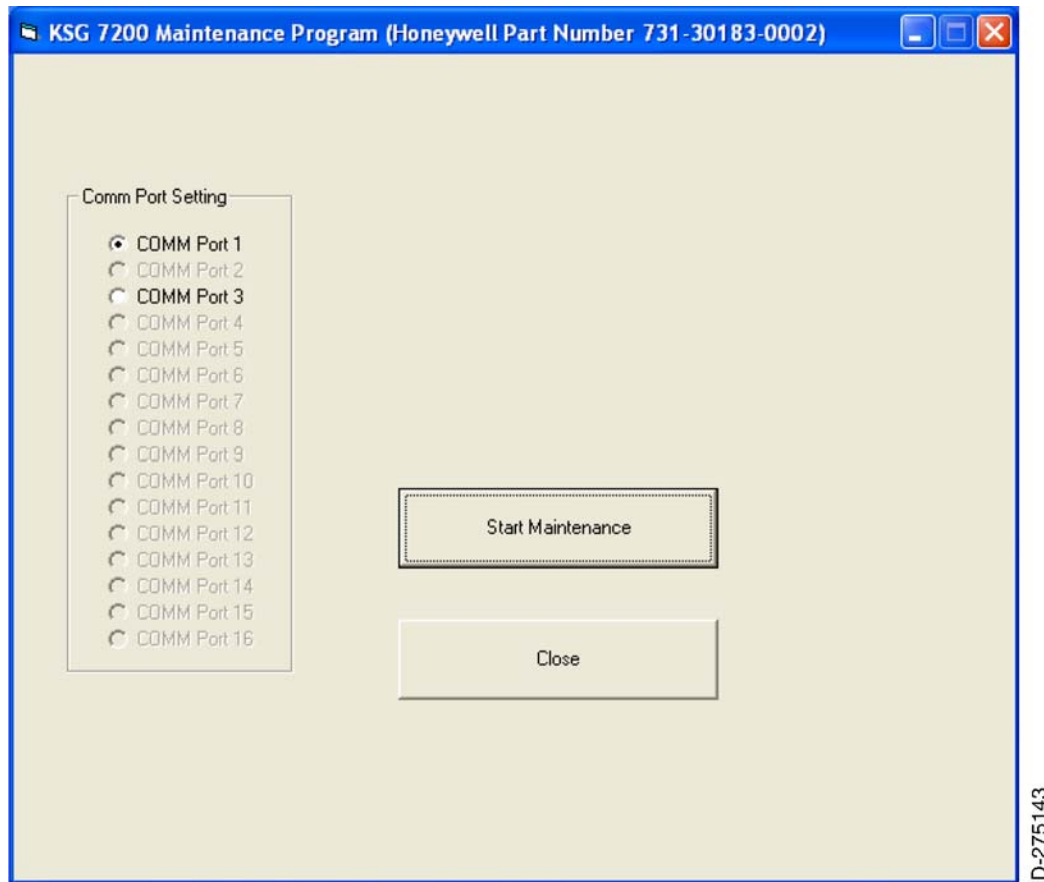


Figure 1. (Sheet 1 of 1) KSG 7200 Maintenance Program (Honeywell PN 731-30183-0002) Window

- (2) Select the appropriate communications (COMM) port on the PC, and then click the Start Maintenance button.

NOTE: The program will attempt to establish communication with the KSG 7200. Refer to Figure 2.

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Figure 2. (Sheet 1 of 1) Communicating With KSG 7200 Window

- (a) If a communication problem is encountered, the Maintenance Mode Operation Not Allowed window will appear as shown in Figure 3. If this occurs, make sure that the KSG 7200 is powered, the RS-232 cable is properly connected and that the correct COMM port is selected on the PC. If that fails to resolve the problem, cycle power to the KSG 7200.
- (b) If this does not resolve the communications problem, it can be necessary to use a different laptop and/or USB to RS-232 serial converter.

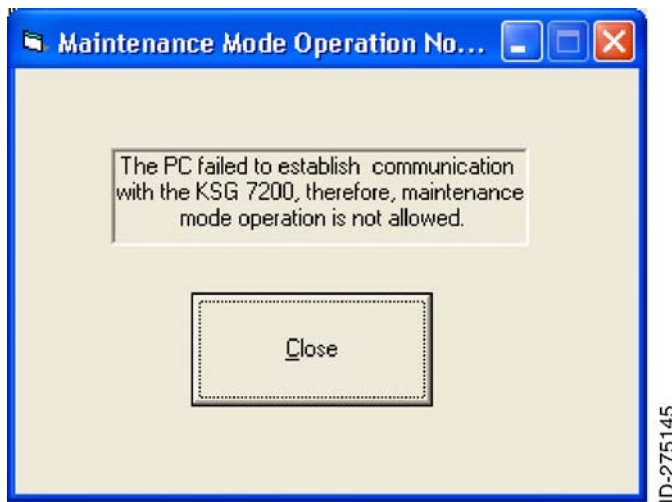


Figure 3. (Sheet 1 of 1) Maintenance Mode Operation Not Allowed Window

- (3) When communication is successful, the laptop computer screen will show the Channel A (or B) maintenance selection window. Refer to Figure 4.

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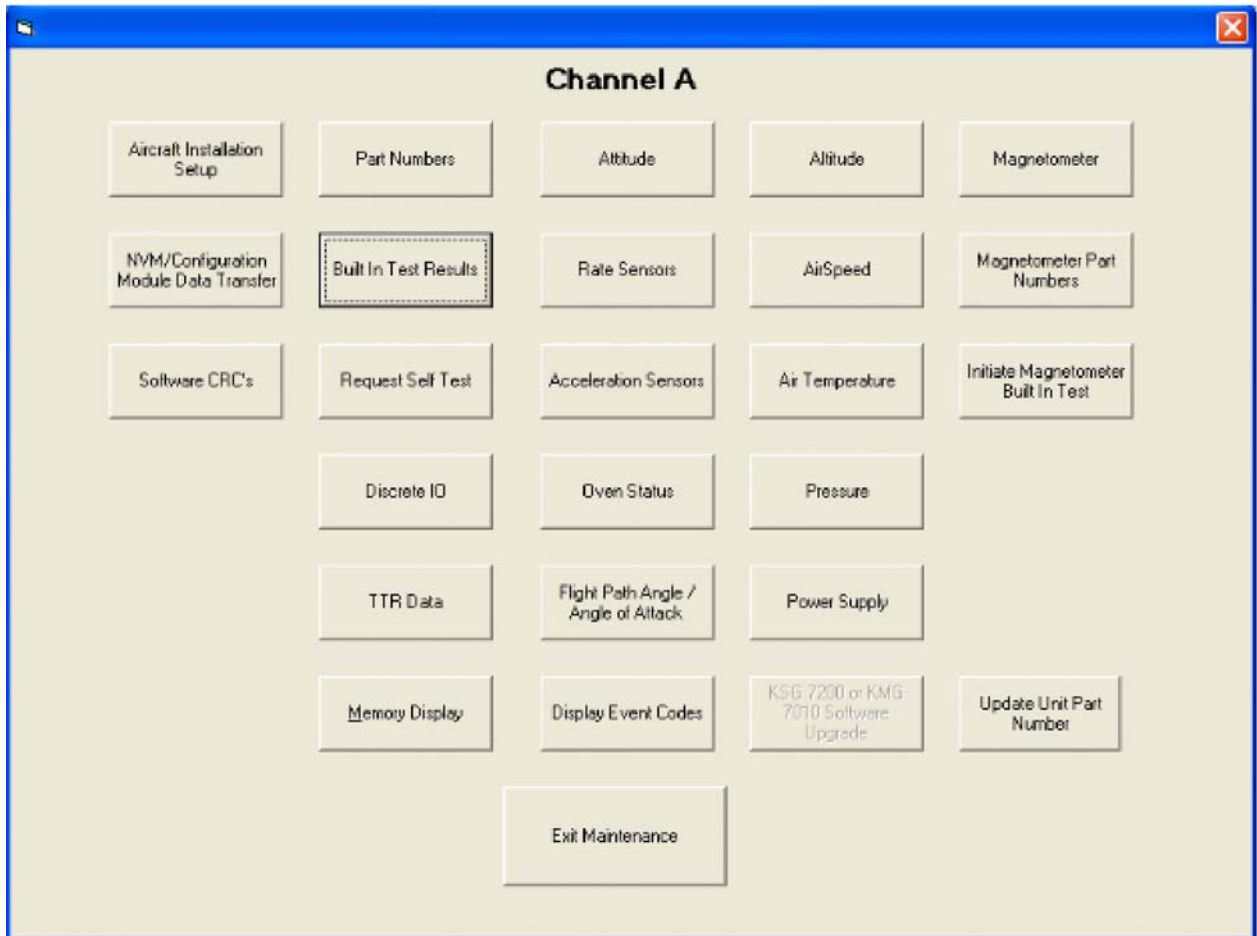


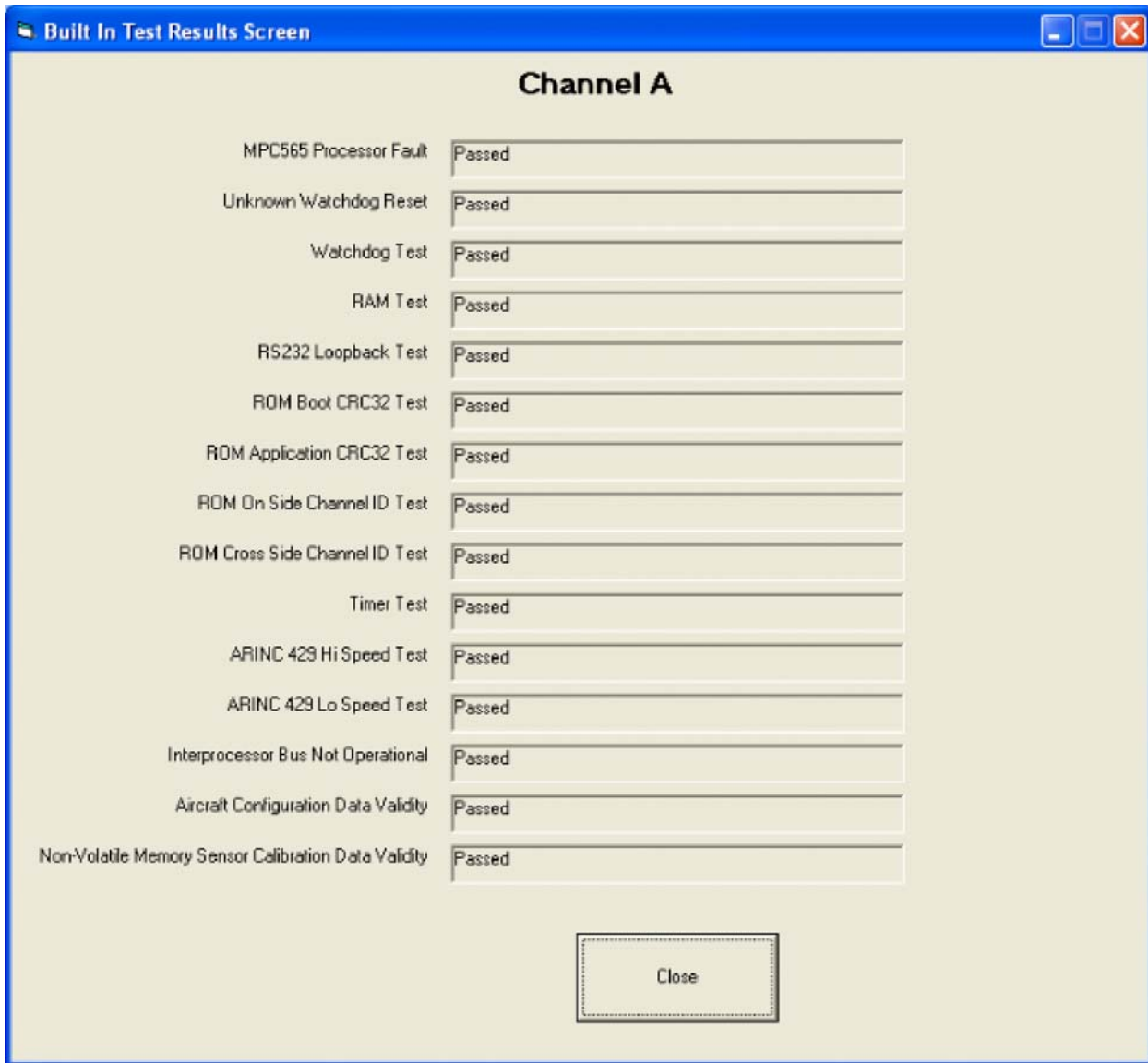
Figure 4. (Sheet 1 of 1) Channel A (or B) Maintenance Selection Window

- (4) Click the Built In Test Results button to show the Built In Test Results Screen window. Refer to Figure 5. If all items indicate Passed, click the Close button to return to the Channel A (or B) Maintenance Selection window. If one or more items indicate Failed, exit the program and return the unit to Honeywell for repair if the reason for the fault cannot be determined.

NOTE: It is normal for the ROM Cross Side Channel ID Test and the Interprocessor Bus Not Operational fields to indicate Failed if the other channel of the KSG 7200 is not powered.

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ID-275147

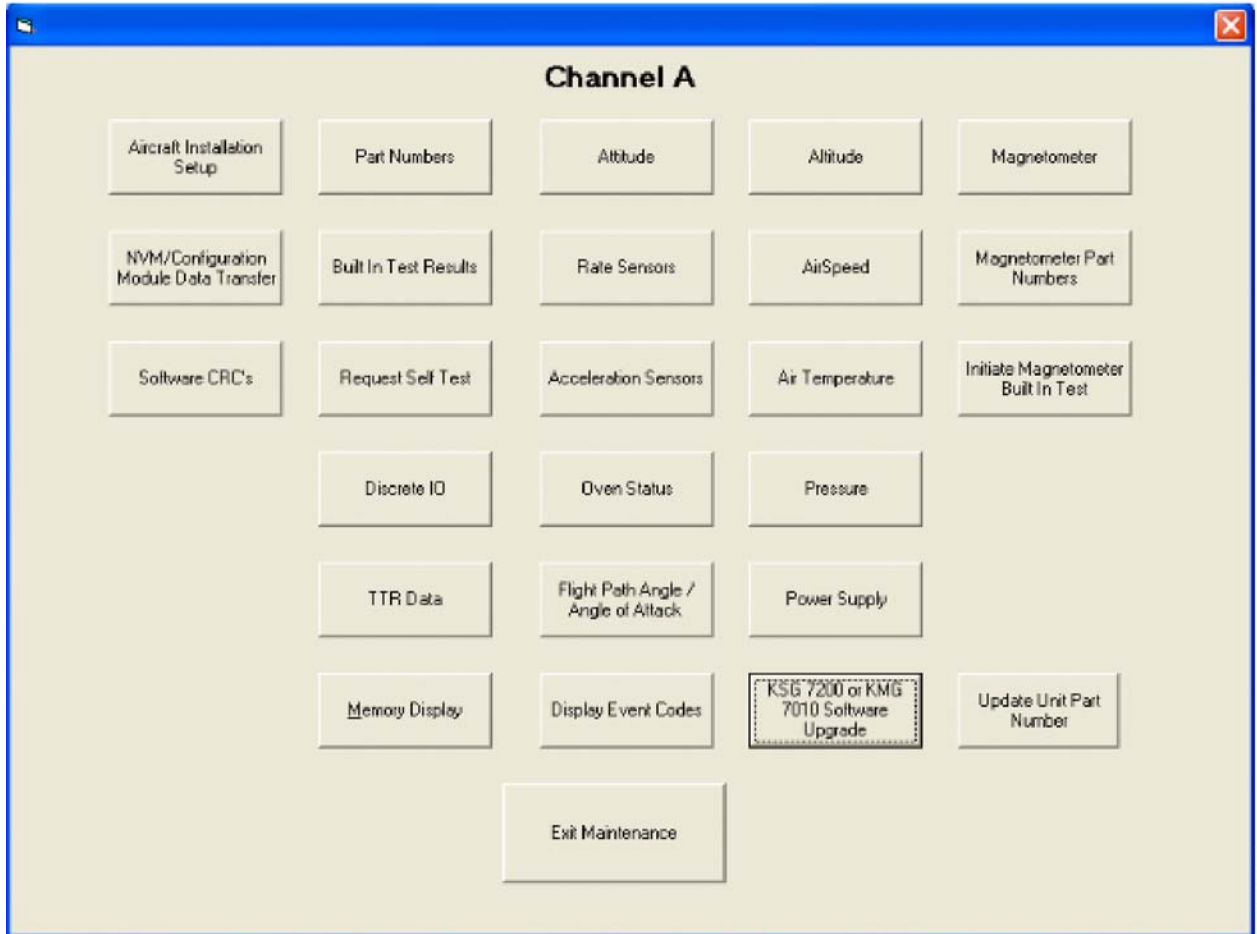
Figure 5. (Sheet 1 of 1) Built In Test Results Screen Window

- (5) After pushing Close, at this point, the KSG 7200 or KMG 7010 Software Upgrade button on the Channel A (or B) Maintenance Selection window will be grayed out. To activate this button, push the Ctrl + Alt + Shift keys on the PC keyboard. Refer to Figure 6.

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ID:275148

Figure 6. (Sheet 1 of 1) Channel A (or B) Maintenance Selection Window (KSG 7200 or KMG 7010 Software Upgrade)

- (6) Click on the KSG 7200 or KMG 7010 Software Upgrade button. The KSG 7200 Software Update Check window will appear. Refer to Figure 7. After reading the message, click YES to continue with the operating software upgrade.

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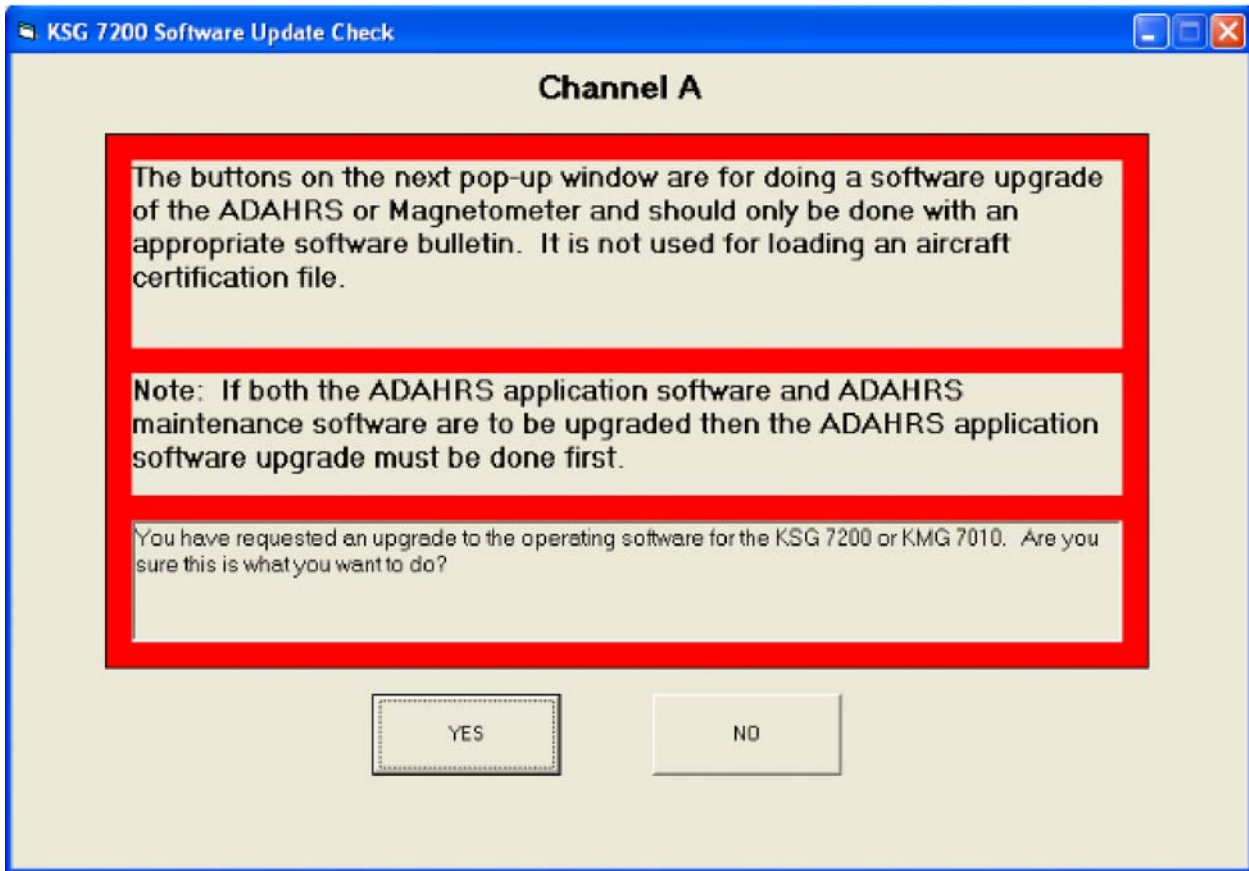


Figure 7. (Sheet 1 of 1) KSG 7200 Software Update Check Window

- (7) The Software Upgrade Screen window will appear. Refer to Figure 8.

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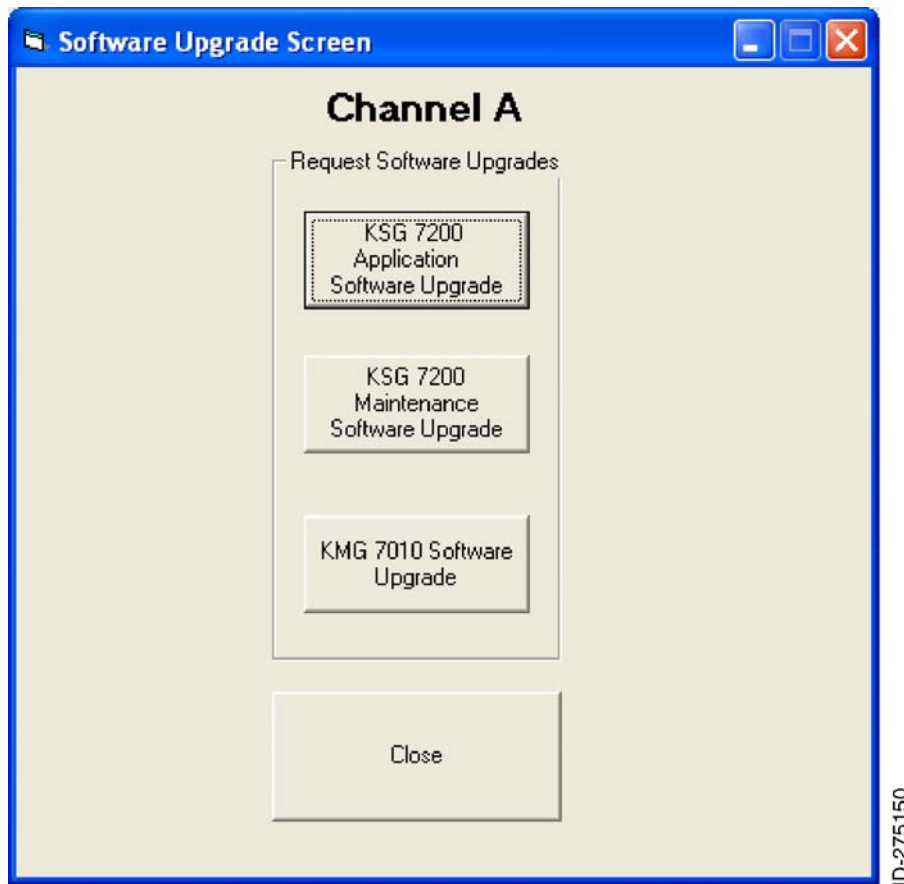


Figure 8. (Sheet 1 of 1) Software Upgrade Screen Window

- (8) Click on the KSG 7200 Application Software Upgrade button and the KSG 7200 Maintenance Program will open a message window. Refer to Figure 9.

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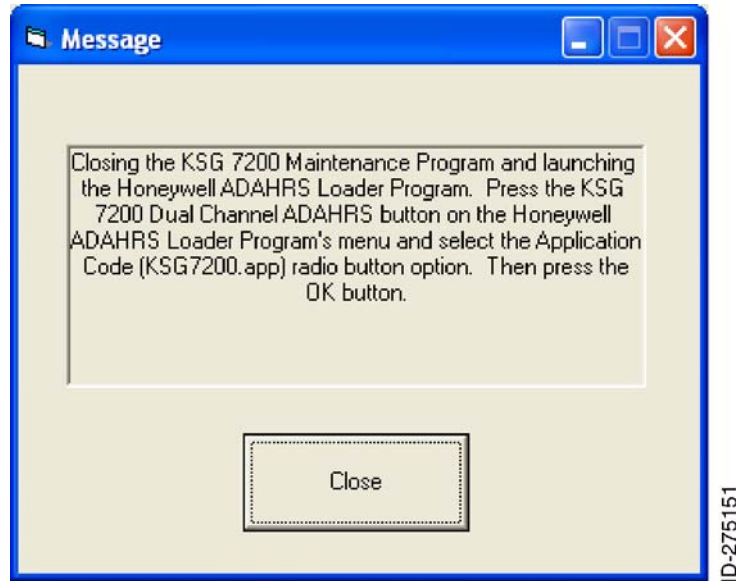


Figure 9. (Sheet 1 of 1) Message Window

- (9) After reading the message, click the Close button to proceed to the ADAHRS Loader program. Refer to Figure 10.

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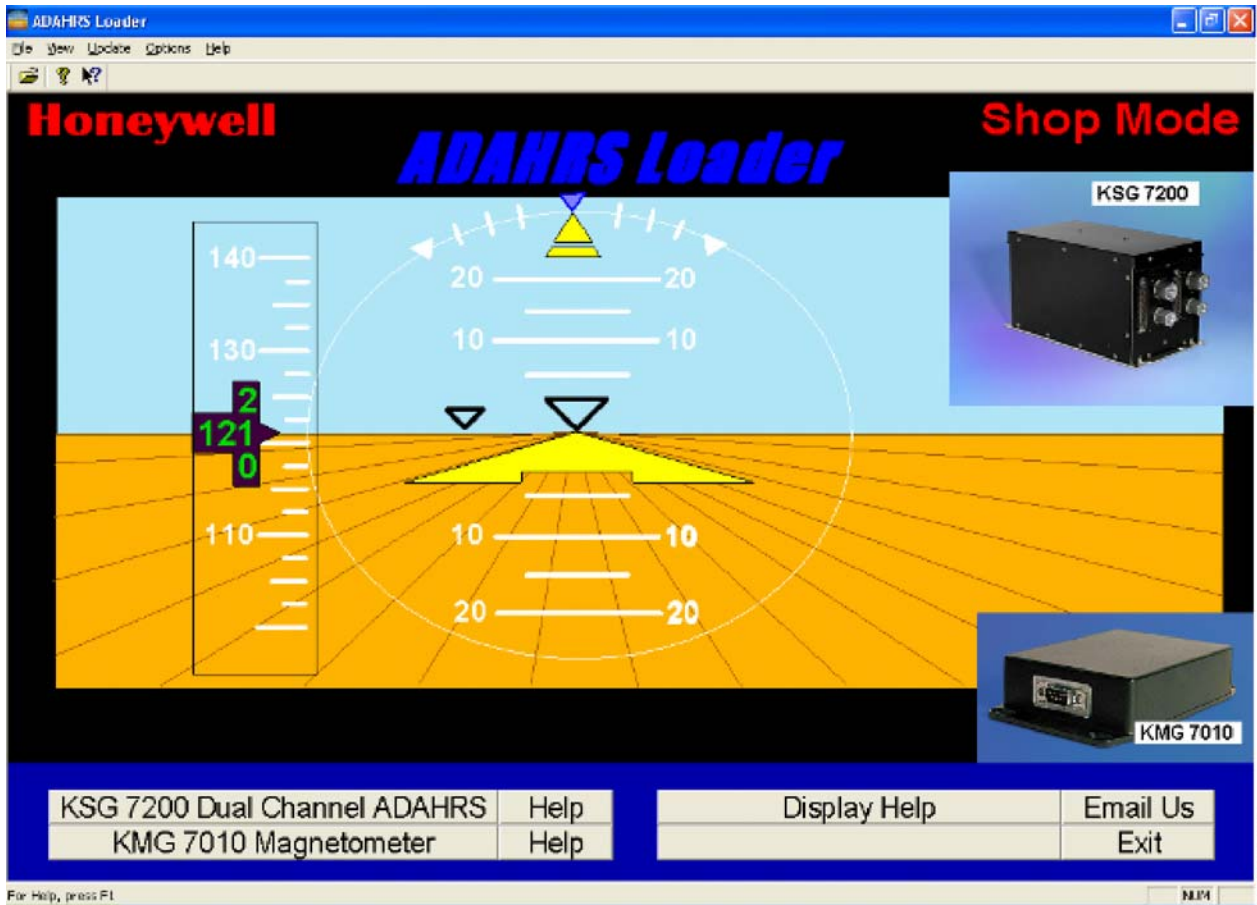


Figure 10. (Sheet 1 of 1) ADAHRS Loader Window

- (10) Insert the KSG 7200 APEX software CD-ROM, PN 222-30306-0000, into the CD-ROM drive of the PC.
- (11) Click on the KSG 7200 Dual Channel ADAHRS button and the KSG 7200 Update window will appear. Refer to Figure 11. Click the radio button to the left of the Application Code (KSG7200.app) update selection.

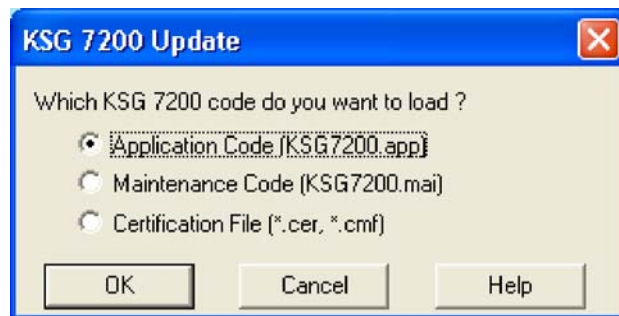


Figure 11. (Sheet 1 of 1) KSG 7200 Update Window (Application Code)

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- (12) The Select KSG 7200 Application Software File (Ksg7200.app) window will appear. Refer to Figure 12.

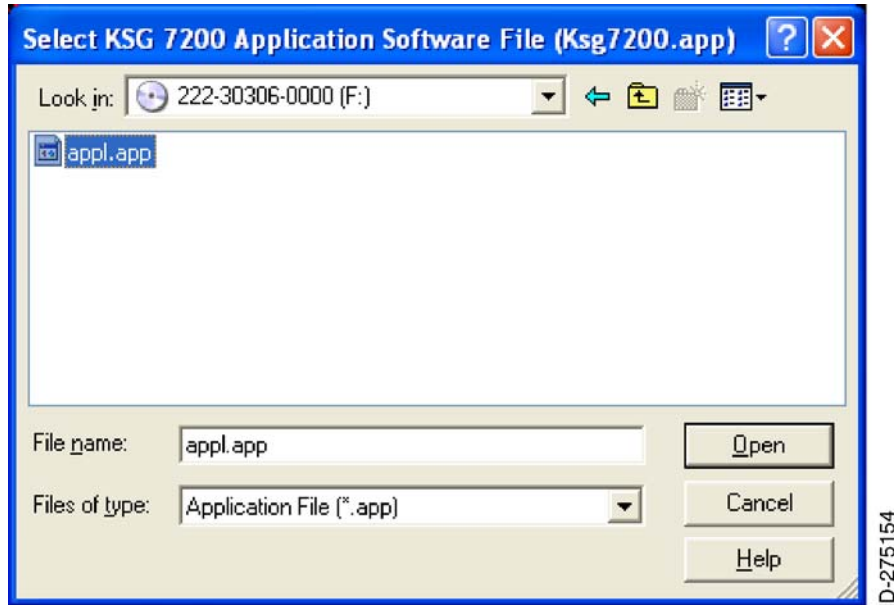


Figure 12. (Sheet 1 of 1) KSG 7200 Application Software File (Ksg7200.app) Window

- (13) Click on the appl.app application file from the CD-ROM and click Open.
- (14) The Is Update Information Correct? window will appear. Refer to Figure 13. Verify that the information displayed is correct. If using a different COM port than displayed, it will be necessary to Change Port.

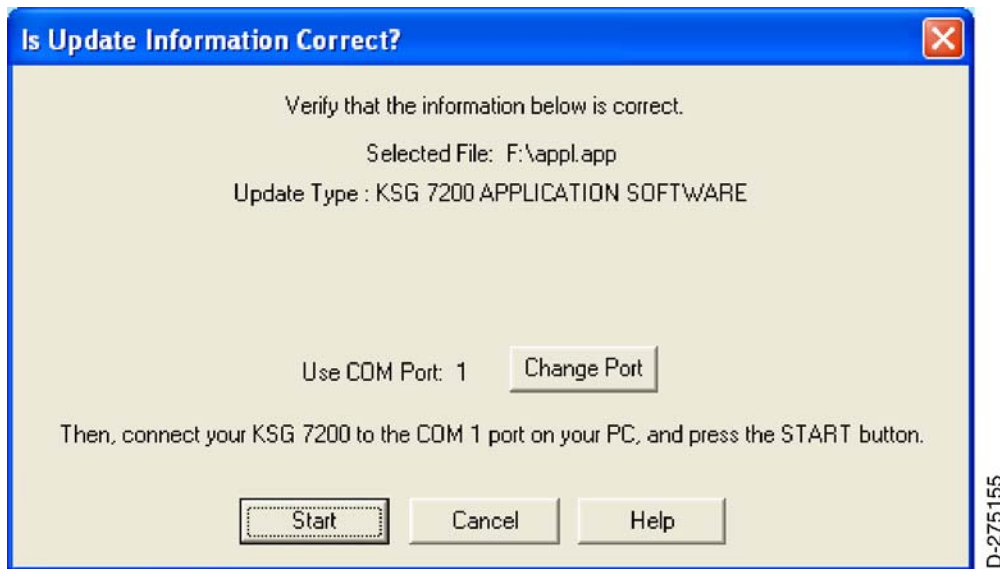


Figure 13. (Sheet 1 of 1) Is Update Information Correct? Window

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- (15) Click Start and the downloading will start. Refer to Figure 14. Verify that the Update KSG 7200 Application Software window indicates Communication established at 115200 baud. That baud rate is the only one that will result in a successful update. If necessary, cancel the program, recycle power to the ADAHRS channel being updated and start over.

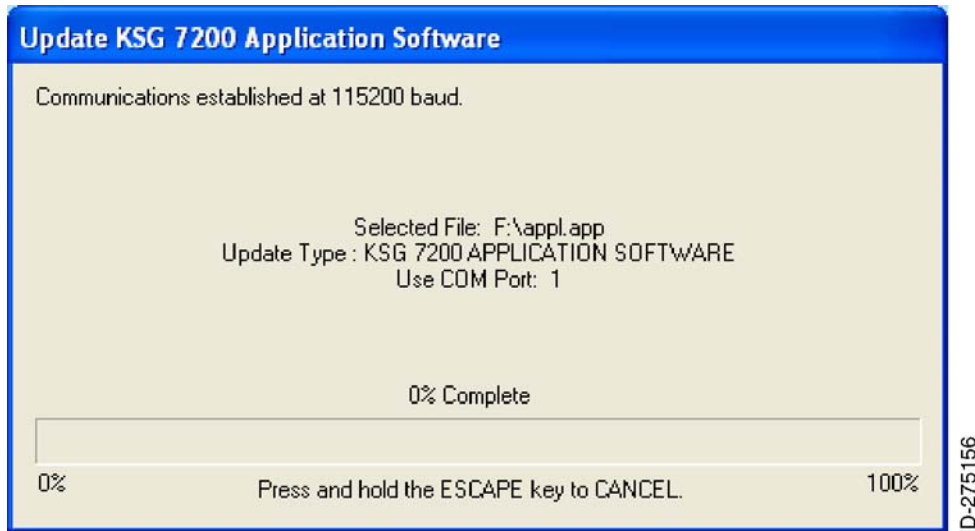


Figure 14. (Sheet 1 of 3) Update KSG 7200 Application Software Window

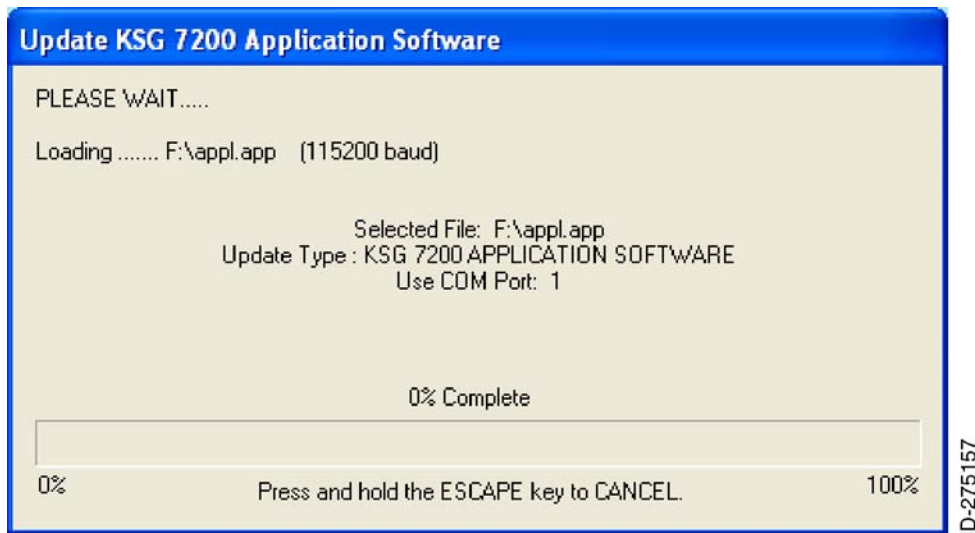


Figure 14. (Sheet 2 of 3) Update KSG 7200 Application Software Window

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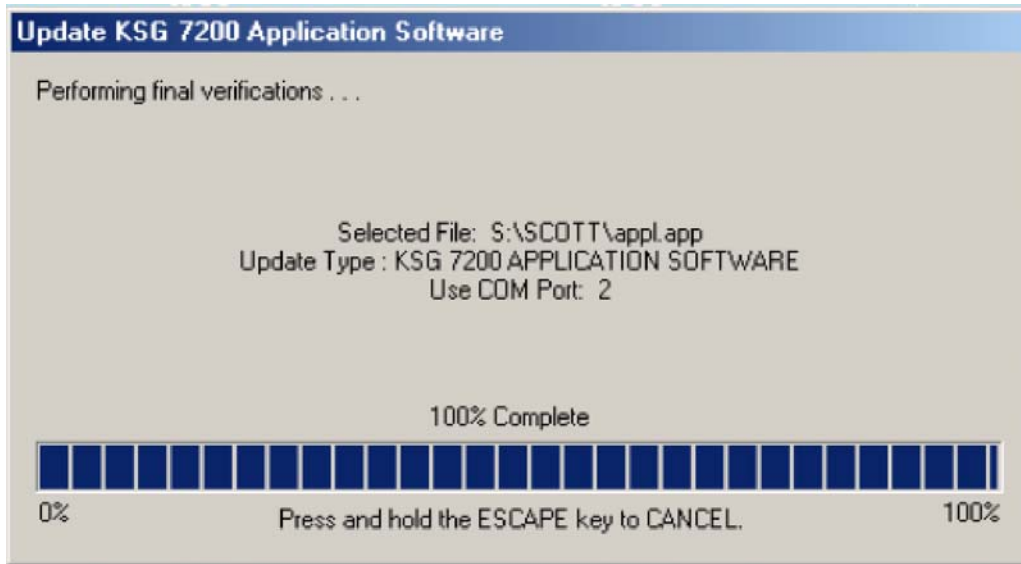


Figure 14. (Sheet 3 of 3) Update KSG 7200 Application Software Window

- (16) When the Update KSG 7200 Application Software is complete, the message shown in Figure 15 will be displayed.



Figure 15. (Sheet 1 of 1) Complete! Window

- (17) Click the OK button to return to the ADAHRS Loader program. Refer to Figure 10.
- (18) Click the EXIT button on the ADAHRS Loader program and the window shown in Figure 16 will be displayed.

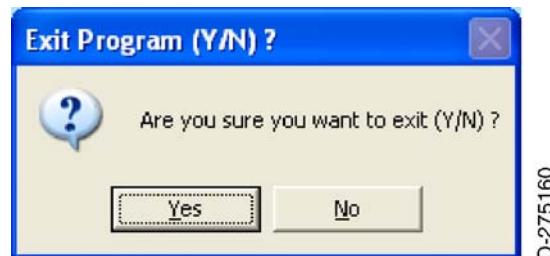


Figure 16. (Sheet 1 of 1) Exit Program (Y/N)? Window

- (19) Confirm by clicking the Yes button to exit the program.
- (20) Wait at least 60 seconds and restart the unit by removing power for approximately 5 seconds and then reapplying power.

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D. KSG 7200 Maintenance Software Upgrade

- (1) Restart the KSG 7200 field maintenance program.
- (2) Select the appropriate COMM port on the laptop computer, then click on the Start Maintenance button.
- (3) The message shown in Figure 17 will appear because the application software has been updated but the maintenance software update has yet to be performed.

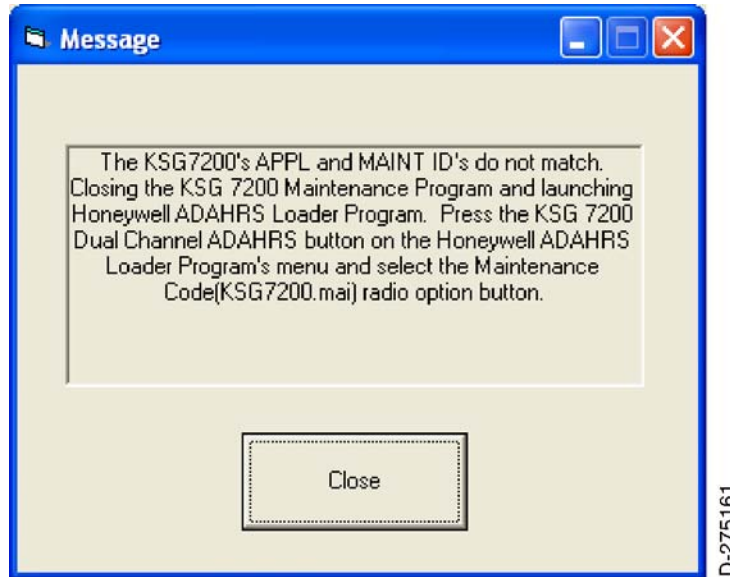


Figure 17. (Sheet 1 of 1) Message Window (Updated)

- (4) Once the message is read, click the Close button to launch the ADAHRS Loader program. Refer to Figure 10.
- (5) Click on the KSG 7200 Dual Channel ADAHRS button and the following KSG 7200 Update window shown in Figure 18 will appear. Click the radio button to the left of the Maintenance Code [KSG7200.mai] update selection.

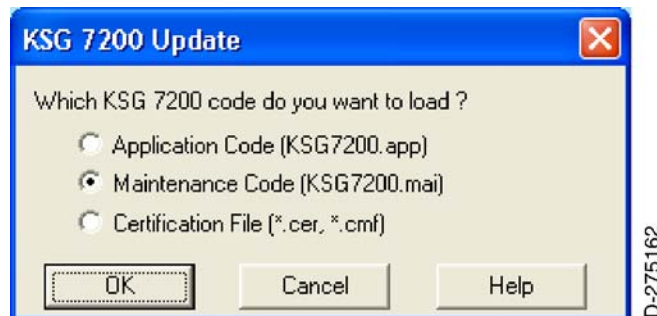


Figure 18. (Sheet 1 of 1) KSG 7200 Update Window (Maintenance Code)

- (6) Click the OK button and the Select KSG 7200 Maintenance Software File window will appear. Refer to Figure 19.

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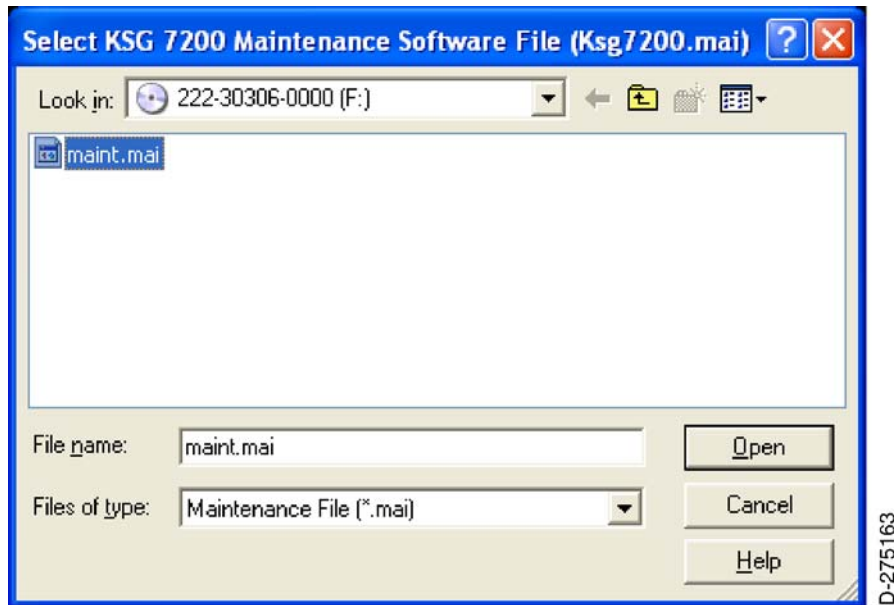


Figure 19. (Sheet 1 of 1) KSG 7200 Maintenance Software File (Ksg7200.mai) Window

- (7) Click on the maint.mai file from the CD-ROM and click the Open button.
- (8) The Is Update Information Correct? window will appear. Verify that the information displayed is correct. If using a different COM port than displayed, it will be necessary to select Change Port. Refer to Figure 20.

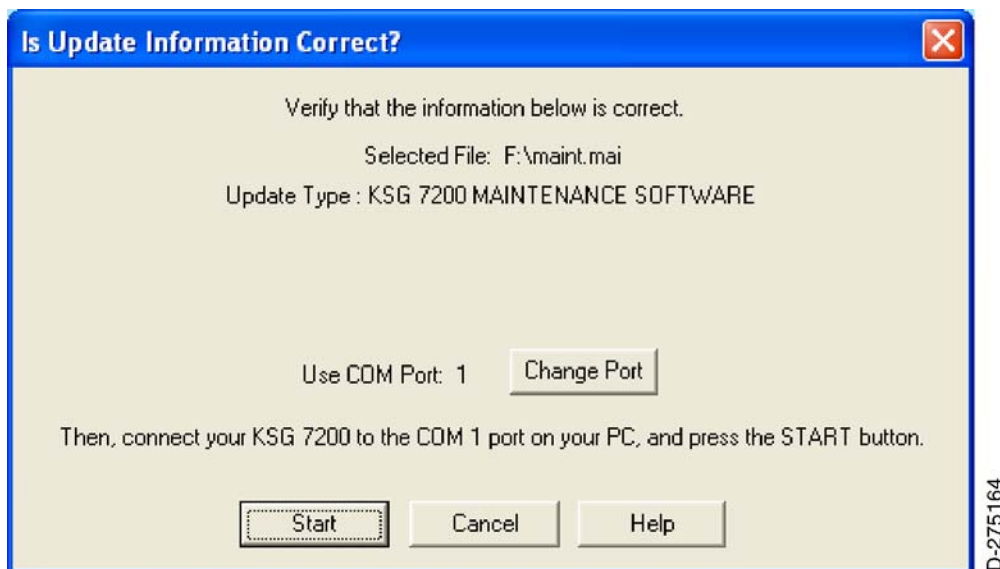


Figure 20. (Sheet 1 of 1) Is Update Information Correct? Window (Change Port)

- (9) Click the Start button and the downloading will start. Verify that the Update KSG 7200 Maintenance Software window indicates Communication established at 115200 baud. Refer to Figure 21.

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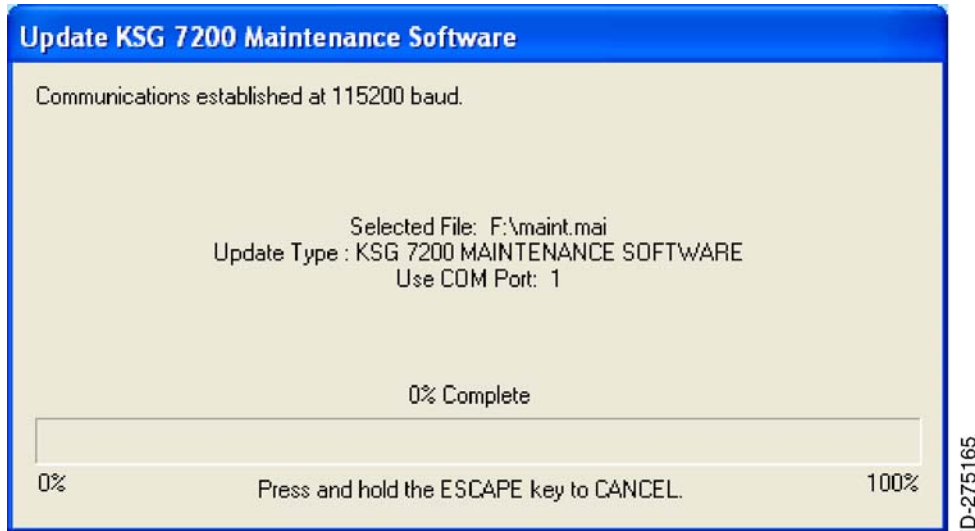


Figure 21. (Sheet 1 of 2) Update KSG 7200 Maintenance Software Window

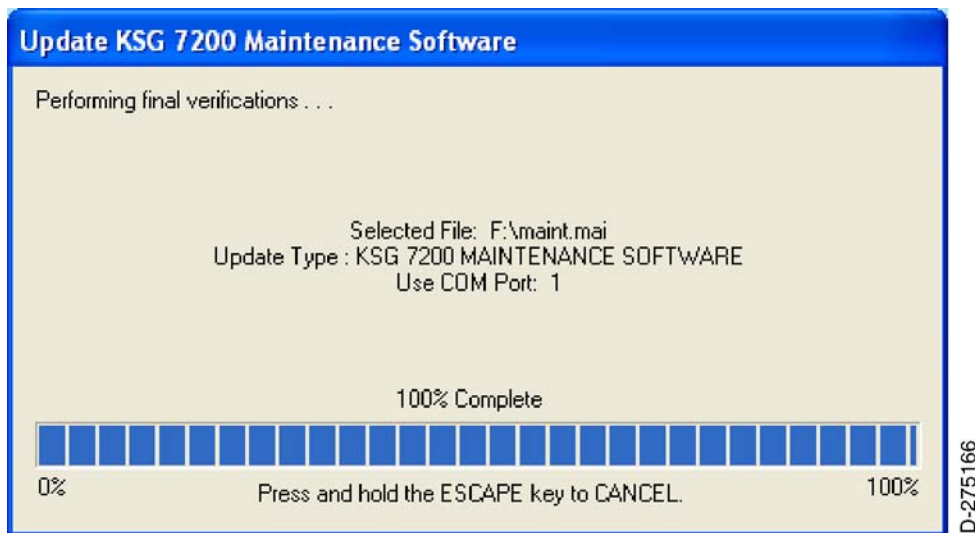


Figure 21. (Sheet 2 of 2) Update KSG 7200 Maintenance Software Window

- (10) When the Update KSG 7200 Maintenance Software is complete, the message shown in Figure 22 will be displayed.

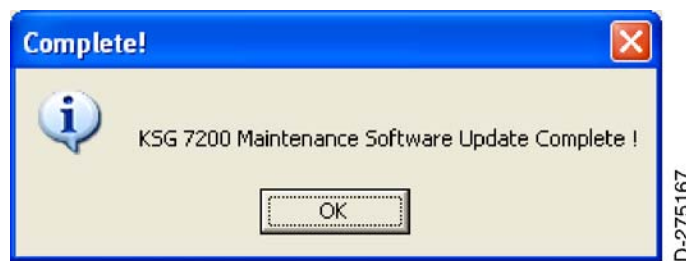


Figure 22. (Sheet 1 of 1) Complete! Window (Updated)

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- (11) OK to return to the ADAHRS Loader program. Refer to Figure 10.
- (12) Click the EXIT button on the ADAHRS Loader program and the window shown in Figure 23 will be displayed.

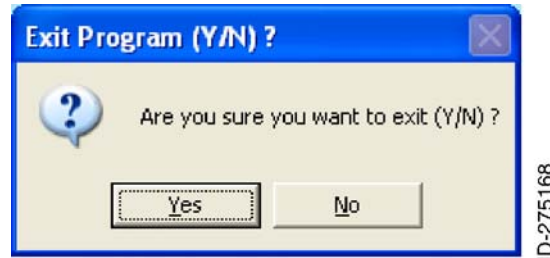


Figure 23. (Sheet 1 of 1) Exit Program (Y/N)? Window (EXIT)

- (13) Confirm by clicking the Yes button to exit the program.
- (14) Wait at least 60 seconds and restart the unit by removing power for approximately 5 seconds and then reapplying power.

E. KSG 7200 Certification File Software Upgrade

- (1) Remove the existing disc from the CD-ROM drive of the laptop computer and insert:
 - (a) For the Pilatus:
 - 1 KSG 7200 Cert File CD-ROM, PN 222-30197-0006 (60/75 mGauss settings).
 - (b) For the Twin Otter:

NOTE: Refer to the Viking DHC-6 Series 400 Twin Otter Aircraft Maintenance Manual for which one of the three certification files identified below to use for a given aircraft configuration.

 - 1 KSG 7200 Cert File CD-ROM, PN 222-30278-0004 (Certification File 1a).
 - 2 KSG 7200 Cert File CD-ROM, PN 222-30278-0005 (Certification File 2a).
 - 3 KSG 7200 Cert File CD-ROM, PN 222-30278-0006 (Certification File 3a).
- (2) Restart the KSG 7200 field maintenance program.
- (3) Select the appropriate COMM port on the laptop computer and click the Start Maintenance button.
- (4) Click on the Aircraft Installation Setup button. Refer to Figure 24.

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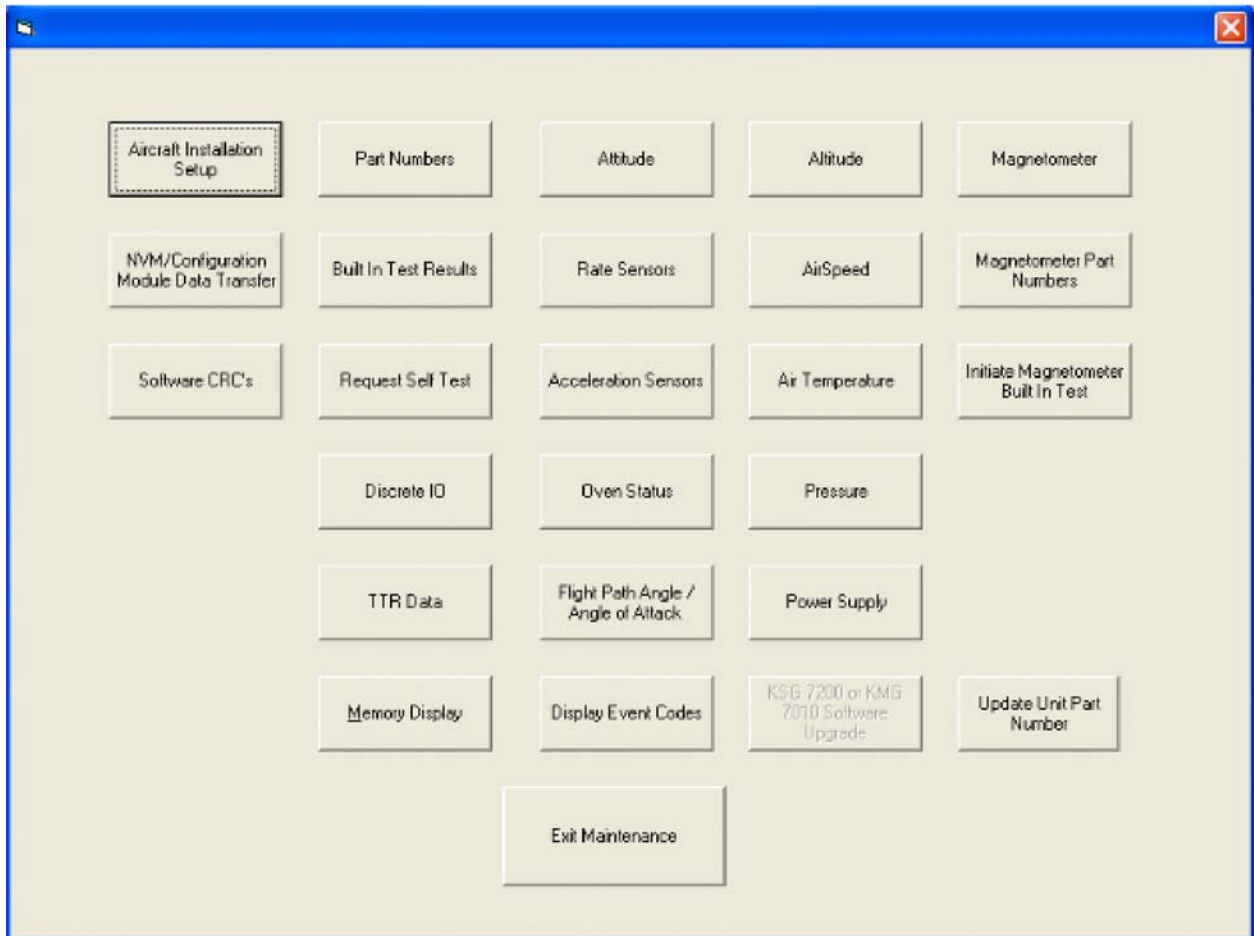


Figure 24. (Sheet 1 of 1) Start Maintenance Window (Aircraft Installation Setup)

- (5) The Installation Setup window will appear. Refer to Figure 25.

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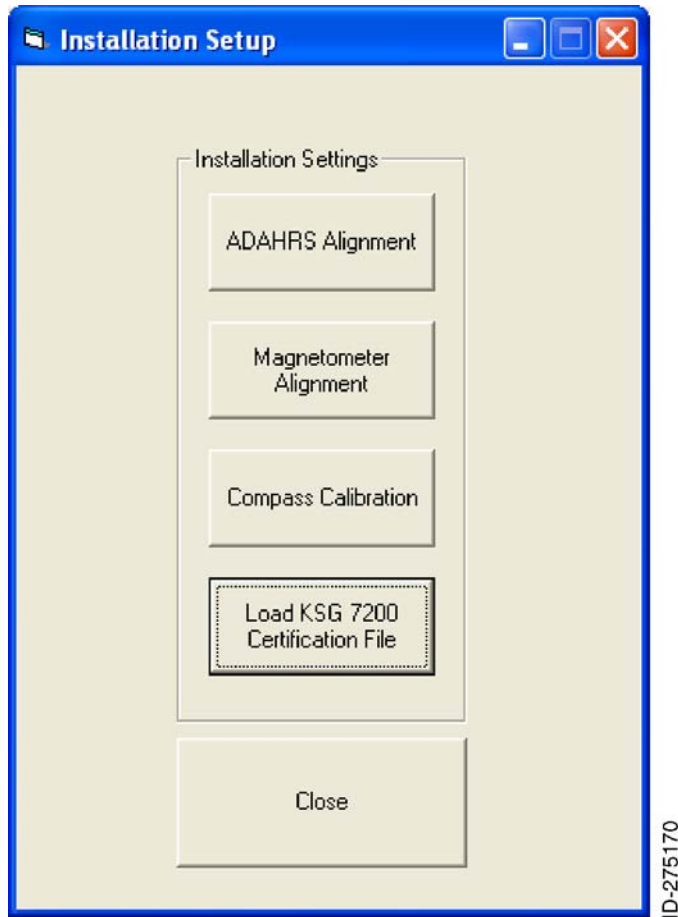


Figure 25. (Sheet 1 of 1) Installation Setup Window

- (6) Click on the Load KSG 7200 Certification File button.
- (7) The message window shown in Figure 26 will appear.

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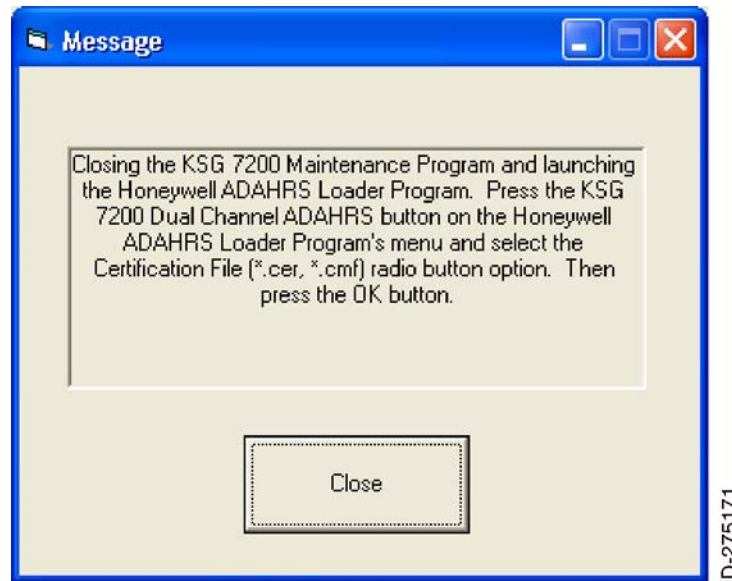


Figure 26. (Sheet 1 of 1) Message Window (Load)

- (8) Once the message is read, click on the Close button to launch the ADAHRS Loading program. Refer to Figure 10.
- (9) Click on the KSG 7200 Dual Channel ADAHRS button and the following KSG 7200 Update window will appear. Click the radio button to the left of the Certification File [*.*cer, *.*cmf] update selection. Refer to Figure 27.

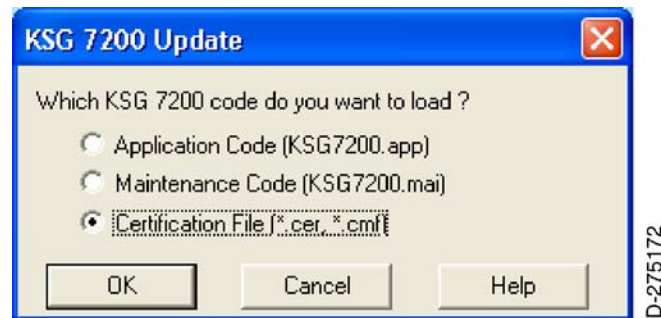


Figure 27. (Sheet 1 of 1) KSG 7200 Update Window (Certification File)

- (10) Click the OK button and the Select KSG 7200 Certification File (*.cer, *.cmf) window will appear.
 - (a) Refer to Figure 28 to identify Pilatus (60/75 mGauss settings).
 - (b) Refer to Figure 29 to identify Twin Otter (Certification File 1a).
 - (c) Refer to Figure 30 to identify Twin Otter (Certification File 2a).
 - (d) Refer to Figure 31 to identify Twin Otter (Certification File 3a).

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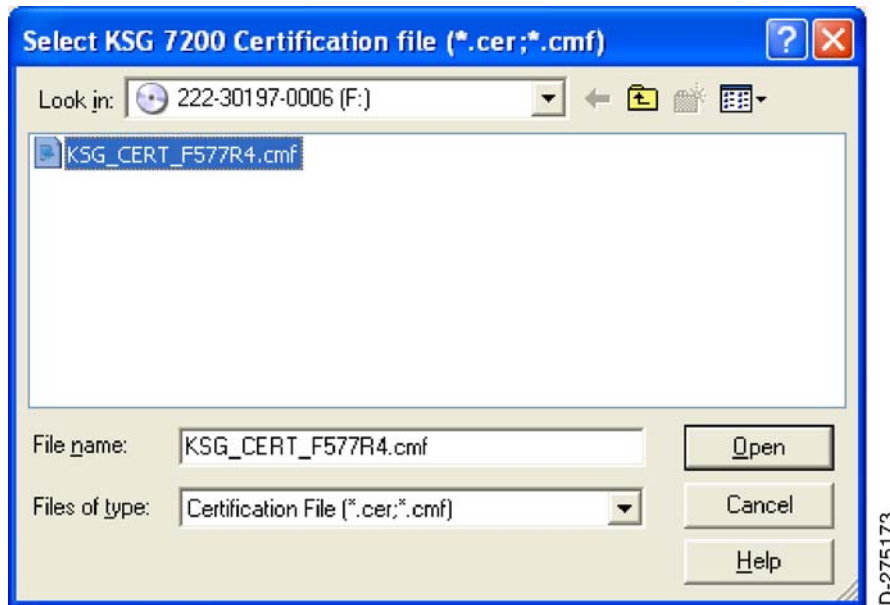


Figure 28. (Sheet 1 of 1) Select KSG 7200 Certification File (*.cer;*.cmf) Window for Pilatus Certification File KSG_CERT_F577R4.cmf (60/75 mGauss settings)

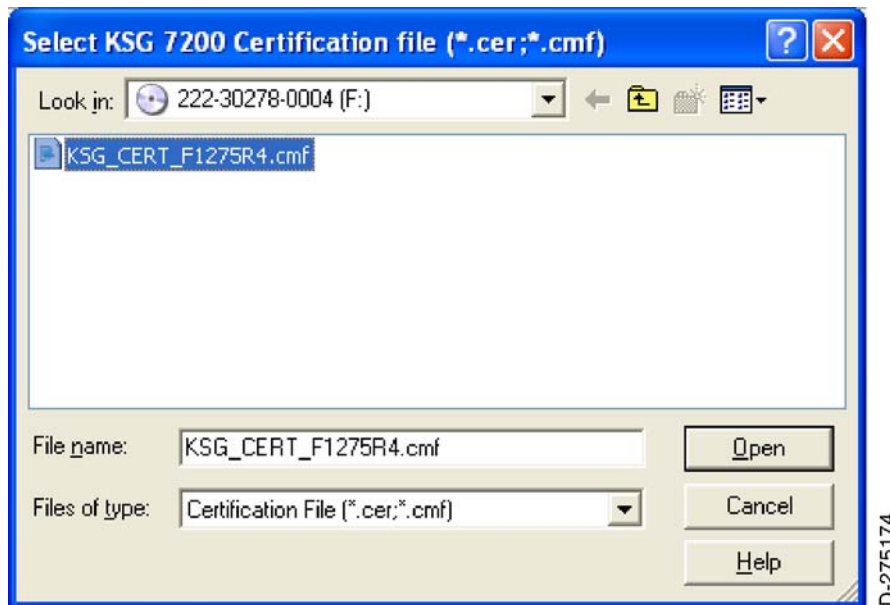


Figure 29. (Sheet 1 of 1) Select KSG 7200 Certification File (*.cer;*.cmf) Window for Twin Otter Certification File KSG_CERT_F1275R4.cmf (Certification File 1a)

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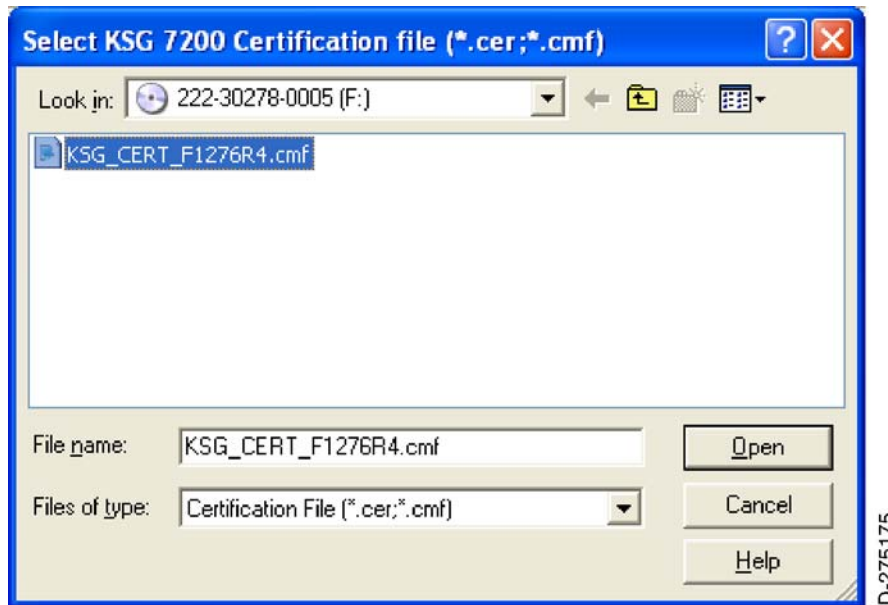


Figure 30. (Sheet 1 of 1) Select KSG 7200 Certification File (*.cer;*.cmf) Window for Twin Otter Certification File KSG_CERT_F1276R4.cmf (Certification File 2a)



Figure 31. (Sheet 1 of 1) Select KSG 7200 Certification File (*.cer;*.cmf) Window for Twin Otter Certification File KSG_CERT_F1277R4.cmf (Certification File 3a)

- (11) Click on the appropriate KSG_CERT_FXXXX.cmf certification file and click the Open button.

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- (12) The Is Update Information Correct? window will appear. Verify the information displayed is correct. If using a different COM port than displayed, it will be necessary to select Change Port.
- (a) Refer to Figure 32 to identify Pilatus (60/75 mGauss settings).
 - (b) Refer to Figure 33 to identify Twin Otter Certification File 1a.
 - (c) Refer to Figure 34 to identify Twin Otter Certification File 2a.
 - (d) Refer to Figure 35 to identify Twin Otter Certification File 3a.

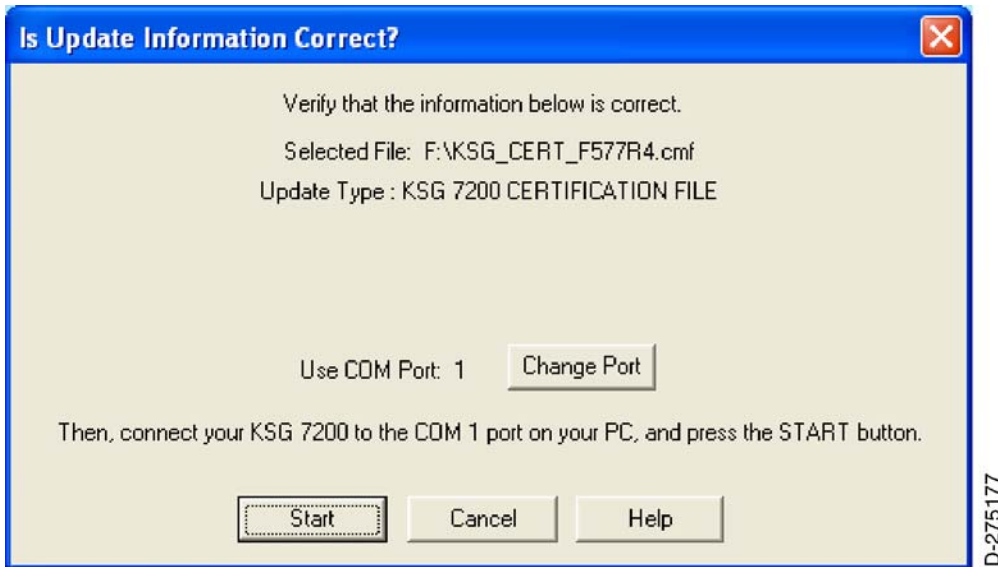


Figure 32. (Sheet 1 of 1) Is Update Information Correct? Window for Pilatus Certification File KSG_CERT_F577R4.cmf (60/75 mGauss settings)

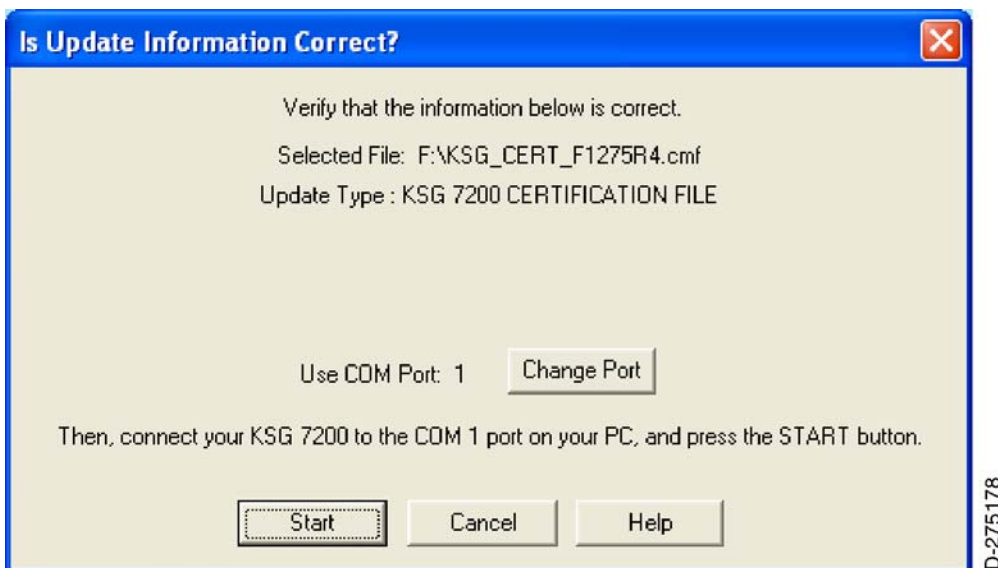


Figure 33. (Sheet 1 of 1) Is Update Information Correct? Window for Twin Otter Certification File KSG_CERT_F1275R4.cmf (Certification File 1a)

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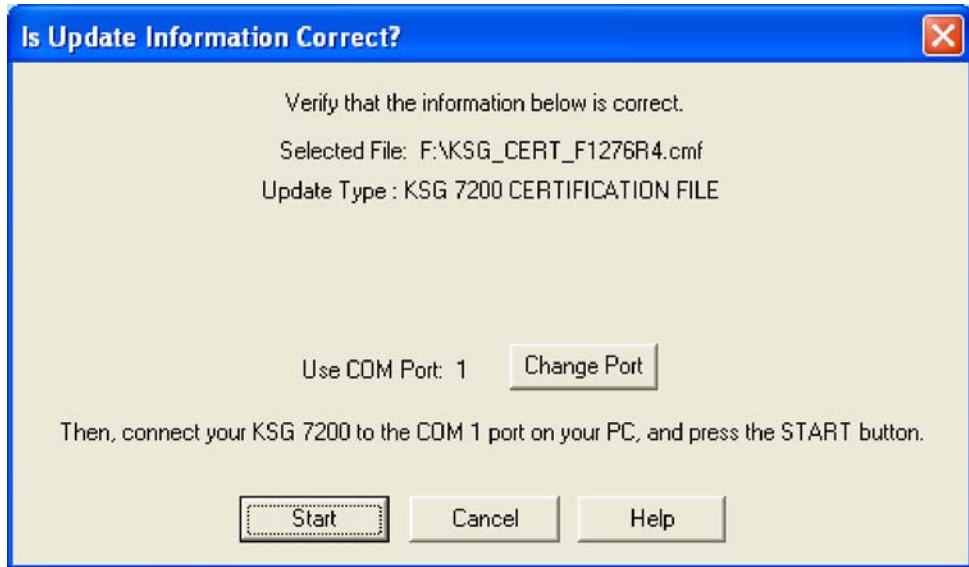


Figure 34. (Sheet 1 of 1) Is Update Information Correct? Window for Twin Otter Certification File KSG_CERT_F1276R4.cmf (Certification File 2a)

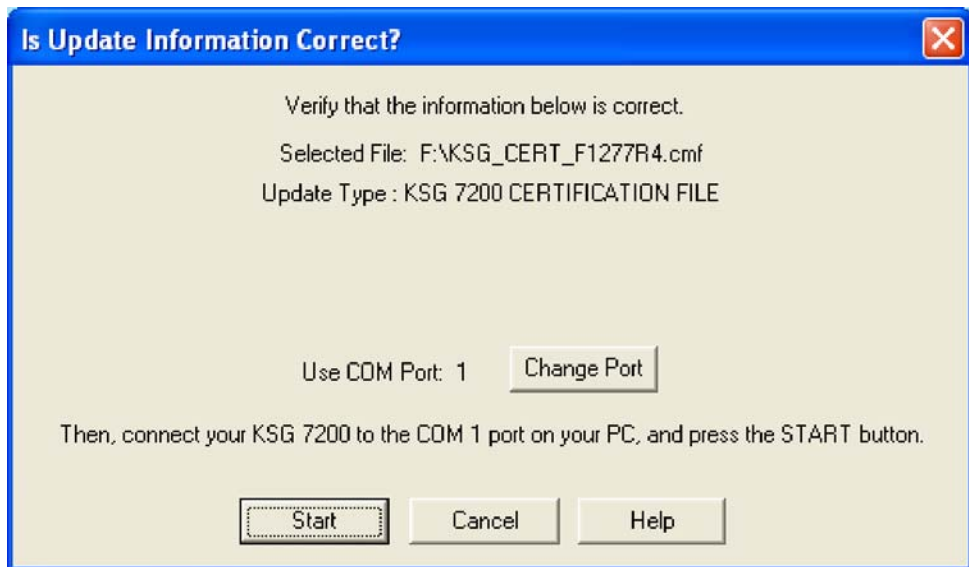


Figure 35. (Sheet 1 of 1) Is Update Information Correct? Window for Twin Otter Certification File KSG_CERT_F1277R4.cmf (Certification File 3a)

- (13) Click the Start button and uploading will start. Verify that communication is established at 115,200 baud.
 - (a) Refer to Figure 36 to identify Pilatus (60/75 mGauss settings).
 - (b) Refer to Figure 37 to identify Twin Otter Certification File 1a.
 - (c) Refer to Figure 38 to identify Twin Otter Certification File 2a.
 - (d) Refer to Figure 39 to identify Twin Otter Certification File 3a.

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Figure 36. (Sheet 1 of 1) Update KSG 7200 Certification Software Window for Pilatus Certification File KSG_CERT_F577R4.cmf (60/75 mGauss settings)



Figure 37. (Sheet 1 of 1) Update KSG 7200 Certification Software Window for Twin Otter Certification File KSG_CERT_F1275R4.cmf (Certification File 1a)

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Figure 38. (Sheet 1 of 1) Update KSG 7200 Certification Software Window for Twin Otter Certification File KSG_CERT_F1276R4.cmf (Certification File 2a)



Figure 39. (Sheet 1 of 1) Update KSG 7200 Certification Software Window for Twin Otter Certification File KSG_CERT_F1277R4.cmf (Certification File 3a)

- (14) When the Update KSG 7200 certification file is complete, the message shown in Figure 40 will be displayed.

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Figure 40. (Sheet 1 of 1) Complete! Window (Updated KSG 7200)

- (15) Click the OK button to return to the ADAHRS Loader program. Refer to Figure 10.
- (16) Click on the EXIT button on the ADAHRS Loader program and the window shown in Figure 41 will be displayed.

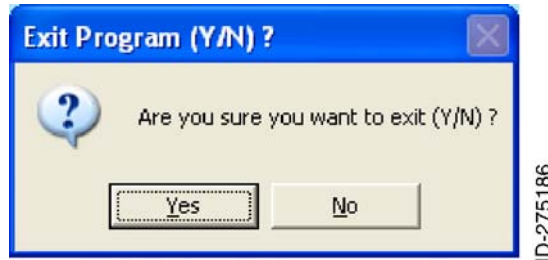


Figure 41. (Sheet 1 of 1) Exit Program (Y/N)? Window (EXIT ADAHRS)

- (17) Confirm by clicking the Yes button to exit the program.
- (18) Wait at least 60 seconds and restart the unit by removing power for approximately 5 seconds and then reapplying power.

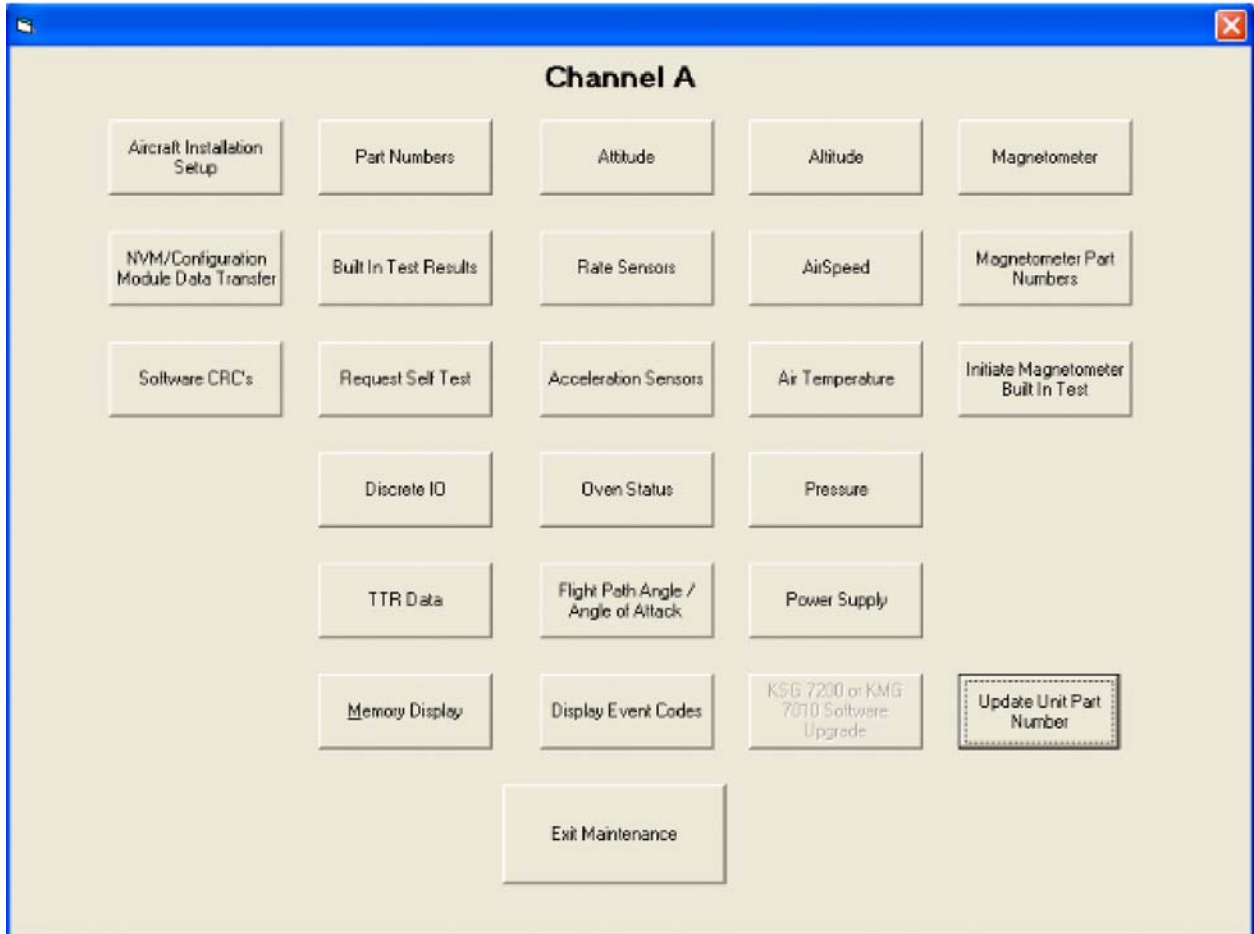
F. KSG 7200 Software Part Number Update

- (1) Restart the KSG 7200 field maintenance program.
- (2) Select the appropriate COMM port on the laptop computer, click the Update Unit Part Number button in the Start Maintenance window. Refer to Figure 42

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Figure 42. (Sheet 1 of 1) Start Maintenance Window (Update Unit Part Number)

- (3) The Set Unit Part Numbers Screen window will appear. Refer to Figure 43.

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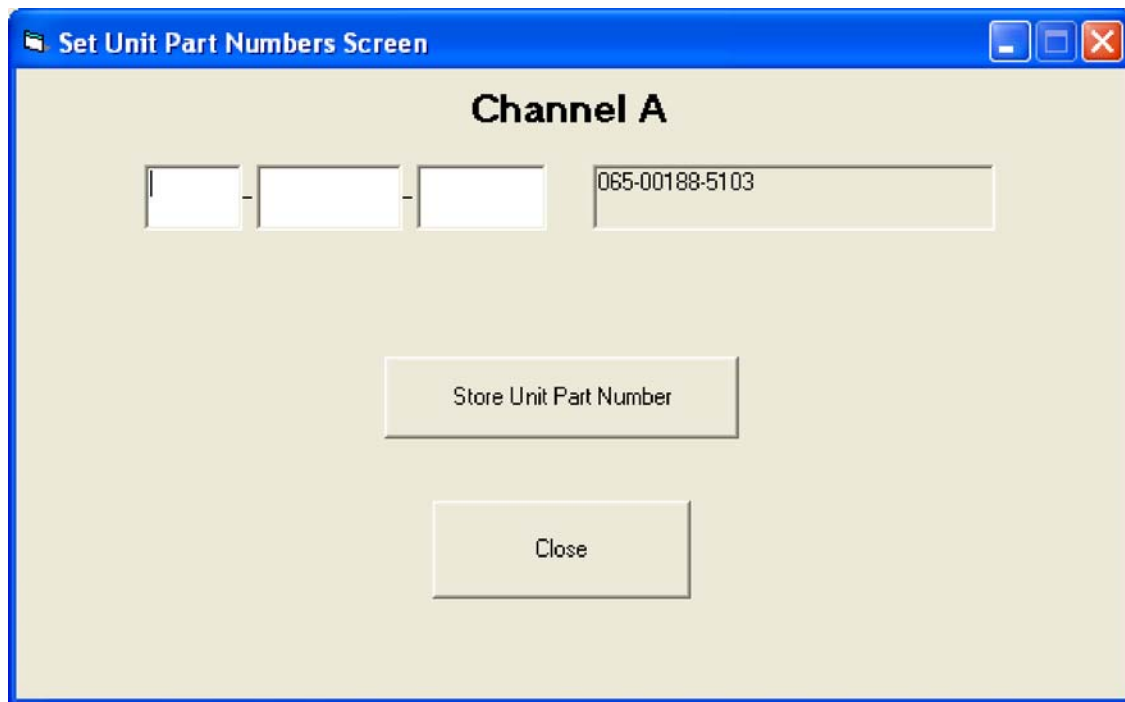


Figure 43. (Sheet 1 of 1) Set Unit Part Numbers Screen Window

(4) Enter PN 065-00188-5103. Refer to Figure 44.

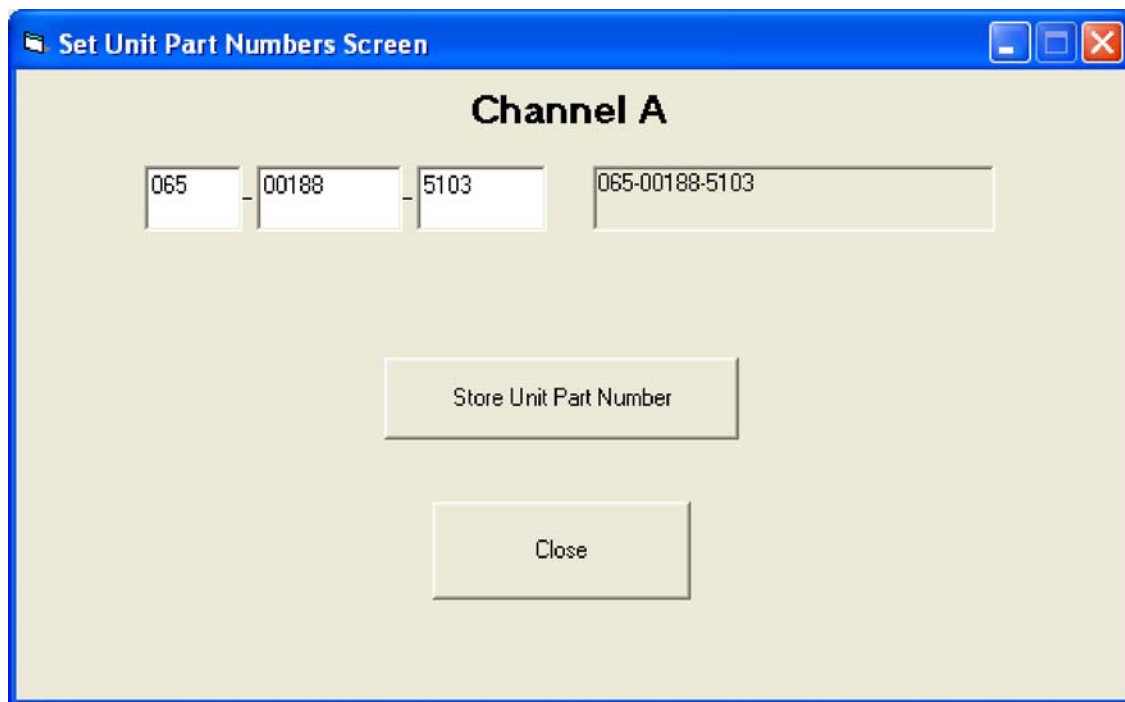


Figure 44. (Sheet 1 of 1) Set Unit Part Numbers Screen (PN 065-00188-5103) Window

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- (5) Click the Store Unit Part Number button. The Message window shown in Figure 45 will be displayed if the unit part number has been stored successfully.

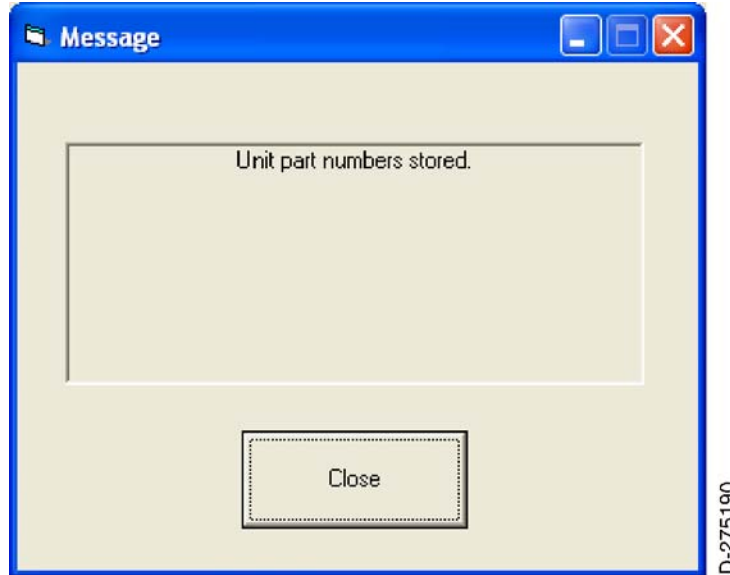


Figure 45. (Sheet 1 of 1) Message Window (Store Unit Part Number)

- (6) Click the Close button on the Message window and again on the Set Unit Part Numbers Screen to return to the Channel A (or B) Maintenance Selection window.

G. KSG 7200 Built In Test Results, Part Numbers Verification and Cyclic Redundancy Check (CRC) Verification

- (1) Click the Built In Test Results button to show the Built In Test Results Screen window. All items shall indicate Passed. Refer to Figure 46.

NOTE: It is normal for the ROM Cross Side Channel ID Test and the Interprocessor Bus Not Operational fields to indicate Failed if the other channel of the KSG 7200 is not powered.

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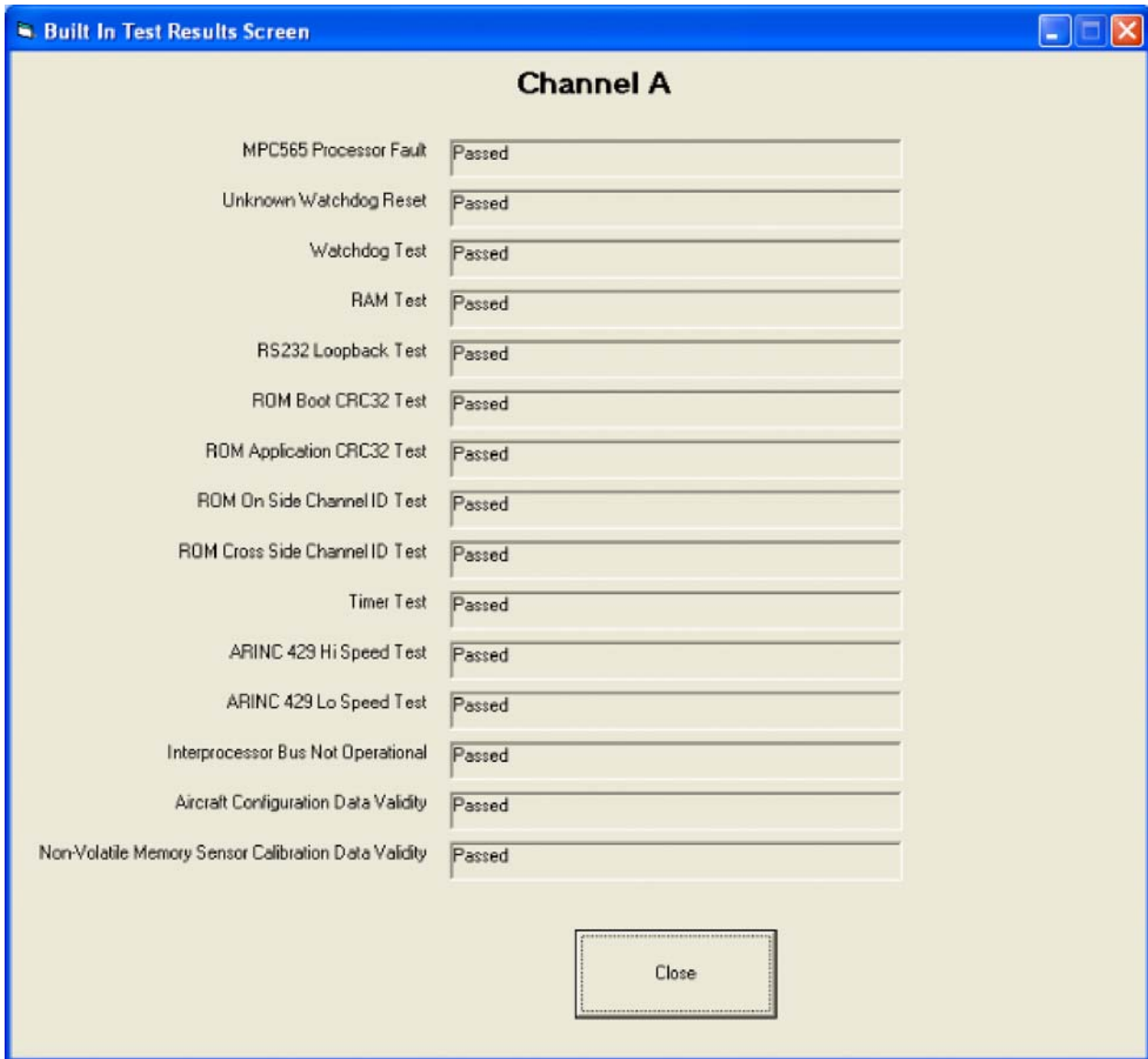


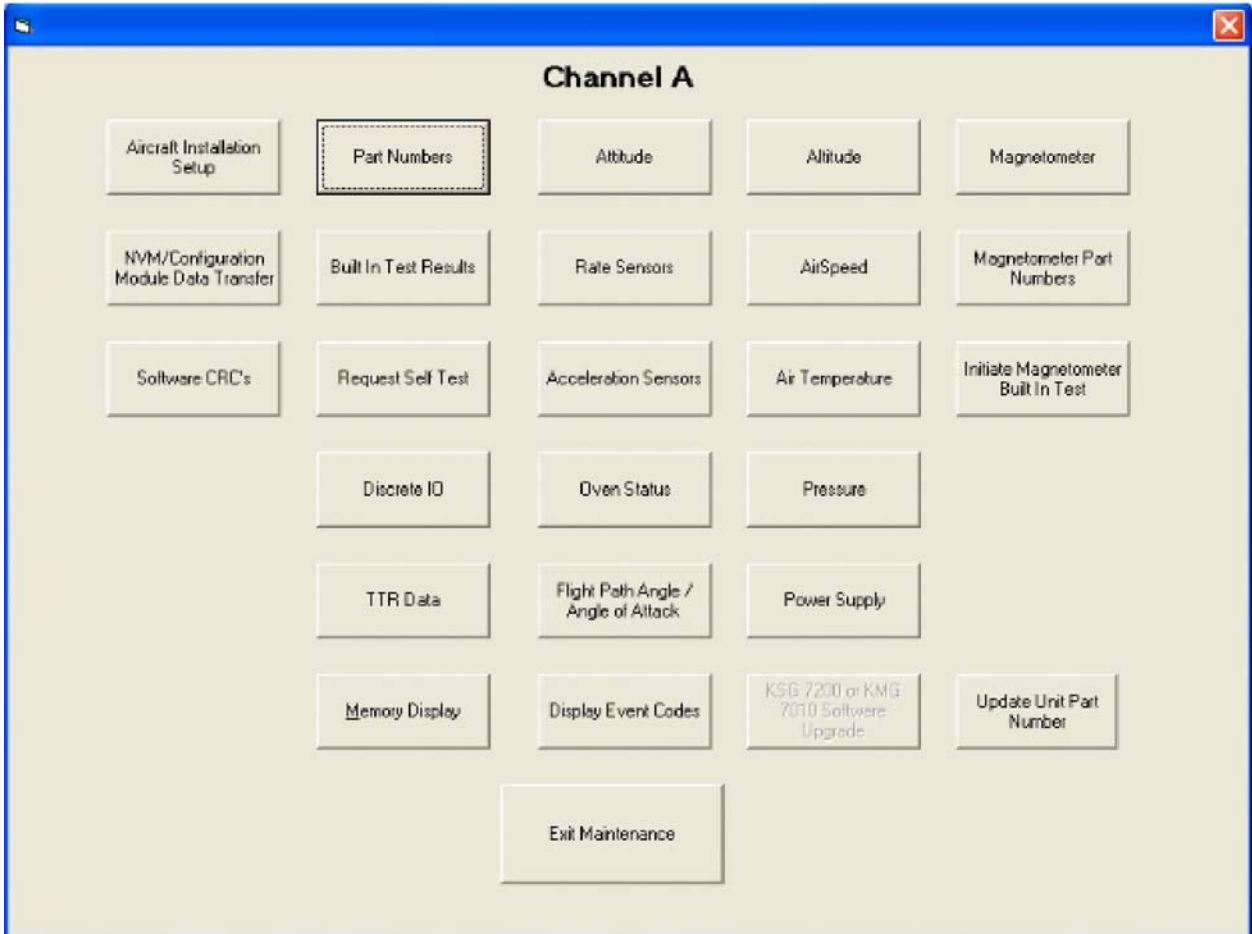
Figure 46. (Sheet 1 of 1) Built In Test Results Screen Window (Close)

- (2) Click the Close button to return to the Channel A (or B) Maintenance Selection window. Refer to Figure 47.

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Figure 47. (Sheet 1 of 1) Channel A (or B) Maintenance Selection Window (Part Numbers)

- (3) Click on the Part Numbers button.
- (4) Verify the following values are displayed on the Part Numbers Screen window.
 - (a) Refer to Figure 48 to identify Pilatus (60/75 mGauss settings).
 - (b) Refer to Figure 49 to identify Twin Otter Certification File 1a.
 - (c) Refer to Figure 50 to identify Twin Otter Certification File 2a.
 - (d) Refer to Figure 51 to identify Twin Otter Certification File 3a.
 - ADAHRS Channel = Channel A (or B as appropriate)
 - Unit Part Number = 065-00188-5103
 - Unit Serial Number = as appropriate
 - Boot Software Part Number = 722-20076-0000
 - Application Software Part Number = 722-29007-0000
 - Maintenance Software Part Number = 722-29008-0000
 - PLD Revision Number = 0
 - Current Date and Time = as appropriate (if receiving valid data from GPS)
 - Certification File ID =

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- 577 for Pilatus Certification File KSG_CERT_F577R4.cmf
- 1275 for Twin Otter Certification File KSG_CERT_F1275R4.cmf
- 1276 for Twin Otter Certification File KSG_CERT_F1276R4.cmf
- 1277 for Twin Otter Certification File KSG_CERT_F1277R4.cmf.
- Certification Version File Number = 4.

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Part Numbers Screen

Channel A
ADAHRS channel

Channel A
Unit Part Number
065-00188-5103
Unit Serial Number
B2017
Boot Software Part Number
722-20076-0000
Application Software Part Number
722-29007-0000
Maintenance Software Part Number
722-29008-0000
PLD Revision Number
0
Current Date and Time DD/MM/YYYY HH:MM:SS
00/00/2000 00:00:00
Certification File ID Number
577
Certification File Version Number
4
Close

ID-275193

Figure 48. (Sheet 1 of 1) Part Number Screen Window for Pilatus Certification File KSG_CERT_F577R4.cmf (60/75 mGauss settings)

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Part Numbers Screen

Channel A
ADAHRS channel

Channel A
Unit Part Number
065-00188-5103
Unit Serial Number
B2017
Boot Software Part Number
722-20076-0000
Application Software Part Number
722-29007-0000
Maintenance Software Part Number
722-29008-0000
PLD Revision Number
0
Current Date and Time DD/MM/YYYY HH:MM:SS
00/00/2000 00:00:00
Certification File ID Number
1275
Certification File Version Number
4
Close

ID-275194

Figure 49. (Sheet 1 of 1) Part Number Screen Window for Twin Otter Certification File KSG_CERT_F1275R4.cmf (Certification File 1a)

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Part Numbers Screen

Channel A
ADAHRS channel

Channel A
Unit Part Number
065-00188-5103
Unit Serial Number
B2017
Boot Software Part Number
722-20076-0000
Application Software Part Number
722-29007-0000
Maintenance Software Part Number
722-29008-0000
PLD Revision Number
0
Current Date and Time DD/MM/YYYY HH:MM:SS
00/00/2000 00:00:00
Certification File ID Number
1276
Certification File Version Number
4
Close

ID-275195

Figure 50. (Sheet 1 of 1) Part Number Screen Window for Twin Otter Certification File KSG_CERT_F1276R4.cmf (Certification File 2a)

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Part Numbers Screen

Channel A
ADAHRS channel

Channel A
Unit Part Number
065-00188-5103
Unit Serial Number
B2017
Boot Software Part Number
722-20076-0000
Application Software Part Number
722-29007-0000
Maintenance Software Part Number
722-29008-0000
PLD Revision Number
0
Current Date and Time DD/MM/YYYY HH:MM:SS
00/00/2000 00:00:00
Certification File ID Number
1277
Certification File Version Number
4
Close

ID-275196

Figure 51. (Sheet 1 of 1) Part Number Screen Window for Twin Otter Certification File KSG_CERT_F1277R4.cmf (Certification File 3a)

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- (5) Click the Close button to return to the Channel A (or B) Maintenance Selection window. Refer to Figure 52.

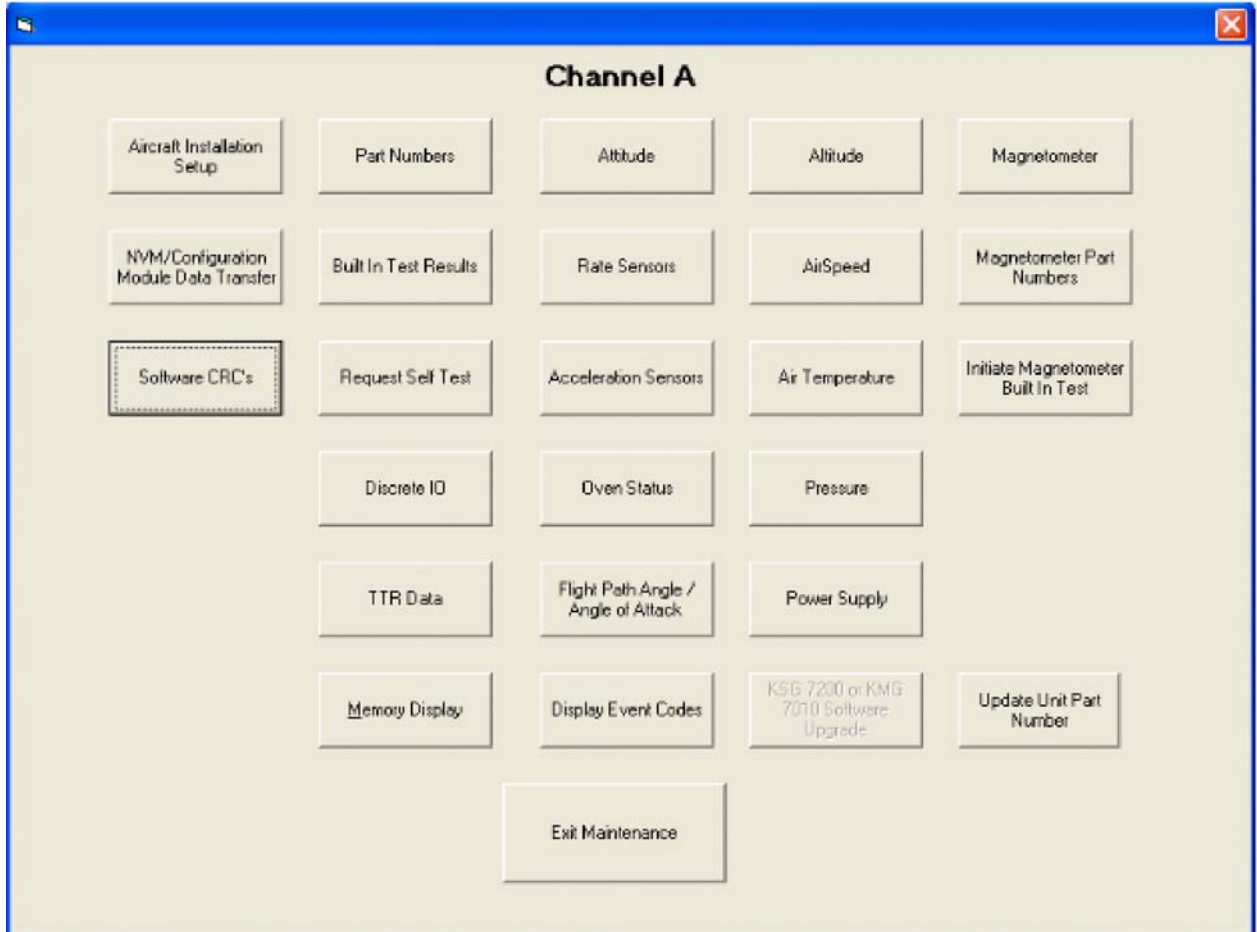


Figure 52. (Sheet 1 of 1) Channel A (or B) Maintenance Selection Window (Software CRC's)

- (6) Click on the Software CRC's button.
- (7) Verify the following values are displayed on the Software CRC checksums window. Refer to Figure 53:
- Boot CRC = 0781EA62
 - Application CRC = 84AF0B65
 - Maintenance CRC = C537420A.

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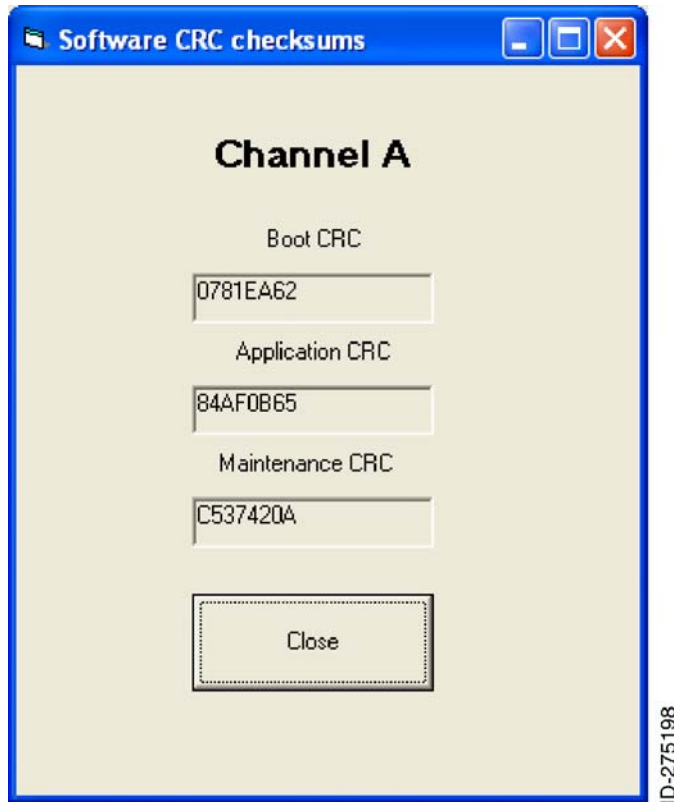


Figure 53. (Sheet 1 of 1) Software CRC Checksums Window

- (8) Click the Close button to return to the Channel A (or B) Maintenance Selection window.
- (9) Click the Exit Maintenance button to return to the KSG 7200 Maintenance Program window.
- (10) Click the Close button to exit the KSG 7200 Maintenance Program.

H. Update ADAHRS Channel B

- (1) Complete the instructions in Paragraph 3.B. thru Paragraph 3.G. for the ADAHRS Channel B.

I. Identification Procedure

- (1) Gain access to the ADAHRS unit as described in the applicable aircraft maintenance manual identified in Paragraph 1.K.
- (2) Attach a new software modification tag, PN 057-05287-0301, in place of the old tag to indicate the change to unit SW.v 03/01. The software modification tag is located on the upper right corner of the ADAHRS front (connector) plate.
- (3) Replace the serial number tags.
 - (a) Replace the main serial number tag with a new main serial number tag, PN 057-06060-1003. The main serial number tag is located in the lower right corner of the ADAHRS front (connector) plate.

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- (b) Replace the duplicate serial number tag with a new duplicate serial number tag, PN 057-06060-1002. The duplicate serial number tag is located on the front edge of the ADAHRS base plate.
- (c) Destroy the two serial tags removed from the KSG 7200 in Paragraph 3.I.(3)(a) and Paragraph 3.I.(3)(b). The tags should be destroyed to the point where they can no longer be attached or reused in any way.

J. Testing

- (1) Perform a functional test of the KSG 7200 ADAHRS unit as described in the applicable aircraft maintenance manual identified in Paragraph 1.K.