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DAI SI D4-057
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30-Jun-2006
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SERVICE INFORMATION NO. SI D4-057

> **NOTE:** SI´s are used **only**:
> 1) To distribute information from DAI to our customers.
> 2) To distribute applicable information / documents from our suppliers to our customers with additional information.
> Typically there is no revision service for SI´s. Each new information or change of that will be send along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

All Garmin G1000-equipped DA 40 D aircraft.

1.2 Subject:

G1000 System Software Version Update for G1000-equipped DA 40 D aircraft
ATA-Code: 34-00

1.3 Reason:

Garmin has issued the Software Service Bulletin No. 0612 Revision A

1.4 Information:

The Garmin SB describes the update to G1000 System Software Version 0370.14 including the optional configurations for GDL69, KTA870 TAS and TAS600 series. The hardware for all 3 of them is not yet approved for the DA 40 D. Software configuration for these systems has no operational benefit.

II. OTHERS

The Garmin Software Service Bulletin is attached to this SI.

In case of doubt contact Garmin or Diamond Aircraft Industries.

SOFTWARE SERVICE BULLETIN

NO.: 0612 Revision A

TO: Diamond Aircraft, Inc.

DATE: 6 June 2006

SUBJECT: G1000 System Software Version Update for G1000-equipped Diamond DA40D Aircraft

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PURPOSE

This G1000 Software Service Bulletin announces the availability of G1000 System Software Version 0370.14, for Diamond DA40D aircraft. This System SW Version Update contains the optional configurations needed to install the GDL69, KTA870 TAS, and TAS600 series options in the Diamond DA40D.

DESCRIPTION

This software service bulletin provides information required to update G1000-equipped Diamond DA40D aircraft with the new system software version.

APPROVAL

The engineering data contained in this software service bulletin are FAA approved. This bulletin does not provide installation authorization.

AFMS AND PILOT'S GUIDE CONSIDERATIONS

Flight Manual documentation as required per Diamond Aircraft

The following documents must be provided to the aircraft owner/operator. These documents describe the operation of the Garmin G1000 with system software version 0370.14:

Garmin Part Number	Document Title
190-00324-04	G1000 Cockpit Reference Guide for the Diamond DA40
190-00592-00	G1000 Pilot's Guide for the Diamond DA40

PRODUCT AFFECTED

All Garmin G1000 systems with system software version prior to 0370.14, installed in Diamond DA40D aircraft.

COMPLIANCE

OPTIONAL – This Software Service Bulletin may be accomplished at the discretion of the aircraft owner/operator.

REFERENCES

Garmin Part Number	Document Title
190-00303-04 Revision B or later	Garmin G1000 Line Maintenance and Configuration Manual
190-00355-04 Revision F or later	GDL 69/69A XM Satellite Radio Activation Instructions

The above referenced documents are available from www.garmin.com, within the Dealer section of the website.

MANPOWER

This Software Service Bulletin requires a maximum of one (1.0) hour labor including testing and return-to-service.

WARRANTY INFORMATION

This modification is not warranty reimbursable.

MODIFICATION INSTRUCTIONS

1. INTRODUCTION

1.1. Scope

These instructions present field upgrade procedures for G1000-equipped Diamond Model DA40D aircraft, which must be followed in order to upgrade an existing approved configuration of the system software to a newer approved configuration.

It is assumed that the person performing the upgrade is familiar with the aircraft and has a working knowledge of typical avionics systems.

NOTE

Instructions contained in this document are written specifically for upgrades to existing G1000 installations in Diamond Model DA40D aircraft.

1.2. System and Equipment Identification

❑ Verify what optional interface equipment listed in the following table exists (if any) on the airframe, for configuration.

Optional Equipment
Becker RA3502 ADF
Honeywell KN63 DME
L-3 Communications Stormscope
Garmin GDL69
Honeywell KTA870 TAS
Avidyne TAS600 Series Traffic Device

❑ To identify what G1000 System Software version is installed, do the steps that follow:

1. In the aircraft, turn the aircraft MASTER switch on.

2. Look at the MFD power-up screen (see following figure). In the upper right corner, the display shows 'Diamond DA40 TDI System XXXX.XX' .
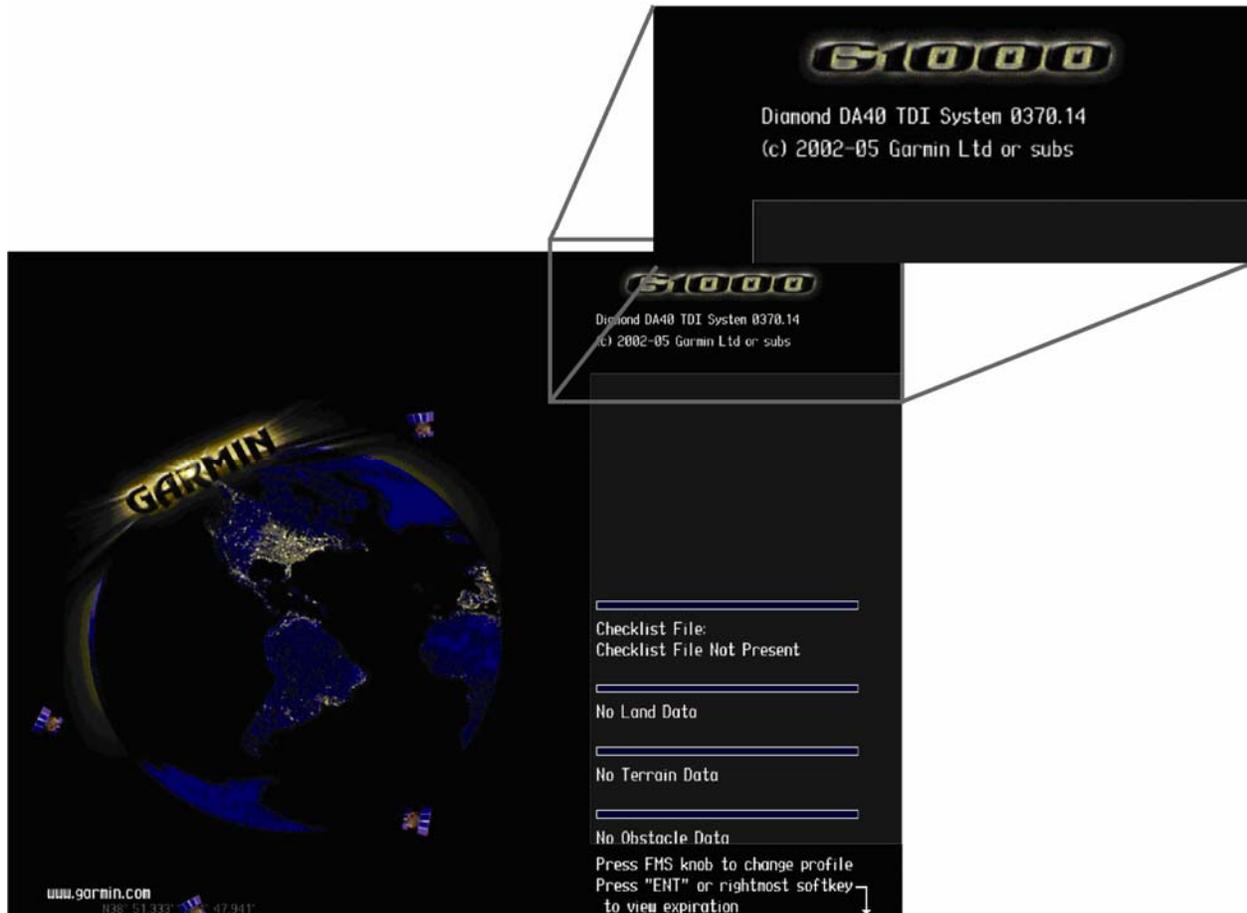
3. This 'System' number is the System Software Version. It correlates to the G1000 SW
    Loader Card used to load the software to the system. For example:

EXAMPLE:

System Software Version '**0370.14**' = Loader Card P/N 010-0**0370-14**

1.3. Required Materials and Equipment:

NOTE

Make sure that all of the required materials and equipment are on hand before
you begin the upgrade procedure.

❑ A ground power unit capable of supplying 28 VDC power to the aircraft systems and
    avionics

❑ Valid GPS Satellite signal sufficient to obtain a 3-dimensional GPS position (fix)

❑   G1000, DA42/DA40D Software Loader Card, P/N 010-00370-14

2. G1000 Software Upgrade Procedure

NOTE

All G1000 screen shots used in this document are intended to provide visual
reference only. All information depicted in screen shots, including software file
names, versions and part numbers, is subject to change and may not be up to
date. Please refer to the table in the Additional Information section of this
document to verify the software part number and version for each LRU.

2.1. System Power Up

Do the steps that follow to apply power to the G1000

1. Turn on the ground power unit, if used.

2. Turn on the battery switch.

3. Turn on the AVIONICS MASTER switch. At this moment, all G1000 equipment is
    receiving power. Optionally, the technician may remove power from the KAP 140, rate
    and backup-attitude gyros by pulling the circuit breakers labeled 'AP', 'HORIZON', and
    'RATE GYRO'.

2.2. MFD and PFD Software Load

1. Disengage the MFD and PFD circuit breakers.

2. Insert the correct G1000 Loader Card into the MFD top card slot (located on the MFD).

3. While holding the ENT key on the MFD, engage the MFD circuit breaker.

4. When the words `INITIALIZING SYSTEM` appear in the upper left corner of the MFD,
    release the ENT key.

5. Press the ENT key to acknowledge the following prompt (NOTE: A softkey labeled 'YES' appears in the lower right corner and may be used in lieu of the ENT key):

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
```

6. The following screen is displayed.

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
UPDATING SYSTEM FILES.  DO NOT TURN OFF POWER ! ! !
THIS MAY TAKE UP TO 10 MINUTES
```

7. New software is loaded to the MFD. When complete, the MFD starts in configuration mode.

8. Remove the G1000 Loader Card from the MFD and insert it into the top card slot on the PFD.

9. While holding the ENT key on the PFD, engage the PFD circuit breaker.

10. When the words `INITIALIZING SYSTEM` appear in the upper left corner of the PFD, release the ENT key.

11. Press the ENT key to acknowledge the following prompt (NOTE: A softkey labeled 'YES' appears in the lower right corner and may be used in lieu of the ENT key):

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
```

12. The following screen is displayed.

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
UPDATING SYSTEM FILES.  DO NOT TURN OFF POWER ! ! !
THIS MAY TAKE UP TO 10 MINUTES
```
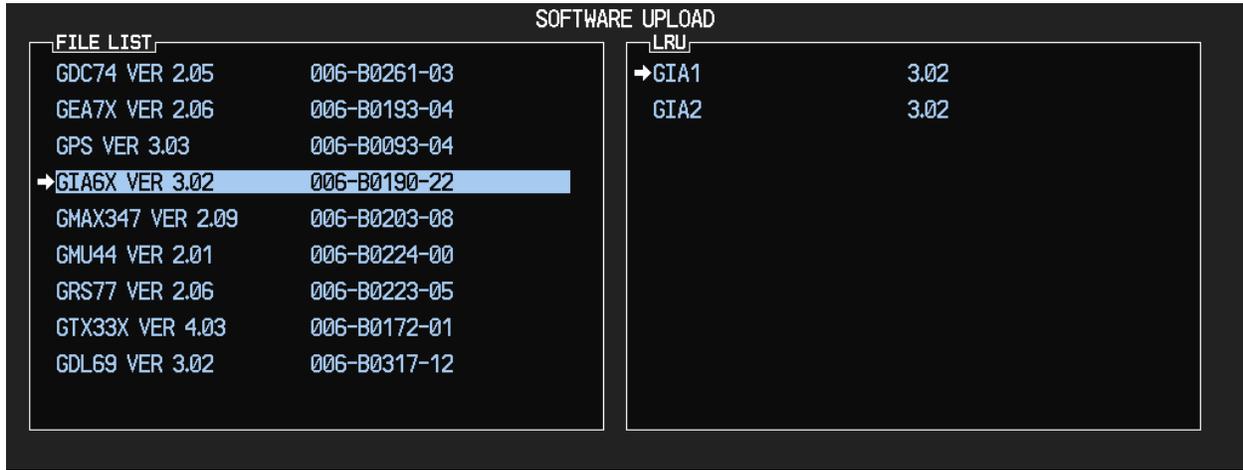
13. New software is loaded to the PFD.

14. When PFD update is complete, it starts in the configuration mode. Do not remove power.

NOTE

For the rest of the software/configuration procedure, do not operate the MFD while loading software or configuration files unless specifically instructed to do so. A failed or cancelled load may result.
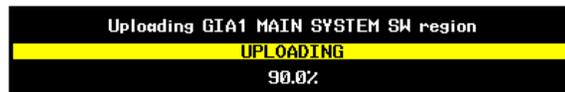
2.3. GIA Software Load

1. Go to the Software Upload page using the small FMS knob.

2. Activate the cursor and select the GIA software file from the file list. Verify that GIA1 and GIA2 appear in the LRU field as shown:

```
                            SOFTWARE UPLOAD
 ┌FILE LIST┐                        ┌LRU┐
   GDC74 VER 2.05    006-B0261-03    ➡GIA1          3.02
   GEA7X VER 2.06    006-B0193-04     GIA2          3.02
   GPS VER 3.03      006-B0093-04
 ➡GIA6X VER 3.02    006-B0190-22
   GMAX347 VER 2.09  006-B0203-08
   GMU44 VER 2.01    006-B0224-00
   GRS77 VER 2.06    006-B0223-05
   GTX33X VER 4.03   006-B0172-01
   GDL69 VER 3.02    006-B0317-12
```

3. If both GIA1 and GIA2 display SW version 3.02 in the LRU field as shown above, skip the following steps 4 – 8 and proceed to Section 2.4 GPS Software Load; otherwise proceed to the following step.

4. Press the LOAD softkey.

5. Select OK and press ENT to acknowledge the following prompt:

```
        Begin File Upload?


        OK    or    CANCEL
```
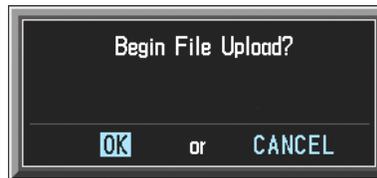
6. The main system software for GIA1 begins to load. GIA2 software loads immediately after GIA1 software finishes loading. Monitor the upload status as it progresses:
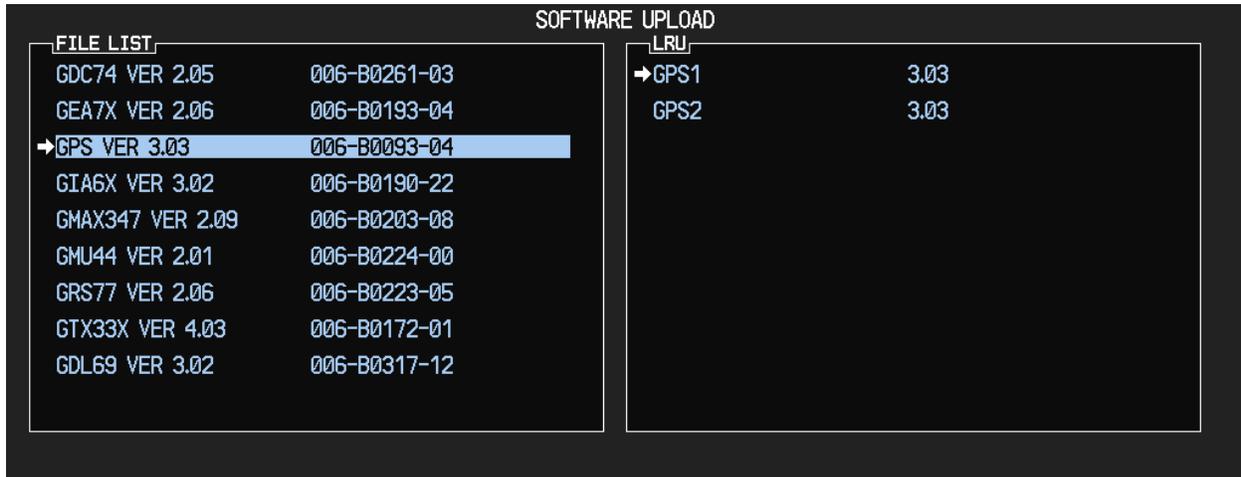
```
    Uploading GIA1 MAIN SYSTEM SW region
              UPLOADING
                90.0%
```

7. After the files finish loading, press ENT to acknowledge the following prompt:

```
        FILE UPLOAD COMPLETE


              OK
```
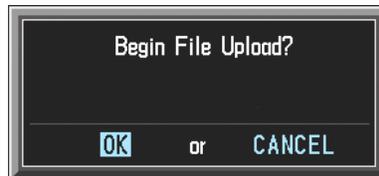
8. View the SUMMARY field and verify that both GIA1 and GIA2 software uploading is 'COMPLETED'.
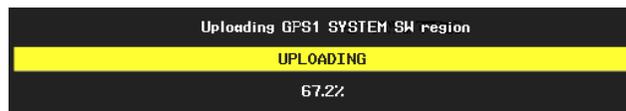
2.4. GPS Software Load

1. Activate the cursor and Select the GPS software file from the file list. Make sure that GPS1 and GPS2 appear in the LRU field as shown:

```
                          SOFTWARE UPLOAD
┌FILE LIST┐                              ┌LRU┐
  GDC74 VER 2.05      006-B0261-03      ➤GPS1           3.03
  GEA7X VER 2.06      006-B0193-04       GPS2           3.03
➤GPS VER 3.03         006-B0093-04
  GIA6X VER 3.02      006-B0190-22
  GMAX347 VER 2.09    006-B0203-08
  GMU44 VER 2.01      006-B0224-00
  GRS77 VER 2.06      006-B0223-05
  GTX33X VER 4.03     006-B0172-01
  GDL69 VER 3.02      006-B0317-12
```

2. If both GPS1 and GPS2 display SW version 3.03 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.5 GMA 1347 Audio Panel Software; otherwise proceed to the following step.

3. Press the LOAD softkey.

4. Select OK and press ENT to acknowledge the following prompt:

```
        Begin File Upload?


       OK    or    CANCEL
```

5. The system software for GPS1 begins to load. GPS2 software loads immediately after GPS1 software finishes loading. Monitor the upload status as it progresses:
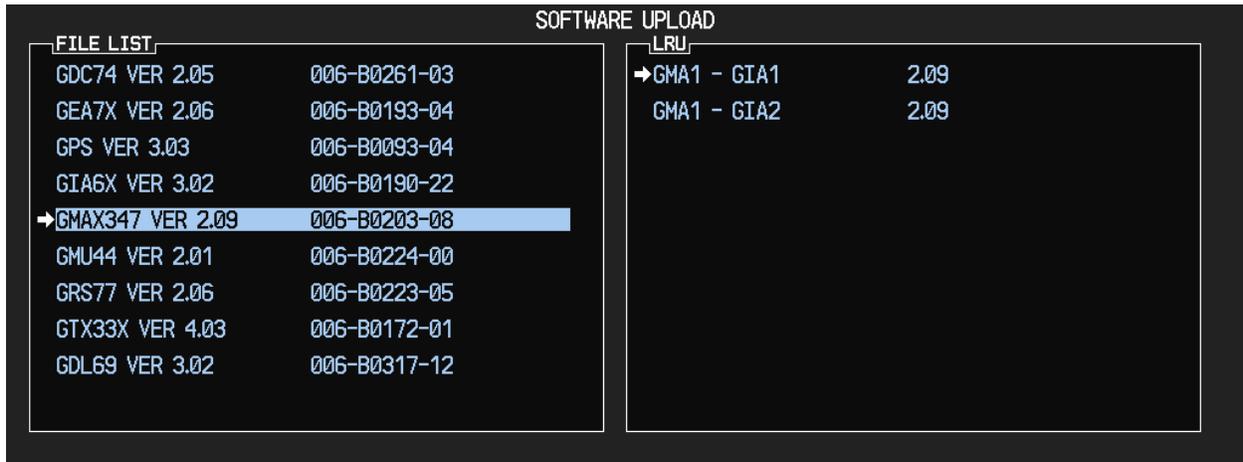
```
    Uploading GPS1 SYSTEM SW region
              UPLOADING
                67.2%
```

6. After the files finish loading, press ENT to acknowledge the following prompt:

```
       FILE UPLOAD COMPLETE


               OK
```

7. View the SUMMARY field and verify that both GPS1 and GPS2 System SW uploads are 'COMPLETED'.

2.5. GMA 1347 Audio Panel Software

1. Activate the cursor and highlight the GMA software file from the file list. Make sure that both data paths to the GMA1 through GIA1 and GIA2 appear in the LRU field as shown:

```
                        SOFTWARE UPLOAD
 ┌FILE LIST┐                          ┌LRU┐
  GDC74 VER 2.05      006-B0261-03     ➤GMA1 - GIA1      2.09
  GEA7X VER 2.06      006-B0193-04      GMA1 - GIA2      2.09
  GPS VER 3.03        006-B0093-04
  GIA6X VER 3.02      006-B0190-22
 ➤GMAX347 VER 2.09    006-B0203-08
  GMU44 VER 2.01      006-B0224-00
  GRS77 VER 2.06      006-B0223-05
  GTX33X VER 4.03     006-B0172-01
  GDL69 VER 3.02      006-B0317-12
```

2. If both data paths to the GMA1 through GIA1 and GIA2 display SW version 2.09 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.6 GDC 74A Air Data Computer Software; otherwise proceed to the following step.

3. Press the LRU softkey. Select the GMA1 - GIA1 data path to load software. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
        Begin File Upload?


      OK      or    CANCEL
```
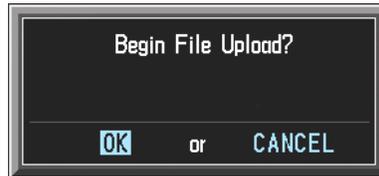
5. The system software for the GMA 1347 begins to load. Monitor the upload status as it progresses:
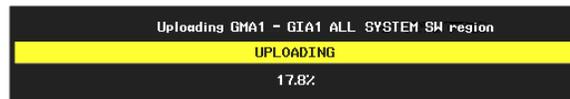
```
  Uploading GMA1 - GIA1 ALL SYSTEM SW region
                UPLOADING
                  17.8%
```

6. After the file finishes loading, press ENT to acknowledge the following prompt:

```
     FILE UPLOAD COMPLETE


          OK
```
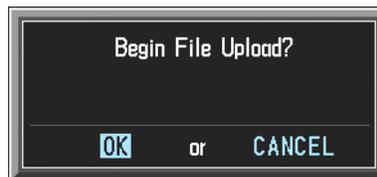
7. View the SUMMARY field to verify the System SW upload is 'COMPLETED'.
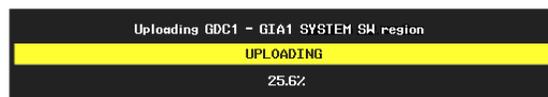
2.6. GDC 74A Air Data Computer Software

1. Highlight the GDC software file from the file list. Make sure that GDC1 to GIA1 data path appears in the LRU field as shown:

```
                          SOFTWARE UPLOAD
 ┌FILE LIST┐                              ┌LRU┐
 ➜GDC74 VER 2.05      006-B0261-03        ➜GDC1 - GIA1        2.05
  GEA7X VER 2.06      006-B0193-04
  GPS VER 3.03        006-B0093-04
  GIA6X VER 3.02      006-B0190-22
  GMAX347 VER 2.09    006-B0203-08
  GMU44 VER 2.01      006-B0224-00
  GRS77 VER 2.06      006-B0223-05
  GTX33X VER 4.03     006-B0172-01
  GDL69 VER 3.02      006-B0317-12
```
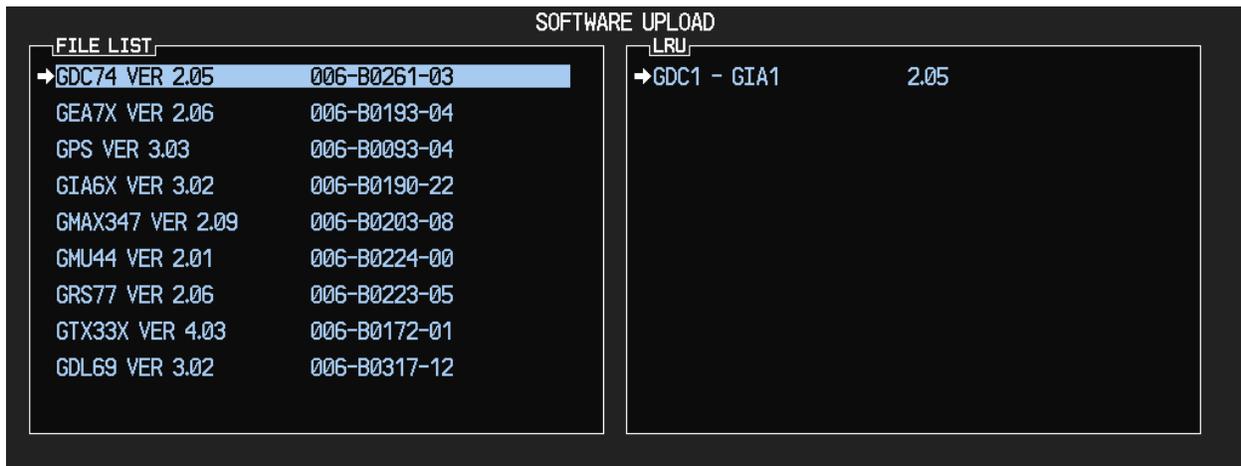
2. If the GDC1 to GIA1 data path displays SW version 2.05 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.7 GRS 77 AHRS Software; otherwise proceed to the following step.

3. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
        Begin File Upload?


        OK      or      CANCEL
```

5. The software for the GDC 74A begins to load. There are two files that load to the GDC 74A: "System SW region" and "FPGA region". These load one after the other, automatically. Monitor the upload status as it progresses:
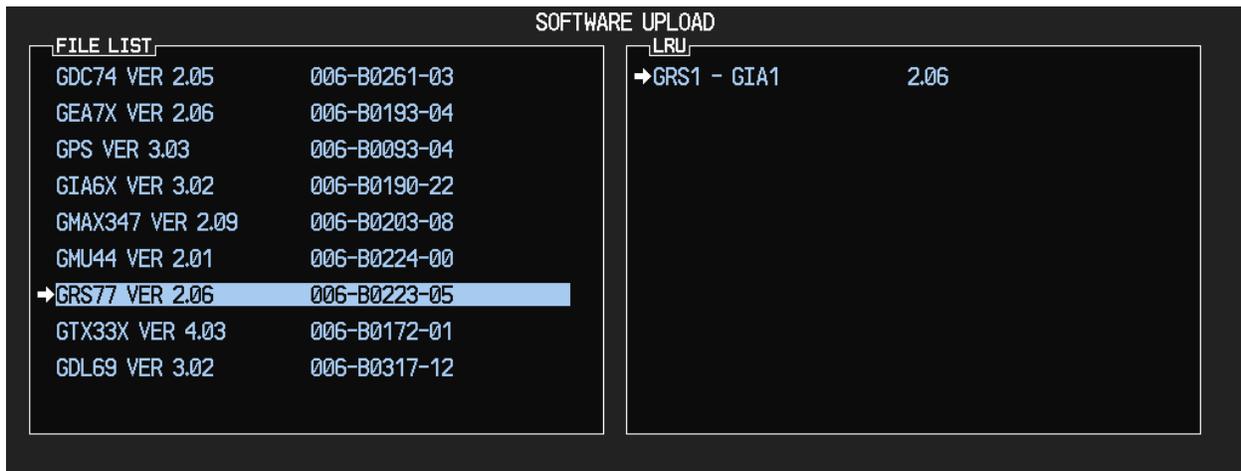
```
        Uploading GDC1 - GIA1 SYSTEM SW region
                    UPLOADING
                      25.6%
```

6. After the files finish loading, press ENT to acknowledge the following prompt:

```
        FILE UPLOAD COMPLETE


                  OK
```
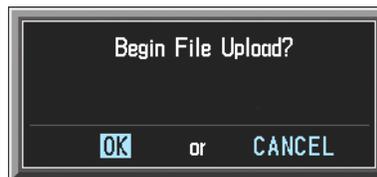
7. View the SUMMARY field to verify that both the System SW region and the FPGA region uploads are 'COMPLETED'.

2.7. GRS 77 AHRS Software

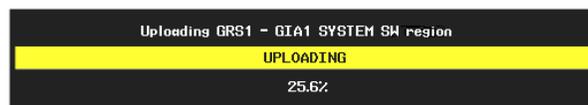1. Highlight the GRS software file from the file list. Make sure that the GRS1 to GIA1 data path appears in the LRU field as shown:

```
                        SOFTWARE UPLOAD
 ┌FILE LIST┐                          ┌LRU┐
  GDC74 VER 2.05      006-B0261-03    ➔GRS1 - GIA1        2.06
  GEA7X VER 2.06      006-B0193-04
  GPS VER 3.03        006-B0093-04
  GIA6X VER 3.02      006-B0190-22
  GMAX347 VER 2.09    006-B0203-08
  GMU44 VER 2.01      006-B0224-00
 ➔GRS77 VER 2.06      006-B0223-05
  GTX33X VER 4.03     006-B0172-01
  GDL69 VER 3.02      006-B0317-12
```

2. If the GRS1 to GIA1 data path displays SW version 2.06 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.8 GMU 44 Magnetometer Software; otherwise proceed to the following step.

3. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
          Begin File Upload?


          OK    or   CANCEL
```

5. The software for the GRS 77 begins to load. There are two files that load to the GRS 77: "System SW region" and "FPGA region". These load one after the other, automatically. Monitor the upload status as it progresses:
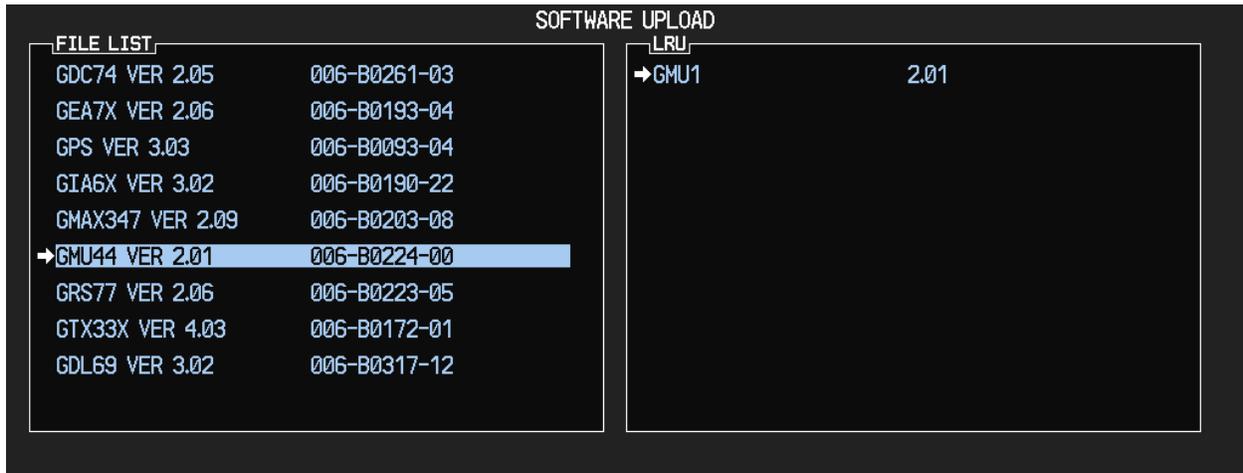
```
   Uploading GRS1 - GIA1 SYSTEM SW region
                UPLOADING
                  25.6%
```

6. After the files finish loading, press the ENT key to acknowledge the following prompt:

```
        FILE UPLOAD COMPLETE


               OK
```
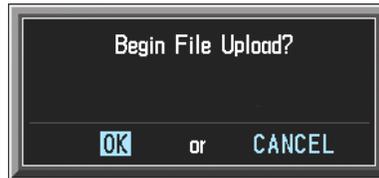
7. View the SUMMARY field to verify that both the System SW region and the FPGA region uploads are 'COMPLETED'.
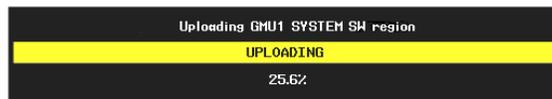
2.8. GMU 44 Magnetometer Software

1. Highlight the GMU software file from the file list. Make sure that GMU1 appears in the LRU field as shown:

```
                              SOFTWARE UPLOAD
  ┌FILE LIST┐                               ┌LRU┐
   GDC74 VER 2.05      006-B0261-03          ➔GMU1              2.01
   GEA7X VER 2.06      006-B0193-04
   GPS VER 3.03        006-B0093-04
   GIA6X VER 3.02      006-B0190-22
   GMAX347 VER 2.09    006-B0203-08
  ➔GMU44 VER 2.01      006-B0224-00
   GRS77 VER 2.06      006-B0223-05
   GTX33X VER 4.03     006-B0172-01
   GDL69 VER 3.02      006-B0317-12
```

2. If GMU1 displays SW version 2.01 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.9 GTX 33 Transponder Software; otherwise proceed to the following step.

3. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
          Begin File Upload?


          OK    or    CANCEL
```

5. The software for the GMU 44 begins to load. There are two files that load to the GMU 44: "System SW region" and "FPGA region". These load one after the other, automatically. Monitor the upload status as it progresses:
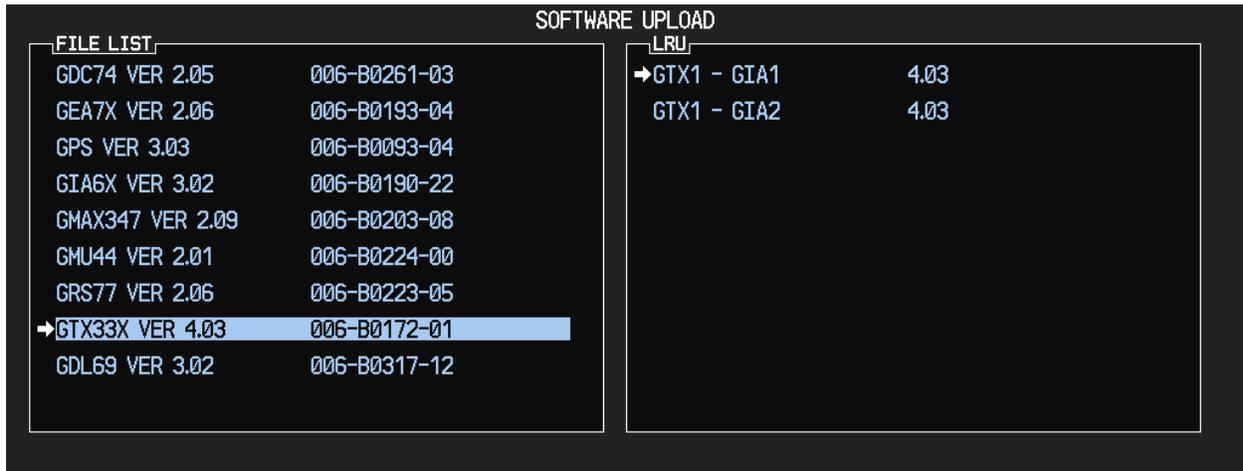
```
     Uploading GMU1 SYSTEM SW region
              UPLOADING
                25.6%
```

6. After the files finish loading, press the ENT key to acknowledge the following prompt:

```
          FILE UPLOAD COMPLETE


                OK
```
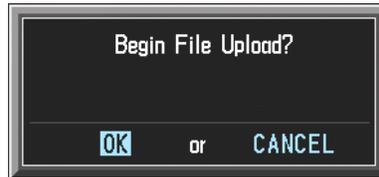
7. View the SUMMARY field to verify that both the System SW region and the FPGA region uploads are 'COMPLETED'.
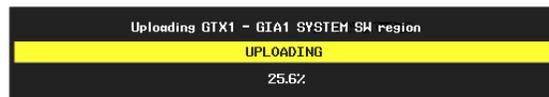
2.9. GTX 33 Transponder Software

1. Highlight the GTX software file from the file list. Make sure that both data paths to GTX1 through GIA1 and GIA 2 appear in the LRU field as shown:

```
                        SOFTWARE UPLOAD
 ┌FILE LIST┐                        ┌LRU┐
   GDC74 VER 2.05    006-B0261-03    ➡GTX1 - GIA1       4.03
   GEA7X VER 2.06    006-B0193-04     GTX1 - GIA2       4.03
   GPS VER 3.03      006-B0093-04
   GIA6X VER 3.02    006-B0190-22
   GMAX347 VER 2.09  006-B0203-08
   GMU44 VER 2.01    006-B0224-00
   GRS77 VER 2.06    006-B0223-05
  ➡GTX33X VER 4.03   006-B0172-01
   GDL69 VER 3.02    006-B0317-12
```

2. If both data paths to GTX1 through GIA1 and GIA 2 display SW version 4.03 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.10 GEA 71 Engine/Airframe Unit Software; otherwise proceed to the following step.

3. Press the LRU softkey. Select the GTX1 - GIA1 data path to load software. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
        Begin File Upload?


         OK    or    CANCEL
```

5. The system software for the GTX 33 begins to load. Monitor the upload status as it progresses:

```
   Uploading GTX1 - GIA1 SYSTEM SW region
              UPLOADING
                25.6%
```

6. After the file finishes loading, press ENT to acknowledge the following prompt:

```
      FILE UPLOAD COMPLETE


              OK
```
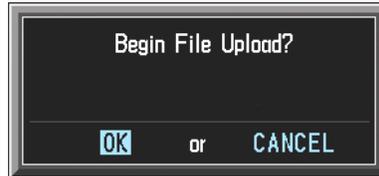
7. View the SUMMARY field to verify that the System SW region upload is 'COMPLETED'.

2.10. GEA 71 Engine/Airframe Unit Software

1. Highlight the GEA software file from the file list. Make sure that both data paths to GEA1 through GIA1 and GIA 2 appear in the LRU field as shown:

```
                          SOFTWARE UPLOAD
 ┌FILE LIST┐                           ┌LRU┐
  GDC74 VER 2.05      006-B0261-03     ➡GEA1 - GIA1      2.06
 ➡GEA7X VER 2.06      006-B0193-04      GEA1 - GIA2      2.06
  GPS VER 3.03        006-B0093-04
  GIA6X VER 3.02      006-B0190-22
  GMAX347 VER 2.09    006-B0203-08
  GMU44 VER 2.01      006-B0224-00
  GRS77 VER 2.06      006-B0223-05
  GTX33X VER 4.03     006-B0172-01
  GDL69 VER 3.02      006-B0317-12
```
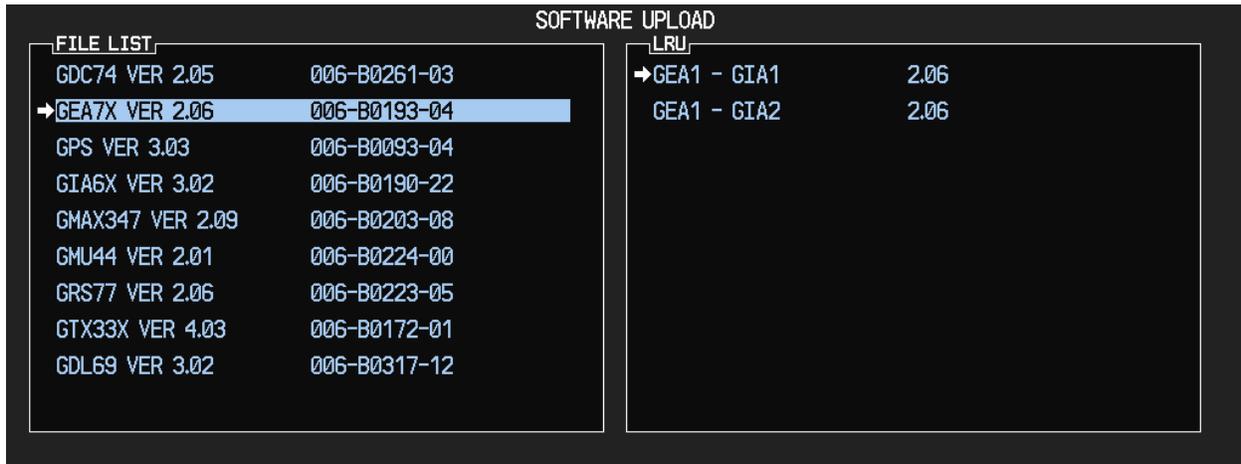
2. If both data paths to GEA1 through GIA1 and GIA 2 display SW version 2.06 in the LRU field as shown above, skip the following steps 3 – 7 and proceed to Section 2.11 GDL 69 Data Link Software; otherwise proceed to the following step.

3. Press the LRU softkey. Select the GEA - GIA1 data path to load software. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
        Begin File Upload?

        OK     or    CANCEL
```

5. The system software for the GEA 71 begins to load. Monitor the upload status as it progresses:

```
   Uploading GEA1 - GIA1 SYSTEM SW region
              UPLOADING
                25.6%
```

6. After the file finishes loading, press ENT to acknowledge the following prompt:

```
      FILE UPLOAD COMPLETE

              OK
```

7. View the SUMMARY field to verify that the System SW upload is 'COMPLETED'.

2.11. GDL 69 Data Link Unit Software
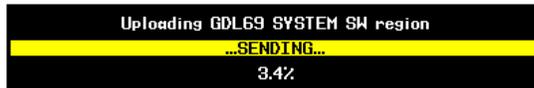
1. Highlight the GDL software file from the file list. Make sure that GDL69 appears in the LRU field as shown:

```
                          SOFTWARE UPLOAD
 ┌FILE LIST┐                          ┌LRU┐
   GDC74 VER 2.05      006-B0261-03    ➜GDL69           3.02.00
   GEA7X VER 2.06      006-B0193-04
   GPS VER 3.03        006-B0093-04
   GIA6X VER 3.02      006-B0190-22
   GMAX347 VER 2.09    006-B0203-08
   GMU44 VER 2.01      006-B0224-00
   GRS77 VER 2.06      006-B0223-05
   GTX33X VER 4.03     006-B0172-01
 ➜GDL69 VER 3.02       006-B0317-12
```
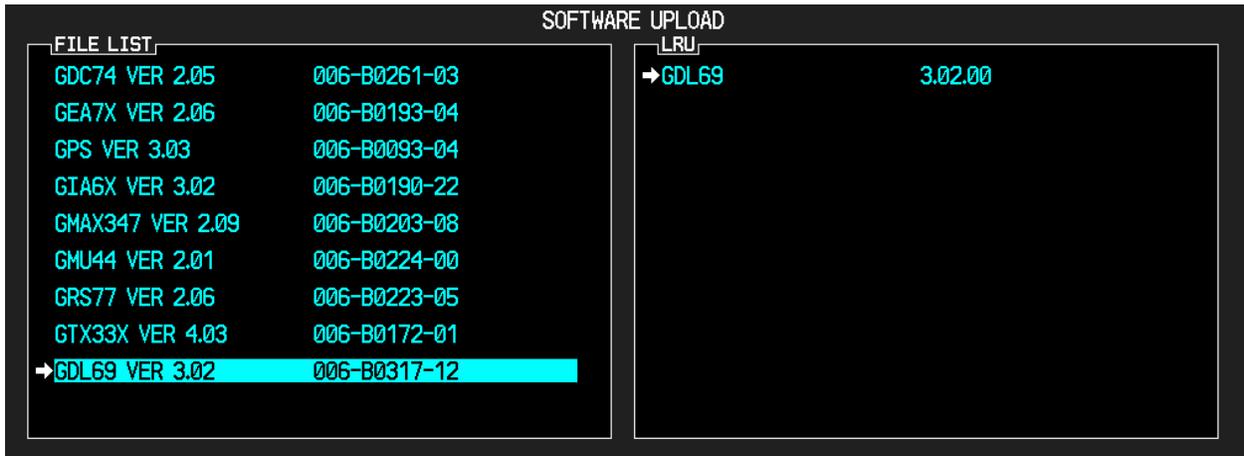
2. If GDL69 displays SW version 3.02.00 in the LRU field as shown above, skip steps 3 –8 and proceed to Section 3 Configuration File Upgrade; otherwise proceed to the following step.

3. Press the LOAD softkey.

4. Select OK and press the ENT key to acknowledge the following prompt:

```
        Begin File Upload?


    OK      or     CANCEL
```
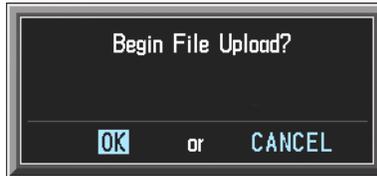
5. The software for the GDL 69 begins to load. There are three files that load to the GDL 69: "System SW region", "Kernel SW region", and "Loader SW region". These load one after the other, automatically. Monitor the upload status as it progresses:
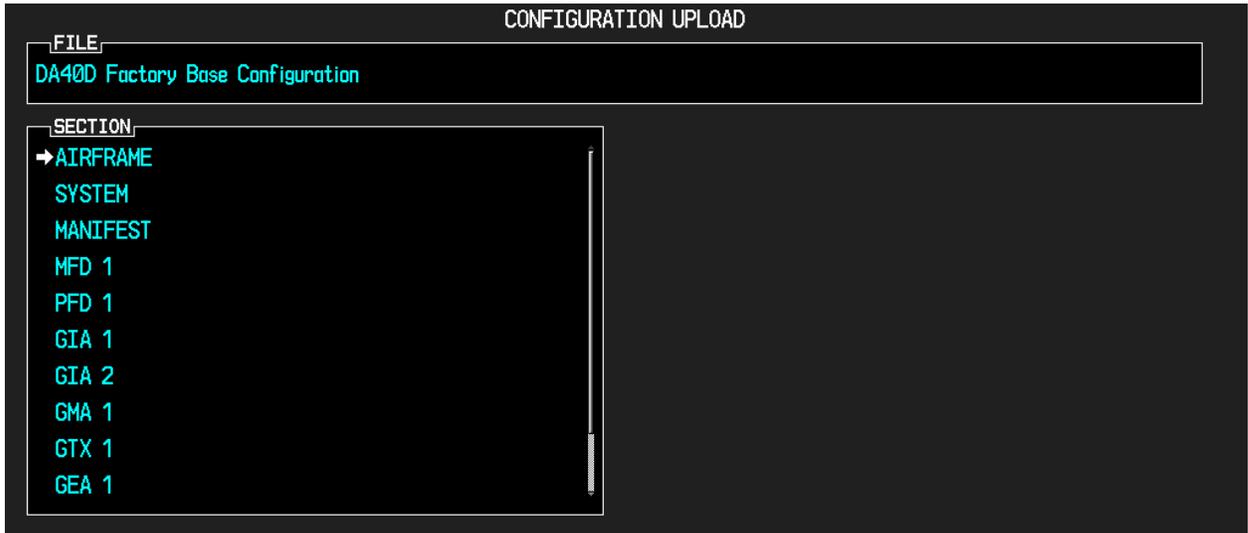
```
   Uploading GDL69 SYSTEM SW region
            ...SENDING...
               3.4%
```

6. After the files finish loading, press ENT to acknowledge the following prompt:

```
      FILE UPLOAD COMPLETE


              OK
```

7. View the SUMMARY field to verify that the 3 software uploads are 'COMPLETED'.

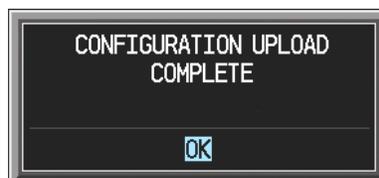8. De-activate the cursor.

3. Configuration File Upgrade

3.1. Initial G1000 Configuration

1. Go to the Configuration Upload page using the FMS knob.

2. Activate cursor and rotate the FMS knob once to activate the FILE menu.

3. Select 'DA40D Factory Base Configuration' and press ENT.

4. Press the LOAD ALL softkey.

5. Select YES and press the ENT key to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE', then de-activate the cursor.

3.2. Optional Equipment Configuration
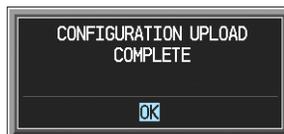
3.2.1. DA42/DA40D Option – ADF

If the DA40D aircraft being updated is equipped with the Becker model RA3502 ADF, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

1. Go to the Configuration Upload page using the FMS knob.
2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.
3. Select '**DA42/DA40D ADF Option**' and press ENT.
4. Press the LOAD ALL softkey.
5. Select YES and press ENT to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.

3.2.2. DA42/DA40D Option - DME

If the DA40D aircraft being updated is equipped with the Honeywell model KN63 DME, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

1. Go to the Configuration Upload page using the FMS knob.

2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.

3. Select '**DA42/DA40D DME Option**' and press ENT.

4. Press the LOAD ALL softkey.

5. Select YES and press ENT to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.
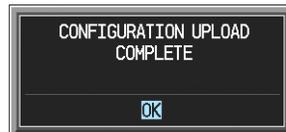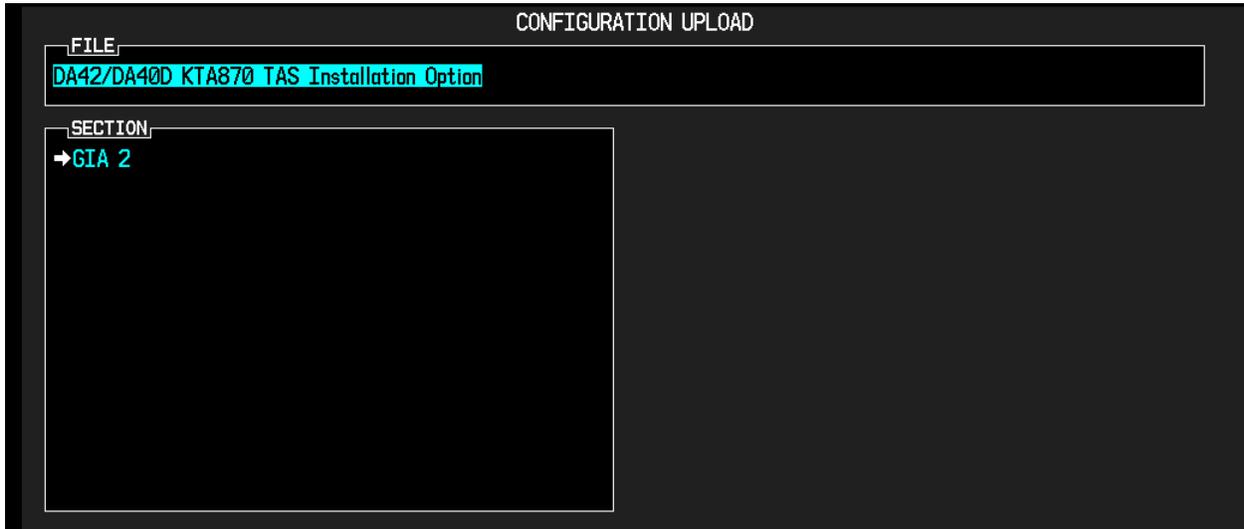
3.2.3. DA42/DA40D Option – GDL69

If the DA40D aircraft being updated is equipped with a GDL69, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

1. Go to the Configuration Upload page using the FMS knob.

2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.

3. Select '**DA42/DA40D GDL69 Option**' and press ENT.

4. Press the LOAD ALL softkey.

5. Select YES and press ENT to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.

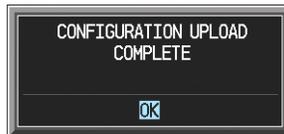### 3.2.4. DA42/DA40D Option – KTA870 TAS

If the DA40D aircraft being updated is equipped with a Honeywell model KTA870 TAS, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

1. Go to the Configuration Upload page using the FMS knob.
2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.
3. Select '**DA42/DA40D KTA870 TAS Installation Option**' and press ENT.
4. Press the LOAD ALL softkey.
5. Select YES and press ENT to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.

3.2.5. DA42/DA40D Option – TAS600

If the DA40D aircraft being updated is equipped with an Avidyne model TAS600 Series traffic device, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

```
                            CONFIGURATION UPLOAD
  ┌FILE┐
  DA42/DA40D TAS600 Series Installation Option

  ┌SECTION┐
  ➡GIA 2
```

1. Go to the Configuration Upload page using the FMS knob.

2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.

3. Select '**DA42/DA40D TAS600 Installation Option**' and press ENT.

4. Press the LOAD ALL softkey.

5. Select YES and press ENT to acknowledge the following prompt:

```
   Start Configuration Upload?
     YES      or      NO
```

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

```
   CONFIGURATION UPLOAD
        COMPLETE

           OK
```

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.

3.2.6. DA42/DA40D Option - Stormscope

If the DA40D aircraft being updated is equipped with an L-3 Communications model Stormscope, follow this procedure to configure the G1000. If the aircraft is not equipped with this option, this procedure MUST be skipped.

1. Go to the Configuration Upload page using the FMS knob.

2. Activate cursor and rotate the small FMS knob once to activate the FILE menu.

3. Select '**DA42/DA40D Stormscope Option**' and press ENT.

4. Press the LOAD ALL softkey.

5. Select YES and press ENT to acknowledge the following prompt:

6. Monitor the status of the upload. When the upload is finished, press the ENT key to acknowledge the following confirmation:

7. View the SUMMARY field and make sure that all items are 'COMPLETE'.

4. TESTING PROCEDURE

4.1. Software Load Confirmation

1. Go to the System Status page using the small FMS knob. Activate the cursor and toggle to the LRU window.

2. Highlight each of the following items in the LRU window, and verify that the software part number and version matches the table in the Additional Information section of this document.

LRU	SW VER & P/N OK	LRU	SW VER & P/N OK
GDC1 – GIA1	_____	GDC1 FPGA	_____
GDL 69	_____	GEA1 – GIA1	_____
GEA1 – GIA2	_____	GIA1	_____
GIA2	_____	GMA1 – GIA1	_____
GMA1 – GIA2	_____	GMU1	_____
GMU1 FPGA	_____	GPS1	_____
GPS2	_____	GRS1 – GIA1	_____
GRS1 FPGA	_____	GTX1 – GIA1	_____
GTX1 – GIA2	_____	MFD1	_____
PFD1	_____		

3. De-activate the cursor.

NOTE

If any software version and/or part number does not match those specified by the table in the Additional Information section of this document, or if the software is not successfully loaded, DO NOT continue with post-installation procedures. Troubleshoot and resolve the issue (refer to the G1000 Line Maintenance and Configuration Manual P/N 190-00303-04) before continuing.

4.2. Software Operational Test

Remove the G1000 Loader Card from the PFD and set it aside.

The G1000 system is tested while operating in the normal mode. Restart the PFD by cycling the PFD circuit breaker to start the display in the normal mode. Cycle power to the MFD in the same manner.

1. Look at the MFD power-up screen. In the upper right corner, the display shows 'Diamond DA40 TDI System XXXX.XX':

2. This 'System' number is the System Software Version. It correlates to the G1000 SW Loader Card used to load the software to the system:

EXAMPLE:

System Software Version '**0370.14**' = Loader Card P/N 010-0**0370-14**

3. Verify that the System Software Version is correct.

4. Press the ENT key to acknowledge the agreement on the MFD (the rightmost softkey may also be used to acknowledge the agreement).

NOTE

In the normal operating mode, data fields that are invalid have large red X's through them. A valid field does not display a red X.

5. Allow the displays to initialize for approximately one minute. The GDC 74A and GRS 77/GMU 44 require a longer initialization period than do other LRUs. During normal operation, this causes the attitude, heading, airspeed, altitude, vertical speed, and OAT fields to be invalid during the first 40-60 seconds of PFD power-up.

6. Verify that no 'Manifest' (software version mismatch) errors appear when the ALERTS softkey is pressed.

7. Check that all COM/NAV fields are valid in the top corners of the PFD and MFD.

8. Check that attitude, heading, altitude, airspeed, vertical speed, TAS, and OAT fields are valid on the PFD.

9. Check that engine and airframe instruments are valid on the MFD.

10. Push the red DISPLAY BACKUP button on the GMA 1347. Verify both displays enter reversion mode: both should have valid attitude, altitude, airspeed, vertical speed, and engine instruments.

11. De-activate reversion mode by pushing the DISPLAY BACKUP button again.
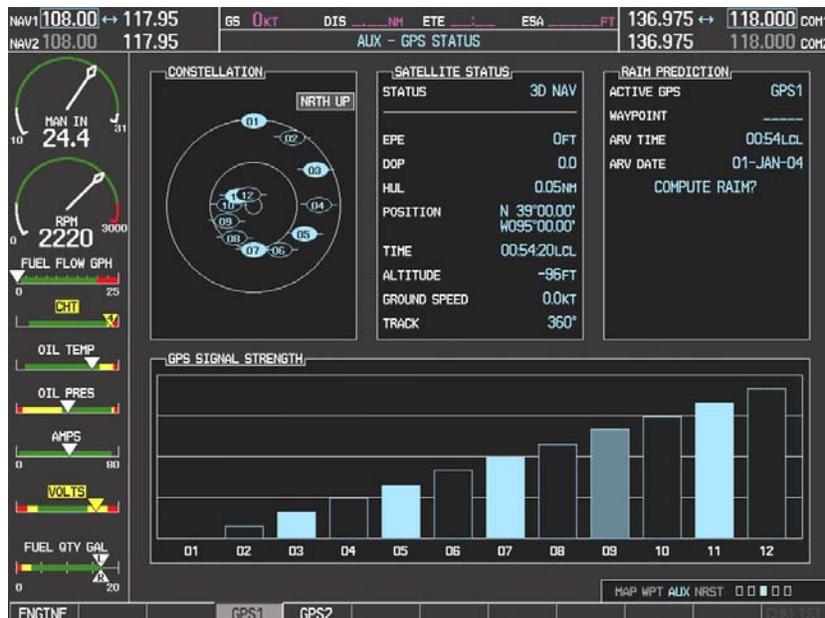
12. The GIA 63 units should normally acquire a 3D GPS navigation solution within 5 to 10 minutes of startup, provided the aircraft is outside (or indoors with a GPS repeater). Select the AUX – GPS STATUS Page on the MFD. Two softkeys on the bottom of the display allow the user to toggle between GPS 1 and GPS 2. Verify that both receivers show 3D Navigation on the MFD.

4.3. ADF Checkout

This check verifies that the ADF-to-G1000 interface operates correctly. This check is required for DA40D aircraft with the remote-mount Becker RA3502 ADF installed.

1. On the PFD, check to see if the ADF window(s) is displayed. If not, press the PFD softkey. Using either the BRG1 or BRG2 softkeys, toggle the softkey until the ADF bearing is shown. Press the BACK softkey.

2. Verify that the ADF window is not invalid (no red 'X').

3. Press the ADF/DME softkey and check to ensure the ADF tuning window displays correctly.

4.4. DME Checkout

This check verifies that the DME-to-G1000 interface operates correctly. This check is required for DA40D aircraft with the Honeywell remote mounted KN63 DME installed.

1. On the PFD, check to see if the DME window is displayed. If not, press the PFD softkey, then press the DME softkey to display the DME window next to the HSI.

2. Verify that the DME window is not invalid (no red 'X').

3. On the PFD, press the ADF/DME softkey. Verify that the ADF/DME TUNING screen is displayed correctly.

4.5. GDL Configuration Verification

This check verifies that the GDL69-to-G1000 interface operates correctly. This check is required for DA40D aircraft with the Garmin GDL 69 installed.

1. Using the small FMS knob, verify the Map – Weather Data Link page can be displayed on the MFD.

NOTE

If needed, refer to the document GDL 69/69A XM Satellite Radio Activation Instructions (190-00355-04).

4.6. TAS System (KTA870 TAS or TAS600) Verification

This check verifies that the KTA870 TAS-to-G1000 or TAS600-to-G1000 interface operates correctly. This check is required for DA40D aircraft with the KTA870 TAS or TAS600 installed.

1. Using the small FMS knob, verify the Map – Traffic Map page can be displayed on the MFD.

4.7. Weather Mapping Sensor (Stormscope) Verification

This check verifies that the Stormscope WX-500-to-G1000 interface operates correctly. This check is required for DA40D aircraft with the Stormscope WX-500 System installed.

1. Using the small FMS knob, verify the Map – Stormscope Map page can be displayed on the MFD.

4.8. Final Checks

Make sure the following steps are performed:

- Make appropriate entry in the aircraft's maintenance records, noting that the instructions in this Software Service Bulletin have been performed
- Record the G1000, DA42/DA40D Loader Card part number in the maintenance records
- Deliver all required documentation to the aircraft owner/operator

MATERIAL INFORMATION

G1000, DA42/DA40D Software Loader Card

To accomplish this update, the technician must have the new G1000, DA42/DA40D Loader Card, Garmin P/N 010-00370-14. A Diamond supplied CD-ROM containing G1000 System Software version 0370.14 may also be used to load software files to an SD Card, as an equivalent means of obtaining the required Loader Card.

QTY	Part Number	Description
1	010-00370-14	G1000 Software Loader Card (Diamond DA42/DA40D) *NOTE* This datacard carries a charge of $50.00, which will be refunded upon return of the datacard to Garmin.

ADDITIONAL INFORMATION

The following table lists the new G1000, DA42/DA40D Loader Card software configuration. Use this table to verify the G1000 LRU software versions and part numbers during the update process as required.

SYSTEM STATUS PAGE NAME	SOFTWARE PART NUMBER	SOFTWARE VERSION
GDC1-GIA1	006-B0261-03	2.05
GDC1 FPGA	006-C0055-00	01.05
GDL69	006-B0317-12	3.02.00
GEA1-GIA1	006-B0193-04	2.06
GEA1-GIA2	006-B0193-04	2.06

(continued)

SYSTEM STATUS PAGE NAME	SOFTWARE PART NUMBER	SOFTWARE VERSION
GIA1	006-B0190-22	3.02
GIA2	006-B0190-22	3.02
GMA1-GIA1	006-B0203-08	2.09
GMA1-GIA2	006-B0203-08	2.09
GMU1	006-B0224-00	2.01
GMU1 FPGA	006-C0048-00	2.00
GPS1	006-B0093-XX	3.03
GPS2	006-B0093-XX	3.03
GRS1-GIA1	006-B0223-05	2.06
GRS1 FPGA	006-C0049-00	2.00
GTX1 – GIA1	006-B0172-XX	4.03
GTX1 – GIA2	006-B0172-XX	4.03
MFD1	006-B0319-32	5.02
PFD1	006-B0319-32	5.02

NOTE

All G1000 system software versions correspond to their respective G1000 Loader Card part numbers (e.g. G1000 Software Loader Card part number 010-00370-14 contains G1000 system software version 0370.14). This number is shown on the G1000 on the start-up page of the MFD, in the upper right corner of the display.