A Textron Company

# TECHNICAL BULLETIN 429-18-56

28 June 2018

**MODEL AFFECTED:** **429**

**SUBJECT:** **GTN 750/650 NAV/COM/GPS SERIES UNIT MAIN SOFTWARE VERSION 6.21, UPGRADE TO.**

**HELICOPTERS AFFECTED:** **Serial numbers 57001 through 57343 and 57346 through 57350 equipped with GTN 750 and GTN 650 NAV/COM/GPS series units per 429-704-009 or 429-704-019 retrofit kits.**

[Serial numbers 57344, 57345 and 57351 and subsequent will have the intent of this bulletin incorporated prior to delivery]

[Serial numbers 57001 through 57185 equipped with the Garmin GNS 530W and/or GNS 430W NAV/COM/GPS series units <u>are not affected</u> by this bulletin.]

**COMPLIANCE:** Prior to June 21, 2019.

**DESCRIPTION:**

This Technical Bulletin (TB) enables maintenance personnel to perform an “On Aircraft” Field Loadable Software (FLS) upgrade of the GTN 750/650 series units to the following versions:

| | |
|---|---|
| MAIN Software Version 6.21 | TOUCH Software Version 2.10 |
| WAAS Software Version 5.2 | COM Software Version 2.2 |
| NAV Software Version 6.02 | ---------- |


Approved for public release.

**DESCRIPTION: (Continued)**

The newly installed software versions will change and/or improve the GTN 750/650 features, capabilities and/or performance as follows:

- New Navigation database format that includes support for Visual Reporting Points (VRPs) in some regions where all cataloged flight plans will need to be previewed and approved before activation following software update.

- Added support for Flight Stream 510 kit (BHT-429-II-57) including Database Concierge wireless database 510 updates, flight plan transfers, and weather and traffic forwarding.

- Added support for Search and Rescue (SAR) Pattern (BHT-429-II-58) Enablement kit.

- Added Advanced COM RX Squelch configuration to allow the COM radio sensitivity settings to be adjusted independently for low, mid, and high frequencies in both 8.33 kHz and 25 kHz channel spacing mode.

- Added “internal” COM sidetone configuration to improve the audio quality of the COM sidetone.

- Added support for pinch-to-zoom on map pages and improved touch screen performance.

- Added controls for clearing the flight plan catalog of all flight plans or flight plans pending preview.

- Added controls for deleting all user waypoints.

- Added support for displaying a track vector on the main map depicting the current GPS track and groundspeed.

- Additional changes or improvements details regarding the GTN 750/650 Main software version 6.21 are available from Garmin.

This technical bulletin also enables operators who acquire the software card listed in the MATERIAL section of this bulletin to subsequently perform (on aircraft) software version upgrade or downgrade of spare or replacement GTN 750/650 units intended to be installed on the Bell 429 to meet or maintain the Bell 429 Type Certificate (TC) software version requirements.

Applicability of this bulletin to any spare part shall be determined prior to installing the part on any affected Bell model 429 helicopter.

**DESCRIPTION: (Continued)**

PART 1: Record the current GTN 750 configuration settings.

PART 2: Record the current GTN 650 configuration settings.

PART 3: GTN 750 version 6.21 software suite upload and navigation database update.

PART 4: GTN 650 version 6.21 software suite upload and navigation database update.

PART 5: GTN 750 software version verification and configuration set-up.

PART 6: GTN 650 software version verification and configuration set-up.

PART 7: Operational checks, restoration and aircraft maintenance records.

**APPROVAL:**

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

**CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering - Intermediate Helicopters
Tel: 450-437-2077 / 1-800-463-3036 / pseinter@bellflight.com

**MANPOWER:**

Approximately 8.0 man-hours are required to complete this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

**WARRANTY:**

There is no warranty credit applicable for parts or labor associated with this bulletin.

## MATERIAL:

### Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

| Part Number | Nomenclature | Qty |
|---|---|---|
| 010-00969-36 | Loader card with loader software 006-B1367-36. | 1 |

### Consumable Material:

None required.

## SPECIAL TOOLS:

None required.

## WEIGHT AND BALANCE:

Not affected.

## ELECTRICAL LOAD DATA:

Not affected.

## REFERENCES:

BHT-429-IPB, Illustrated Parts Breakdown
BHT-429-MM, Maintenance Manual

## PUBLICATIONS AFFECTED:

BHT-429-MM, Maintenance Manual (For the 429-704-019 installation)
BHT-429-MMS-9, Maintenance Manual Supplement (For the 429-704-009 installation)
BHT-429-FMS-8, Flight Manual Supplement.
BHT-429-FMS-19, Flight Manual Supplement.

## ACCOMPLISHMENT INSTRUCTIONS:

**CAUTION**

Not loading GTN Main software after energizing the GTN unit with an inserted loader card that contains different GTN Main software may corrupt the GTN configuration settings. It is therefore recommended to perform the accomplishment instructions of this technical bulletin in the proposed numerical order.

**CAUTION**

Both GTN 750 and GTN 650 units must be successfully upgraded to Main Software Version 6.21 and appropriately configured for operation in a Bell 429 prior to be released for service or flight. Dual GTN installation with mixed main software versions are incompatible and are not approved for service or flight.

-NOTE-

This Technical Bulletin (TB) should be printed and subsequently filed with the helicopter records once complied with.

-NOTE-

GTN Main Software Version 6.21 requires a new Navigation database format to be used. Older format Navigation databases will not work with the subject software version. A Navigation database update will therefore be required. It should however be noted that current Navigation database cycles include the new and old formats.

-NOTE-

For installation with GDL 88, GTN Main Software Version 6.21 is compatible with GDL 88 Software Version 3.33 and later. Please contact Garmin for any additional details.

**PART 1: Record the current GTN 750 configuration settings.**

**PART 1:** **Record the current GTN 750 configuration settings.**
(Step 1 through 44)

1. Prepare the helicopter for maintenance.

2. Press and hold the **GTN 750** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the screen brightly displays "GARMIN".

-NOTE-

If the aircraft has optional (429-706-XXX) and/or custom equipment installed (429-799-XXX and/or 429-899-XXX) and/or 3rd party supplemental type certificated (STC) equipment; it is possible some GTN configuration settings may be different from the settings defined in the following tables. If it is the case, and as instructed in Step 3; note the "as displayed" setting nomenclature in the **"PART 1" column**.

Let it be noted that any change to the defined GTN unit parameter settings should be justified either by approved data or by an applicable "flight crew parameter" option" from the "Home/System" page. Consult the applicable optional equipment Installation Instruction (II), Maintenance Manual (MM), Maintenance Manual Supplement (MMS) or custom equipment drawings and/or Instruction for Continued Airworthiness (ICA) for these specific configuration setting approvals.

3. Using the following tables, record the current **GTN 750** configuration settings in the **"PART 1" column** by making a check mark (√) and by circling (or writing) the current setting nomenclature. Additionally, record the aircraft serial number at the bottom of each page of this Technical Bulletin.

EXAMPLE

| Parameter | Input (selection) | Output (selection) | PART 1 GTN 750 configuration RECORD (SW version 4.0) | PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21) |
|---|---|---|---|---|
| RS-232 1 (NOTE 1) | GTX w/TIS + #1 (or) GTX Mode S+ #1 | GTX w/TIS + #1 (or) GTX Mode S+ #1 | √ | |
| RS-232 2 | Fuel Format 2 | Off | √ | |
| RS-232 3 (NOTE 1) | Off (or) Traffic Format 8 | Off (or) Traffic Format 8 | √ | |
| RS-232 4 | Off | Off | √ | |
| RS-232 5 | Off | Off | √ | |
| RS-232 6 | Off | Off | √ | |

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S/N: 57XXX

4. From the *Configuration Mode* page. (Figure 1)
   ***GTN Setup* (key) -Press.**
   View the *GTN Setup page.* (Figure 2)
   ***ARINC 429* (key) – Press**.
   View the *ARINC 429 Configuration* page.

| **Parameter** | **Speed (selection)** | **Data (selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| ARINC 429 In 1 | Low | EFIS Format 2 | | |
| ARINC 429 In 2 | Low | Off | | |
| ARINC 429 In 3 | Low | Off | | |
| ARINC 429 In 4 | Low | Off | | |
| ARINC 429 Out 1 | Low | GAMA Format 7 | | |
| ARINC 429 Out 2 | Low | Off | | |
| ARINC 429 Out 3 | Low | Off | | |
| SDI | - | LNAV 1 | | |

5. From the *GTN Setup* page using the “back” key.
   ***RS-232* (key) – Press**.
   View the *RS-232 Configuration* page.

| **Parameter** | **Input (selection)** | **Output (selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| RS-232 1 | GTX w/TIS + #1<br>(or)<br>GTX Mode S+ #1 | GTX w/TIS + #1<br>(or)<br>GTX Mode S+ #1 | | |
| RS-232 2 | Fuel Format 2 | Off | | |
| RS-232 3 | Off<br>(or)<br>Traffic Format 8 | Off<br>(or)<br>Traffic Format 8 | | |
| RS-232 4 | Off | Off | | |
| RS-232 5 | Off | Off | | |
| RS-232 6 | Off | Off | | |

-NOTE-

As required, use the up or down arrow keys to view all the parameters fields.

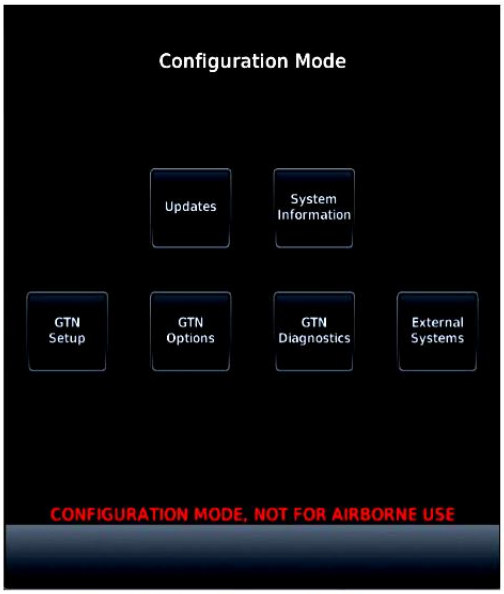


Figure 1 - Configuration Mode page

Figure 2 - GTN Setup page

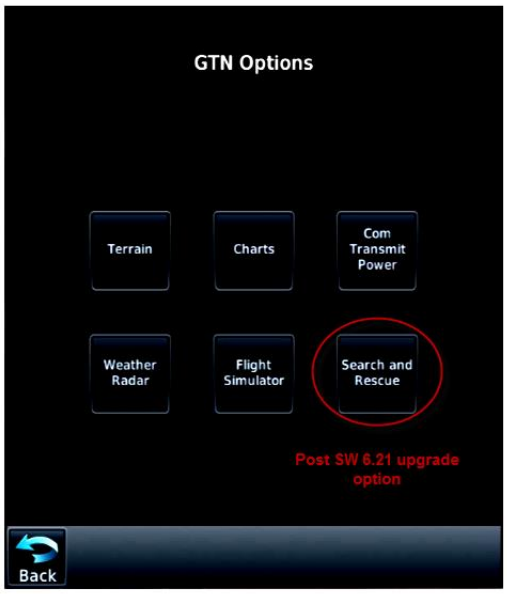


Figure 3 - GTN Options page

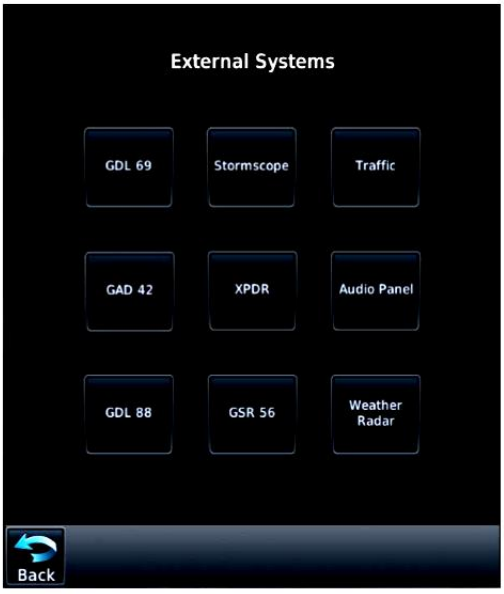


Figure 4 - External Systems page

6. From the *GTN Setup* page using the “back” key.
   ***HSDB (Ethernet)* (key) – Press.**
   View the *HSDB Port Utilization* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Ethernet Port 1 | Connected | | |
| Ethernet Port 2 | Not Connected | | |
| Ethernet Port 3 | Not Connected | | |
| Ethernet Port 4 | Not Connected | | |

7. From the *GTN Setup* page using the “back” key.
   ***Interfaced Equipment* (key) – Press.**
   View the *Interfaced Equipment* page.

| **Unit** | **Present (selection)** | **Type (selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| Crosside-Navigator | Present | | | |
| GDL 69/69A | Not Present | | | |
| GDL 88 | Not Present | | | |
| ADS-B in Source (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 1 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 2 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 3 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 4 (6.21) | Not Present | | **N/A - Not Displayed** | |
| Transponder # 1 | Present | GTX w/TIS+ (or) GTX Mode S+ | | |
| Transponder # 2 | Not Present | | | |
| GSR 56 | Not Present | | | |
| GWX | Not Present | | | |

-NOTE-

As required, use the up or down arrow keys to view all the parameters fields.

8. From the *GTN Setup* page using the “back” key.
   ***Main Indicator (Analog)* (key) – Press.**
   View the *Main Indicator (Analog) Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Selected Course | ---- | | |
| Calibrate OBS Resolver | Calibrate | | |
| CDI Key | Disabled | | |
| **Selected Course for GPS** | Allowed (4.0)<br>Ignored (6.21) | Allowed | Ignored |
| Selected Course for VLOC | Ignored | | |
| V-Flag State | Normal | | |

9. From the *GTN Setup* page using the “back” key.
   ***Main System* (key) – Press.**
   View the *Main System Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airframe Type | Rotorcraft | | |
| Air / Ground Threshold | 30 KT | | |
| Air / Ground Discrete | Active for Ground | | |
| GPS Antenna Height Above Ground | 7.8 FT | | |
| Fuel Type | Jet A | | |
| Synchro Heading Input | Not Connected | | |
| GSP Select | Auto | | |
| Heading Source Input | Connected | | |
| Radio Altimeter Input | Not Connected | | |
| Altitude Source Input | Connected | | |
| Enhanced Lighting Mode | Disabled | | |
| Pilot Position | Right | | |
| Crossfill Status Alert | Enabled | | |
| System ID (6.21) | GTN 1 | **N/A - Not Displayed** | |
| Database SYNC (6.21) | Pilot Control | **N/A - Not Displayed** | |
| Airspace Labels (6.21) | Enabled | **N/A - Not Displayed** | |
| **Checklist Page Title** (6.21) | Task List | **N/A - Not Displayed** | |
| Blackout Mode (6.21) | Disabled | **N/A - Not Displayed** | |

10. From the *GTN Setup* page using the “back” key.
    ***Lighting* (key) – Press.**
    View the *Lighting Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Source (Display) | Photocell | | |
| **Minimum Level** (Display) | 1.00% | | |
| Source (Keys) | Photocell | | |
| **Minimum Level** (Keys) | 1.00% | | |

11. *Configure Lighting Bus*. (Reserved)

12. From the *Lighting Configuration* page.
    ***Configure Photocell* (key) – Press.**
    View the *Photocell Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Response Time | 2 SEC | | |
| Slope | 50 | | |
| Offset | 50 | | |
| **Key Backlight Cutoff** (Photocell Override) | 75% | | |
| **Photocell Transition** (Photocell Override) | 5% | | |

13. From the *GTN Setup* page using the “back” key twice.
    ***Audio* (key) – Press.**
    View the *Audio Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Alert Volume | 60% | | |
| Test Sound | Altitude | | |

14. From the *GTN Setup* page using the “back” key.
    ***Traffic* (key) – Press.**
    View the *Traffic Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Traffic Intruder Symbol Color | Cyan | | |
| GTN Control of Traffic System | Yes | | |

15. From the *GTN Setup* page using the “back” key.
    ***Com* (key) – Press.**
    View the *Com Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Com Radio | Enabled | | |
| Com Squelch Mode (6.21) | Basic | **N/A - Not Displayed** | |
| Com RF Squelch | 45% | | |
| Mic 1 Gain | + 12 DB | | |
| Sidetone Source (6.21) | External | **N/A - Not Displayed** | |
| Sidetone Volume | + 55 DB | | |

16. From the *GTN Setup* page using the “back” key.
    ***VOR/LOC/GS* (key) – Press**.
    View the *VOR/LOC/GS Configuration* page.

| **Parameter** | **(selection)** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| Nav Radio | - | Enabled | | |
| Selected Course | - | --- | | |
| Calibrate OBS Resolver | - | Calibrate | | |
| ARINC 429 Configuration | (Tx Speed) LOW | (SDI) VOR/ILS 1 | | |
| DME Mode | - | Directed Freq 1 | | |
| DME Channel Mode | - | King Serial | | |

17. From the *GTN Setup* page using the “back” key.
    ***ARINC 708* (key) – Press.**
    View the *ARINC 453/708 Configuration* page.

| **Parameter** | **Device** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Port 1: External Weather Radar | Off | N/A | N/A |

18. From the *GTN Setup* page using the “back” key.
    ***Discrete* (key) – Press.**
    View the *Discrete Configuration* page.

-NOTE-

**J1002-01, J1005-33, J1005-54, J1001-15, J1001-52** and **J1001-56** are non-configurable default settings.

| **Pin** | **Function (selection)** | **Direction** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| J1001-16 | Day/Night | In | | |
| J1001-36 | TAWS Audio Inhibit | In | | |
| J1001-37 | Off | In | | |
| J1001-38 | Air/Ground | In | | |
| J1001-39 | Mark on Target | In | | |
| **J1002-10** | Syst. ID Program / OFF | In | **(Default Setting)** | **OFF** |
| J1002-11 | Off | In | | |
| J1005-53 (6.21) | Off | In | **N/A - Not Displayed** | |
| J1001-14 | Off | Out | | |
| J1001-33 | Off | Out | | |
| J1001-34 | Off | Out | | |
| J1001-35 | TAWS Audio Active Annunciate | Out | | |
| J1001-53 | Off | Out | | |
| J1001-54 | Off | Out | | |
| J1001-55 | Off | Out | | |
| J1001-57 | Off | Out | | |

(Additional parameters of the *Discrete Configuration* page are shown on the following page)

*Discrete Configuration* page (Continued)

| **Pin** | **Function (selection)** | **Direction** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| J1001-71 | TAWS Warning Annunciate | Out | | |
| J1001-72 | Off | Out | | |
| J1001-73 | TAWS Caution Annunciate | Out | | |
| J1001-74 | Off | Out | | |
| J1001-75 | Off | Out | | |
| J1001-76 | Off | Out | | |
| J1002-03 | Off | Out | | |
| J1002-12 | Off | Out | | |
| **J1005-13** (6.21) | Off | Out | **N/A - Not Displayed** | |
| J1005-34 (6.21) | Off | Out | **N/A - Not Displayed** | |

19. From the *GTN Setup* page using the “back” key.

<u>PART 1 / SW version 4.0 (configuration record)</u>

***Waypoint* (key) – Press**.
View the *Waypoint Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Mark On Target | Disabled | | |
| RF Procedure Legs (6.21) | Disabled | **N/A - Not Displayed** | |

<u>PART 5 / SW version 6.21 (configuration set-up/verification)</u>

***Navigation Features* (key) – Press.**
View the *Navigation Features Configuration* page.
(Use table above)

20. From the *GTN Setup* page using the “back” key.

PART 1 / SW version 4.0 (configuration record)
This Step is not applicable. Proceed to Step 21.

PART 5 / SW version 6.21(configuration set-up/verification)

***Ownship* (key) – Press.**
View the *Ownship Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| **Color Ownship** (6.21) | Enabled (green bar = active) | **N/A - Not Displayed** | |
| **Ownship Icon** (6.21) | 4-Blade Rotorcraft (Highlighted in blue) | **N/A - Not Displayed** | |

21. From the ***GTN Setup*** page.

PART 1 / SW version 4.0 (configuration record)
This Step is not applicable. Proceed to Step 22.

PART 5 / SW version 6.21(configuration set-up/verification)

**IMPORTANT**: This Step ensures the parameter selections made prior to this point are saved.

***Update Config Module* (key) – Press** (Figure 5)
The “Update Config Module?” window will be displayed. **Press “Y*ES”.***
Confirm the “*Config Module Update Complete*” window is displayed. **Press “OK”.**

Figure 5 - Update Config Module key

22. From the *Configuration Mode* page using the “back” key.
    ***GTN Options* (key) -Press**.
    View the *GTN Options* page (Figure 3)
    ***Terrain* (key) – Press**.
    View the *Terrain Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Terrain Mode (green bar = active) | HTerrain Proximity<br><br>(or)<br><br>HTAWS<br>(This is an optional feature. Enablement card required)<br>(429-706-639-101) | | HTAWS: As required, refer to the applicable MM or MMS after this Technical Bulletin has been complied with |
| HTAWS Audio<br>(HTAWS Configuration) | Audio Clips | | |
| Airport Criteria<br>(HTAWS Configuration) | Runway Surface Hard/Soft | | |
| | Minimum Length 0 FT | | |

23. From the *GTN Options* page using the “back” key.
    ***Charts* (key) – Press.**
    View the *Chart Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Charts Configured (green bar = active) | FliteCharts (or)<br><br>None (or)<br><br>ChartView<br>(This is an optional feature. Enablement card required)<br>(429-706-639-103) | | FliteCharts: For Canadian/US/European registered aircraft.<br><br>Otherwise set to “NONE”.<br><br>(or)<br><br>ChartView: As required, refer to the applicable MM or MMS after this Technical Bulletin has been complied with |

24. From the *GTN Options* page using the “back” key.
    ***Com Transmit Power* (key) – Press.**
    View the *Com Transmit Power Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Com transmit Power (green bar = active) | Normal<br><br>(or)<br><br>16W This is an optional feature. Enablement card required (429-706-639-105) | | 16W: As required, refer to the applicable MM or MMS after this Technical Bulletin has been complied with. |

25. From the *GTN Options* page using the “back” key.

    PART 1 / SW version 4.0
    No action required. Proceed to Step 26**.**

    PART 5 / SW version 6.21
    ***Search and Rescue* (key) – Press**.
    View the *Search and Rescue Configuration* page.
    For future reference only. Proceed to Step 26.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Search and Rescue (6.21) (green bar = active) | SAR: This is an optional feature. Enablement card required. (429-706-639-107) | **N/A - Not Displayed** | SAR: As required, refer to the applicable Installation Instruction after this Technical Bulletin has been complied with. |
| Parallel Track (6.21) (SAR Patterns) | | **N/A - Not Displayed** | |
| Sector Search (6.21) (SAR Patterns) | | **N/A - Not Displayed** | |
| Expanding Square (6.21) (SAR Patterns) | | **N/A - Not Displayed** | |
| Orbit (6.21) (SAR Patterns) | | **N/A - Not Displayed** | |

26. From the *Configuration Mode* page using the “back” key.
    ***External Systems* (key) – Press.**
    View the *External Systems* page. (Figure 4)
    ***XPDR* (key) – Press**.
    View the *XPDR 1 Configuration* page.
    ***Inputs and Outputs* (key) – Press.**
    View the *XPDR 1 Inputs/Outputs* page.

| RS-232 Configuration | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | Input | Output | Baud (rate) | Parity | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
| **Port 1** | Remote | Remote w/TIS (or) Remote | **19200** | No Parity | | |
| **Port 2** | Remote | Remote w/TIS (or) Remote | **19200** | No Parity | | |

-NOTE-

It is possible the Port 1 and/or Port 2 “Baud” rate field may not appear to be set at 19200, and/or may not be highlighted to change its setting. If this is the case, it is recommended to proceed forward and return to this page to verify it is properly set after the GTN 650 SET-UP / VERIFICATION is completed (PART 6)

| ARINC 429 Configuration | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | Input | Speed | Output | Speed | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
| Port 1 | AHRS | High | Off | High | | |
| Port 2 | Off | Low | Off | High | | |
| Port 3 | Off | Low | - | - | | |
| Port 4 | Off | High | - | - | | |

27. From the *XPDR 1 Configuration* page using the “back” key.
***Installation Settings (*key) – Press**.
View the *XPDR 1 Installation Settings* page.

| **Parameter** | **(selection)** | | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** | |
|---|---|---|---|---|---|---|
| VFR Button Code | 1200 | | | | | |
| Aircraft Weight | Rotorcraft | | | | | |
| Auto Standby Delay | 24 SEC | | | | | |
| Altitude Climb Rate For Airborne Transition | 500 FPM | | | | | |
| Air/Ground Logic | Squat Switch | | | | | |
| Squat Switch Sense | Low | | | | | |
| Max Speed | <=150 KT | | | | | |
| Address Type | **US TAIL** (for US registered) or **HEX ID** (for all others) | | | | | |
| Address | (Enter the US Tail number otherwise enter the mode S, 6-digit Hexadecimal address) | | | | | |
| Flight ID Type | **SAME AS TAIL** (US) or **CONFIG ENTRY** (All others) | | | | | |
| Flight ID | (Enter the aircraft registration tail number) | | | | | |
| Aircraft Length | LE_15 | | | | | |
| Aircraft Width | LE_11_5 | | | | | |
| Enhance Surveillance | Disabled | | | | | |
| Surveillance Integrity Level | 10ˆ-7 | | | | | |
| Temperature Switch Installed | No | | | | | |
| ADS-B Out (6.21) | Pilot Select | | **N/A - Not Displayed** | | | |
| 1090ES (4.0)<br>1090 Input (6.21) | Disabled | | | | | |
| UAT Input | Disabled | | | | | |
| GPS Antenna Longitudinal Offset | 2M | | | | | |
| GPS Antenna Lateral Offset | 0M | Left | | | | |

28. From the *XPDR 1 Configuration* page using the “back” key.
    ***Audio Config (*key) – Press**.
    View the *XPDR 1 Audio Configuration* page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude Monitor | Off | | |
| Count Down | Off | | |
| TIS Alert | Message<br><br>(or)<br><br>Off | | |
| Voice Setting | FEMALE | | |
| Volume | +47 DB | | |
| Test Tone (6.21) | 500 HZ Tone<br><br>(or)<br><br>“As desired” | **N/A - Not Displayed** | |
| Test Audio (6.21) | Leaving Altitude<br><br>(or)<br><br>“As desired” | **N/A - Not Displayed** | |

29. From the *XPDR 1 Configuration* page using the “back” key.

| | |
|---|---|
| Force Airborne Test | N/A during this procedure– Used to set transponder for testing |

30. Cycle the **GTN 750** power.
    Allow time for the unit to power-up normally (Figure 6 and 7)
    Press the “HOME” button twice to display the HOME page (Figure 8)

Figure 6 - Initial screen (a)

Figure 7 - Initial screen (b)

Figure 8 - Home screen

Figure 9 - System page

31. From the *HOME* page.
    ***System (*key) – Press.**
    View the *System* page (Figure 9).
    ***Setup (*key) – Press.**
    View the *System*-Setup page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| CDI Scale (6.21) (CDI) | Auto | **N/A - Not Displayed** | |
| ILS CDI Capture (6.21) (CDI) | Auto Switch | **N/A - Not Displayed** | |
| Runway Surface (6.21) (Nearest Airport Criteria) | Any | **N/A - Not Displayed** | |
| Minimum Runway Length (Nearest Airport Criteria) (6.21) | 0 FT | **N/A - Not Displayed** | |
| Local Offset (Date / Time) | (Adjust from GMT) | | |
| Time Format (Date / Time) | Local 24 hour | | |
| Com Channel Spacing | (As required by local civil aviation authorities)<br><br>25 KHz (or) 8.33 KHz | | |
| Reverse Frequency Lookup (6.21) | ON (green bar = active) | **N/A - Not Displayed** | |
| Crossfill | ON (green bar = active) | | |

32. Use the “back” key to view the *System* Page.
    ***Ownship (*key) – Press.**
    View the *System*-Ownship page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Aircraft representation (4.0) | 4-Blade Rotorcraft (Highlighted in blue) | | N/A – For SW version 6.21, this parameter is set at Step 20 |

33. Use the “back” key to view the *System* Page.
    ***Units (*key) – Press.**
    View the *System*-Units page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude/Vertical Speed (6.21) | Feet (FT/FPM)<br>(or)<br>Meters (M/MPM) | **N/A - Not Displayed** | |
| Distance/Speed (6.21) | Nautical Miles (NM/KT) | **N/A - Not Displayed** | |
| Fuel | Pounds (LB)<br>(or)<br>Kilograms(KG) | | |
| NAV Angle | Magnetic (°) | | |
| Position Format (6.21) | LAT/LON | **N/A - Not Displayed** | |
| Pressure (6.21) | Inches of Mercury (IN)<br>(or)<br>Millibar (Mb) | **N/A - Not Displayed** | |
| Magnetic Variation | XX X | (Default) | |
| Temperature | Celsius (°C) | | |

34. Use the “back” key to view the *System* Page.
    ***Audio (*key) – Press**.
    View the *System*-Audio page.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Click Volume | 40% | | |
| HTAWS Alert Voice | HTAWS: (Requires an enablement card) (429-706-639-101) | | HTAWS: If applicable, refer to MM or MMS, after this bulletin has been complied with. |
| Voice Callouts | (Same as above) | | |

35. From the *HOME* page.
    ***MAP (*key) – Press.**
    View the *MAP* page.
    ***Menu (*key) – Press.** (Figure 10)
    View the *Map Menu* page.
    ***Map Setup (*key) – Press**.
    View the *Map Setup* page.

Figure 10 - MAP page / Menu (key)

(Step 35 – Continued)

***Map* (tab)** – Should be displayed by default.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Orientation | Heading Up | | |
| North Up Above | 40 NM | | |
| Auto Zoom | ON | | |
| Auto Zoom Min | 1.5 NM | | |
| Auto Zoom Max | 25 NM | | |
| Track Vector Length (6.21) | 60 SEC | **N/A - Not Displayed** | |
| NAV Range Ring | ON | | |
| **Fuel Reserve Time** (6.21) (Note: Fuel Range Ring must be set to "ON" first) | 30 MIN | **N/A - Not Displayed** | |
| **Fuel Range Ring** (6.21) | ON | **N/A - Not Displayed** | |
| TOPO Scale | Off | | |
| Obstacle Range / Point Obstacle Range | 5 NM | | |
| Wire Obstacle Range / Hot Line Range | 1.5 NM | **N/A - Not Displayed** | |
| Chart Color Scheme | Day | **N/A - Not Displayed** | |

36. From the *Map Setup* page.

***Traffic* (tab) – Press.**

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Traffic Range | 25 NM | | |
| Traffic Type | All Traffic | | |

37. From the *Map Setup* page.

***Aviation (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airport Range | 25 NM | | |
| Heliports | ON | | |
| Safe Taxi Diagrams | 1 NM | | |
| Runway Extensions | 5 NM | | |
| Intersection Range | 4 NM | | |
| NDB Range | 5 NM | | |
| VOR Range | 10 NM | | |
| User Waypoint Range | 5 NM | | |
| Airway Range | 25 NM | | |

-NOTE-

As required, use the up or down arrow keys to view all the parameters fields.

38. From the *Map Setup* page.

***Land (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Road Detail | Normal | | |
| City Detail | Normal | | |
| State/Province Names | ON | | |
| River/Lake Detail | Normal | | |

39. From the *Map Setup* page.
    ***Airspace (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airspace Label Range (6.21) | 25 NM | **Field Not Displayed** | |
| Smart Airspace | OFF | | |
| Show Airspaces | Below 12000 FT | | |
| CL B/TMA/AWY Range | 150 NM | | |
| CL C/CTA Range | 150 NM | | |
| CL A/D Range | 150 NM | | |
| Restricted Range | 150 NM | | |
| MOA (Military) Range | 40 NM | | |
| OTHER Range | 150 MN | | |

40. From the *Map Menu* page using the “back” key.

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| TOPO (Map Overlays) | ON (green bar = active) | | |
| Terrain (Map Overlays) | ON (green bar = active) | | |
| Airways (Map Overlays) | Low | | |
| Charts (Map Overlays) | ON (green bar = active) | | |
| Traffic (Map Overlays) | ON (green bar = active) | | |
| Map Detail | Most (Slide the screen cursor) | | |

41. From the *HOME* page using the “back” key.
    ***Traffic (*key) – Press**
    View the *Traffic* page. (Figure 11)

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude Filter | Unrestricted | | |

Figure 11 - Traffic page

Figure 12 - Configure Nav Data Fields page

42. From the *HOME* page using the “back” key twice.
    ***Map (*key) – Press.**
    View the *Map* page.
    ***Menu* (key) – Press**.
    View the *Menu* page.
    ***Change data field* (key) – Press** (4.0)
    ***Change user fields* (key) – Press** (6.21)
    View the *Configure Nav Data Fields* page. (Figure 12)

| **Parameter** | **(selection)** | **PART 1 GTN 750 configuration RECORD (SW version 4.0)** | **PART 5 GTN 750 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Upper left key (Figure 12) | Wind - Wind Speed and Direction | | |
| Lower left key (Figure 12) | ETE to Dest - ETE to Destination | | |
| Upper right key (Figure 12) | Fuel Flow - Total Fuel Flow | | |
| Lower right key (Figure 12) | ETA at Dest - ETA at Destination | | |

43. Press the HOME button.

44. Turn OFF aircraft electrical power.

## PART 2: Record the current GTN 650 configuration settings

**PART 2:** **Record the current GTN 650 configuration settings**
(Step 45 through 88)

45. Press and hold the **GTN 650** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the **GTN 650** screen brightly displays "GARMIN".

-NOTE-

If the aircraft has optional (429-706-XXX) and/or custom equipment installed (429-799-XXX and/or 429-899-XXX) and/or 3rd party supplemental type certificated (STC) equipment; it is possible some GTN configuration settings may be different from the settings defined in the following tables. If it is the case, and as instructed in Step 45; note the "as displayed" setting nomenclature in the "PART 2" column.

Let it be noted that any change to the defined GTN unit parameter settings should be justified either by approved data or by an applicable "flight crew parameter option" from the "Home/System" page. Consult the applicable optional equipment Installation Instruction (II), Maintenance Manual (MM), Maintenance Manual Supplement (MMS) or custom equipment drawings and/or Instruction for Continued Airworthiness (ICA) for these specific configuration setting approvals.

46. Using the following tables, record the current **GTN 650** configuration settings in the **"PART 2" column** by making a check mark (√) or by writing the exact (current) setting nomenclature.

EXAMPLE

| Parameter | Input (selection) | Output (selection) | PART 2 GTN 650 configuration RECORD (SW version 4.0) | PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21) |
|---|---|---|---|---|
| RS-232 1 | GTX w/TIS + #1 (or) GTX Mode S+ #1 | GTX w/TIS + #1 (or) GTX Mode S+ #1 | √ | |
| RS-232 2 | Fuel Format 2 | Off | √ | |
| RS-232 3 | Off (or) Traffic Format 8 | Off (or) Traffic Format 8 | √ | |
| RS-232 4 | Off | Off | √ | |

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47. From the *Configuration Mode* page (Figure 13)
    ***GTN Setup* (key) - Press.**
    View the *GTN Setup page* (Figure 14)
    ***ARINC 429* (key) – Press.**
    View the *ARINC 429 Configuration* page.

| **Parameter** | **Speed (selection)** | **Data (selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| ARINC 429 In 1 | Low | EFIS Format 2 | | |
| ARINC 429 In 2 | High | Off<br>(or)<br>Traffic Format 5 | | |
| ARINC 429 Out 1 | Low | GAMA Format 7 | | |
| ARINC 429 Out 2 | Low | Off | | |
| SDI | - | LNAV 2 | | |

Figure 13 - Configuration Mode page

Figure 14 - GTN Setup page

48. From the *GTN Setup* page using the "back" key.
    ***RS-232* (key) – Press.**
    View the *RS-232 Configuration* page.

| **Parameter** | **Input (selection)** | **Output (selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| RS-232 1 | GTX w/TIS + #1<br>(or)<br>GTX Mode S+ #1 | GTX w/TIS + #1<br>(or)<br>GTX Mode S+ #1 | | |
| RS-232 2 | Fuel Format 2 | Off | | |
| RS-232 3 | Off | Off | | |
| RS-232 4 | Off | Off | | |

49. From the *GTN Setup* page using the “back” key.
***HSDB (Ethernet)* (key) – Press.**
View the *HSDB Port Utilization* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Ethernet Port 1 | Connected | | |
| Ethernet Port 2 | Not Connected | | |
| Ethernet Port 3 | Not Connected | | |
| Ethernet Port 4 | Not Connected | | |

50. From the *GTN Setup* page using the “back” key.
***Interfaced Equipment* (key) – Press.**
View the *Interfaced Equipment* page.

| **Unit** | **Present (selection)** | **Type (selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| Crosside-Navigator | Present | | | |
| GDL 69/69A | Not Present | | | |
| GDL 88 | Not Present | | | |
| ADS-B Source (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 1 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 2 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 3 (6.21) | Not Present | | **N/A - Not Displayed** | |
| GDU # 4 (6.21) | Not Present | | **N/A - Not Displayed** | |
| Transponder # 1 | Present | GTX w/TIS+<br>(or)<br>GTX Mode S+ | | |
| Transponder # 2 | Not Present | | | |
| GSR 56 | Not Present | | | |

-NOTE-

As required, use the up or down arrow keys to view all the parameters fields.

51. From the *GTN Setup* page using the “back” key.
    ***Main Indicator (Analog)* (key) – Press.**
    View the *Main Indicator (Analog) Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Selected Course | ---- | | |
| Calibrate OBS Resolver | Calibrate | | |
| CDI Key | Disabled | | |
| **Selected Course for GPS** | Allowed (4.0)<br>Ignored (6.21) | Allowed | Ignored |
| Selected Course for VLOC | Ignored | | |
| V-Flag State | Normal | | |

52. From the *GTN Setup* page using the “back” key.
    ***Main System* (key) – Press.**
    View the *Main System Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airframe Type | Rotorcraft | | |
| Air / Ground Threshold | 30 KT | | |
| Air / Ground Discrete | Active for Ground | | |
| GPS Antenna Height Above Ground | 7.8 FT | | |
| Fuel Type | Jet A | | |
| GSP Select | Auto | | |
| Heading Source Input | Connected | | |
| Radio Altimeter Input | Not Connected | | |
| Altitude Source Input | Connected | | |
| Enhanced Lighting Mode | Disabled | | |
| Crossfill Status Alert | Enabled | | |
| System ID (6.21) | GTN 2 | **N/A - Not Displayed** | |
| Database SYNC (6.21) | Pilot Control | **N/A - Not Displayed** | |
| Airspace Labels (6.21) | Enabled | **N/A - Not Displayed** | |
| **Checklist Page Title** (6.21) | Task List | **N/A - Not Displayed** | |
| Blackout Mode (6.21) | Disabled | **N/A - Not Displayed** | |

53. From the *GTN Setup* page using the “back” key.
    ***Lighting* (key) – Press.**
    View the *Lighting Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Source (Display) | Photocell | | |
| **Minimum Level** (Display) | 1.00% | | |
| Source (Keys) | Photocell | | |
| **Minimum Level** (Keys) | 1.00% | | |

54. *Configure Lighting Bus*. (Reserved)

55. From the *Lighting Configuration* page.
    ***Configure Photocell* (key) – Press.**
    View the *Photocell Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Response Time | 2 SEC | | |
| Slope | 50 | | |
| Offset | 50 | | |
| **Key Backlight Cutoff** (Photocell Override) | 75% | | |
| **Photocell Transition** (Photocell Override) | 5% | | |

56. From the *GTN Setup* page using the “back” key.
    ***Audio* (key) – Press**.
    View the *Audio Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Alert Volume | 60% | | |
| Test Sound | Altitude | | |

57. From the *GTN Setup* page using the “back” key.
***Traffic* (key) – Press.**
View the *Traffic Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Traffic Intruder Symbol Color | Cyan | | |
| GTN Control of Traffic System | No | | |

58. From the *GTN Setup* page using the “back” key
***Com* (key) – Press**.
View the *Com Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Com Radio | Enabled | | |
| Com Squelch Mode (6.21) | Basic | **N/A - Not Displayed** | |
| Com RF Squelch | 45% | | |
| Mic 1 Gain | + 12 DB | | |
| Sidetone Source (6.21) | External | **N/A - Not Displayed** | |
| Sidetone Volume | + 55 DB | | |

59. From the *GTN Setup* page using the “back” key
***VOR/LOC/GS* (key) – Press.**
View the *VOR/LOC/GS Configuration* page.

| **Parameter** | **(selection)** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| Nav Radio | - | Enabled | | |
| Selected Course | - | --- | | |
| Calibrate OBS Resolver | - | Calibrate | | |
| ARINC 429 Configuration | (Tx Speed) LOW | (SDI) VOR/ILS 2 | | |
| DME Mode | - | Directed Freq 1 | | |
| DME Channel Mode | - | King Serial | | |

60. From the *GTN Setup* page using the “back” key.
***Discrete* (key) – Press.**
View the *Discrete Configuration* page.

-NOTE-

**J1002-01, J1005-33, J1005-54, J1001-15, J1001-52** and **J1001-56** are non-configurable default settings.

| **Pin** | **Function (selection)** | **Direction** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|---|
| J1001-16 | Day/Night | In | | |
| J1001-36 | Off | In | | |
| J1001-37 | Off | In | | |
| J1001-38 | Air/Ground | In | | |
| J1001-39 | Off | In | | |
| J1002-10 | System ID Program/OFF | In | (Default Setting) | OFF |
| J1002-11 | Off | In | | |
| J1001-14 | Off | Out | | |
| J1001-33 | Off | Out | | |
| J1001-34 | Off | Out | | |
| J1001-35 | Off | Out | | |
| J1001-53 | Off | Out | | |
| J1001-54 | Off | Out | | |
| J1001-55 | Off | Out | | |
| J1001-57 | Off | Out | | |
| J1001-71 | Off | Out | | |
| J1001-72 | Off | Out | | |
| J1001-73 | Off | Out | | |
| J1001-74 | Off | Out | | |
| J1001-75 | Off | Out | | |
| J1001-76 | Off | Out | | |
| J1002-03 | Off | Out | | |
| J1002-12 | Off | Out | | |

61. From the *GTN Setup* page using the “back” key.

PART 2 / SW version 4.0 (configuration record)
***Waypoint* (key) – Press.**
View the *Waypoint Configuration* page.

PART 6 / SW version 6.21 (configuration set-up/verification)
***Navigation Features* (key) – Press.**
View the *Navigation Features Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Mark On Target | Disabled | | |
| RF Procedure Legs (6.21) | Disabled | **N/A - Not Displayed** | |

62. From the *GTN Setup* page using the “back” key.

PART2 / SW version 4.0 (configuration record)
This Step is not applicable. Proceed to the Step 63.

PART 6 / SW version 6.21 (configuration set-up/verification)
***Ownship* (key) – Press**.
View the *Ownship Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| **Color Ownship** (6.21) | Enabled (green bar = active) | **N/A - Not Displayed** | |
| **Ownship Icon** (6.21) | 4-Blade Rotorcraft (Highlighted in blue) | **N/A - Not Displayed** | |

63. This Step ensures selections made prior to this point are saved

PART 2 / SW Version 4.0 (configuration record)
This Step is not applicable. Proceed to the Step 64.

PART 6 / SW version 6.21 (configuration set-up/verification)
From the *GTN Setup* page.
***Update Config Module* (key) – Press** (Figure 15)
Confirm the "*Update Config module?*" window is displayed. Press **YES**.
Confirm the "*Config Module Update Complete*" window is displayed. Press **OK**.

Figure 15 - Update Config Module key

64. From the *Configuration Mode* page using the “back” key.
    ***GTN Options* (key) – Press**.
    View the *GTN Options* page
    ***Terrain* (key) – Press.**
    View the *Terrain Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Terrain Mode (green bar = active) | HTerrain Proximity<br><br>(The HTAWS feature is only installed on the GTN 750 and not on the GTN 650 per the 429-706-639-101 kit) | | |
| HTAWS Audio (HTAWS Configuration) | (Although defaults setting is displayed, they are not enabled on the GTN 650) | | |
| Airport Criteria (HTAWS Configuration) | (Although defaults setting is displayed, they are not enabled on the GTN 650) | | |
| Minimum Length (HTAWS Configuration) | (Although defaults setting is displayed, they are not enabled on the GTN 650) | | |

65. From the *GTN Options* page using the “back” key
    ***Com Transmit Power* (key) – Press.**
    View the *Com Transmit Power Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Com transmit Power (green bar = active) | Normal<br><br>(or)<br><br>16W<br>(This is an optional feature. Enablement card required) (429-706-639-105) | | 16W: As required, refer to the applicable MM or MMS after this Technical Bulletin has been complied with. |

66. From the *GTN Options* page using the “back” key.

PART 2 / SW version 4.0 (configuration record)
This Step is not applicable. Proceed to step 67.

PART 6 / SW version 6.21 (configuration set-up/verification)
***Search and Rescue* (key) – Press.**
View the *Search and Rescue Configuration* page.
For future reference only. Proceed to step 67.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Search and Rescue (6.21) (green bar = active) | This is an optional feature. Enablement card required. (429-706-639-107) | **N/A - Not Displayed** | SAR: As required, refer to the applicable Installation Instruction after this Technical Bulletin has been complied with. |
| Parallel Track (6.21) (SAR Patterns) | Refer to note above. | **N/A - Not Displayed** | |
| Sector Search (6.21) (SAR Patterns) | Refer to note above. | **N/A - Not Displayed** | |
| Expanding Square (6.21) (SAR Patterns) | Refer to note above. | **N/A - Not Displayed** | |
| Orbit (6.21) (SAR Patterns) | Refer to note above. | **N/A - Not Displayed** | |

67. From the *Configuration Mode* page using the “back” key.
***External Systems* (key) – Press**.
View the *External Systems* page.
***XPDR* (key) – Press.**
View the *XPDR 1 Configuration* page.
***Inputs and Outputs* (key) – Press.**
View the *XPDR 1 Inputs/Outputs* page.
(The RS-232 Configuration page should be displayed by default)

| RS-232 Configuration | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | Input | Output | Baud | Parity | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
| **Port 1** | Remote | Remote w/TIS<br><br>(or)<br><br>Remote | **19200** | No Parity | | |
| **Port 2** | Remote | Remote w/TIS<br><br>(or)<br><br>Remote | **19200** | No Parity | | |

**A429 (key) – Press.**

| ARINC 429 Configuration | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | Input | Speed | Output | Speed | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
| Port 1 | AHRS | High | Off | High | | |
| Port 2 | Off | Low | Off | High | | |
| Port 3 | Off | Low | - | - | | |
| Port 4 | Off | High | - | - | | |

68. From the *XPDR 1 Configuration* page using the “back” key.
***Installation Settings (*key) – Press**.
View the *XPDR 1 Installation Settings* page.

| **Parameter** | **(selection)** | | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** | |
|---|---|---|---|---|---|---|
| VFR Button Code | 1200 | | | | | |
| Aircraft Weight | Rotorcraft | | | | | |
| Auto Standby Delay | 24 SEC | | | | | |
| Altitude Climb Rate For AirborneTransition | 500 FPM | | | | | |
| Air/Ground Logic | Squat Switch | | | | | |
| Squat Switch Sense | Low | | | | | |
| Max Speed | <=150 KT | | | | | |
| Address Type | **US TAIL** (for US registered) or **HEX ID** (for all others) | | | | | |
| Address | Enter the US tail number otherwise enter the mode S, 6-digit Hexadecimal address. | | | | | |
| Flight ID Type | **SAME AS TAIL** (US) or **CONFIG ENTRY** (All others) | | | | | |
| Flight ID | (Enter the aircraft registration tail number) | | | | | |
| Aircraft Length | LE_15 | | | | | |
| Aircraft Width | LE_11_5 | | | | | |
| Enhance Surveillance | Disabled | | | | | |
| Surveillance Integrity Level | 10ˆ-7 | | | | | |
| Temperature Switch Installed | No | | | | | |
| ADS-B Out (6.21) | Pilot Select | | **N/A – Not Displayed** | | | |
| 1090ES (4.0)<br>1090 Input (6.21) | Disabled | | | | | |
| UAT Input | Disabled | | | | | |
| GPS Antenna Longitudinal Offset | 2M | | | | | |
| GPS Antenna Lateral Offset | 0M | Left | | | | |

69. From the *XPDR 1 Configuration* page using the “back” key.
    ***Audio Config (*key) – Press.**
    View the *XPDR 1 Audio Configuration* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude Monitor | Off | | |
| Count Down | Off | | |
| TIS Alert | Message<br><br>(or)<br><br>Off | | |
| Voice Setting | FEMALE | | |
| Volume | +47 DB | | |
| Test Tone (6.21) | 500 HZ Tone<br><br>(or)<br><br>“As desired” | **N/A - Not Displayed** | |
| Test Audio (6.21) | Leaving Altitude<br><br>(or)<br><br>“As desired” | **N/A - Not Displayed** | |

70. Cycle the **GTN 650** power. Allow time for the unit to power-up normally.

71. Depress the **“HOME”** button twice to display the HOME page.

Figure 16 - System-Setup page (version 4.0)

Figure 17 - System -Setup page (version 6.21)

72. From the *HOME* page
    ***System* (key) – Press.**
    View the *System* page
    ***Setup* (key) – Press.**
    View the *System* - Setup page (Figure 16 for PART 2, Figure 17 for PART 6)

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Crossfill (key) | ON<br>(green bar = active) | | |
| Com Channel Spacing (4.0)<br>(As required by local civil aviation authorities) | 25 KHz<br><br>(or)<br><br>8.33 KHz | | (For GTN 650 with main software version 6.21, this parameter is set-up at Step 76) |

73. From the *System* - Setup page.
    ***CDI* (key) – Press.**
    View the *System - Setup CDI* page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| CDI Scale | Auto | | |
| ILS CDI Capture | Auto Switch | | |

74. From the *System*-Setup page using the "back" key.
    ***Date / Time* (key) – Press.**
    View the System – Setup Date/Time page

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Local Offset | Adjust from GMT as required. | | |
| Time Format | Local 24-hour | | |

75. From the *System*-Setup page using the "back" key.
    ***Nearest Airport* (key) – Press**.
    View the System – Setup Nearest Airport page

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Runway Surface | Any | | |
| Minimum Runway Length | 0 FT | | |

76. From the *System*-Setup page using the "back" key.
    ***COM / NAV* (key) – Press**.
    View the *System – Setup COM / NAV* page. (PART 6 only)

| | | | |
|---|---|---|---|
| Com Channel Spacing<br>(As required by local civil aviation authorities) | 25 KHz<br>(or)<br>8.33 KHz | For GTN 650 main software version 4.0, this parameter was set-up at Step 72. | |
| Reverse Frequency Lookup (6.21) | ON<br>(green bar = active) | N/A | |

77. Use the “back” key to view the *System* Page.
***Ownship (*key) – Press**.
View the *System*-Ownship page (PART 2 only)

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| (Aircraft representation) | 4-Blade Rotorcraft | | **N/A - This parameter has moved to Step 62.** |

78. Use the “back” key to view the *System* Page.
***Units (*key) – Press.**
View the *System*-Units page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude/Vertical Speed (6.21) | Feet (FT/FPM) (or) Meters (M/MPM) | **N/A - Not Displayed** | |
| Distance/Speed (6.21) | Nautical Miles (NM/KT) | **N/A - Not Displayed** | |
| Fuel | Pounds (LB) (or) Kilograms(KG) | | |
| NAV Angle | Magnetic (°) | | |
| Position Format (6.21) | LAT/LON | **N/A - Not Displayed** | |
| Pressure (6.21) | Inches of Mercury (IN) (or) Millibar (Mb) | **N/A - Not Displayed** | |
| Magnetic Variation | XX X | (Default) | |
| Temperature | Celsius (°C) | | |

79. Use the “back” key to view the *System* Page.
***Audio (*key) – Press.**
View the *System*-Audio page.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Click Volume | 40% | | |

80. From the *HOME* page.
    ***MAP* (key) – Press.**
    View the *MAP* page
    ***Menu* (key) – Press.**
    View the *Map Menu* page.
    ***Map Setup* (key) – Press.**
    View the *Map Setup* page (Figure 18)
    *Map* (tab) – Should be displayed by default

Figure - 18 Map Setup page

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Orientation | Heading Up | | |
| North Up Above | 40 NM | | |
| Auto Zoom | ON | | |
| Auto Zoom Min | 1.5 NM | | |
| Auto Zoom Max | 25 NM | | |
| Track Vector Length (6.21) | 60 SEC | **N/A - Not Displayed** | |
| NAV Range Ring | ON | | |
| **Fuel Range Ring** (6.21) | ON | **N/A - Not Displayed** | |
| **Fuel Reserve Time** (6.21) | 30 MIN | **N/A - Not Displayed** | |
| **TOPO Scale** | Off | | |
| Point Obstacle Range | 5 NM | | |
| Wire Obstacle Range / Hot Line Range (6.21) | 1.5 NM | **N/A - Not Displayed** | |

81. From the *Map Setup* page.
***Traffic (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Traffic Range | 25 NM | | |
| Traffic Type | All Traffic | | |

82. From the *Map Setup* page.
***Aviation (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airport Range | 25 NM | | |
| Heliports | ON | | |
| Safe Taxi Diagrams | 1 NM | | |
| Runway Extensions | 5NM | | |
| Intersection Range | 4 NM | | |
| NDB Range | 5 NM | | |
| VOR Range | 10 NM | | |
| User Waypoint Range | 5 NM | | |
| Airway Range | 25 NM | | |

83. From the *Map Setup* page.
***Land (*tab) – Press.**

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Road Detail | Normal | | |
| City Detail | Normal | | |
| State/Province Names | ON | | |
| River/Lake Detail | Normal | | |

84. From the *Map Setup* page.
***Airspace* (tab) – Press.**

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Airspace Label Range (6.21) | 25 NM | **N/A - Not Displayed** | |
| Smart Airspace | OFF | | |
| **Show Airspaces** | Below 12000 FT | | |
| CL B/TMA/AWY Range | 100 NM | | |
| CL C/CTA Range | 100 NM | | |
| CL A/D Range | 100 NM | | |
| Restricted Range | 100 NM | | |
| **MOA (Military) Range** | 40 NM | | |
| OTHER Range | 100 MN | | |

-NOTE-

As required, use the up or down arrow keys to view all the parameters fields.

85. From the *Map Menu* page using the "back" key.
***Map Overlays* (key) – Press**.
View the *Map Overlays* window.

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| TOPO | ON (green bar = active) | | |
| Terrain | ON (green bar = active) | | |
| Airways | Low | | |
| Traffic | ON (green bar = active) | | |

86. From the *HOME* page using the “back” key.
***Traffic* (key) – Press.** (Figure 19)
View the *Traffic* page. (Figure 20)

| **Parameter** | **(selection)** | **PART 2 GTN 650 configuration RECORD (SW version 4.0)** | **PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21)** |
|---|---|---|---|
| Altitude Filter | Unrestricted | | |

Figure 19 - Traffic key

Figure 20 - Traffic page / Altitude Filter key

87. From the *HOME* page using the “back” key.
    ***Map (*key) – Press.**
    View the *Map* page.
    ***Menu* (key) – Press** (Figure 21)
    View the *Map Menu* page.

| Parameter | (selection) | PART 2 GTN 650 configuration RECORD (SW version 4.0) | PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21) |
|---|---|---|---|
| Map Detail (Figure 22) | Most (Slide the screen cursor) | | |

Figure 21 - Map page / Menu key

Figure 22 - Map Menu page

88. ***Change data fields* (key) – Press.** (Figure 22)
    View the *Configure Nav Data Fields* page.

| Parameter | (selection) | PART 2 GTN 650 configuration RECORD (SW version 4.0) | PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21) |
|---|---|---|---|
| Upper left key (Press to configure) | Wind - Wind Speed and Direction | | |
| Lower left key (Press to configure) | DIS to Dest – Distance to Destination | | |
| Upper right key (Press to configure)) | Fuel Flow - Total Fuel Flow | | |
| Lower right key (Press to configure) | Generic Timer – Timer (Utilities) | | |

**PART 3: GTN 750 version 6.21 software suite upload and navigation database update.**

**PART 4: GTN 650 version 6.21 software suite upload and navigation database update.**

**PART 5: GTN 750 software verification and configuration set-up.**

**PART 6: GTN 650 Software verification and configuration set-up.**

**PART 7: Operational checks, restoration and aircraft maintenance records.**

**PART 3:** **GTN 750 version 6.21 software suite upload and navigation database update.** (Step 89 through 106)

-NOTE-

If upgrading from an older version of GTN Main Software (which is the main intent of this bulletin) from version 4.0 up to software version 6.21; proceed to Step 89.

-NOTE-

If backloading from a newer version of GTN Main Software (Example 8.2) down to version 6.21; it is recommended to first set the GTN system configuration settings to their default values by selecting the "*GTN diagnostics* key" (from the GTN Configuration page), to select the "*Clear Config Settings"* key and to select *"OK"* to confirm.

89. Pull the **GTN 650** unit Radio No.2 NAV/GPS (3450CB4) and COM (3450CB2) circuit breakers located on the forward RHS circuit breaker panel (3940A2).

90. Remove the NAV DATA card from the **GTN 750** unit SD card slot.

91. Insert the Loader Card (P/N 010-00969-36) into the GTN unit SD card slot

92. Press and hold the **GTN 750** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the screen displays "GARMIN".

93. From the *Configuration Mode* page.
    ***Update* (key) – Press.**

94. Verify and confirm the "On Card" software versions are as follows:

| **GTN 750** | **"On Card' Version Displayed** | √ |
|---|---|---|
| MAIN Board Software | 6.21 | |
| COM Board Software | 2.20 | |
| NAV Board Software | 6.02 | |
| WAAS Board Software | 5.2 | |

95. From the *Updates* page (Figure 23)
**_Select All_ (key) – Press.**

-NOTE-

If upgrading from an older version of GTN Main Software (which is the main intent of this bulletin) from version 4.0 up to software version 6.21; proceed to Step 96.

-NOTE-

If backloading from a newer version of GTN Main Software (Example 8.2) down to version 6.21; select only the version displayed "On Card" which do not match the version displayed as "Installed". Then proceed to Step 96.

96. From the *Updates* page (Figure 23)
**Update (key) – Press**.

Figure 23 - Updates page

97. The GTN will then display a *"Start GTN Software Updates?"* window.
**OK (key) – Press.** (Expect a 10 to 15 minute uploading time)

98. Once the "Update Complete" window is displayed; press "OK".

99. Remove electrical power from the aircraft.

100. Remove the version 6.21 Loader Card from the **GTN 750** unit SD card slot.

101. Insert the NAV DATA card (previously removed) into the **GTN 750** unit SD card slot.

102. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU) and allow the **GTN 750** to power-up normally.

103. The **GTN 750** will prompt the observer to update the Navigation, Obstacle (etc) Database.

104. From the *Incoming Databases from Datacard* page (Figure 24)
**Select All (key) – Press.**
**Start (key) – Press.**

Figure 24 - Incoming Databases from Datacard page

-NOTE-

If a new format Navigation database is already present on the database card, it can be installed. Otherwise, a database update must be downloaded from your provider.

105. Following the Navigation database update, ensure that a valid Navigation database is listed on the database verification screen. Once completed, press the “Continue” key twice.

106. Push/set the **GTN 650** unit Radio No.2 NAV/GPS (3450CB4) and COM (3450CB2) circuit breakers located on the forward RHS circuit breaker panel (3940A2).

**PART 4:** **GTN 650 version 6.21 software suite upload and navigation database update.** (Step 107 through 125)

-NOTE-

If upgrading from an older version of GTN Main Software (which is the main intent of this bulletin) from version 4.0 up to software version 6.21; proceed to Step 107.

-NOTE-

If backloading from a newer version of GTN Main Software (Example 8.2) down to version 6.21; it is recommended to first set the GTN system configuration settings to their default values by selecting the "*GTN diagnostics* key" (from the GTN Configuration page), to select the "*Clear Config Settings"* key and to select *"OK"* to confirm.

107. Pull the **GTN 750** unit Radio No.1 NAV/GPS (3450CB3) and COM (3450CB1) circuit breakers located on the forward LHS circuit breaker panel (3940A1).

108. Remove the NAV DATA card from the **GTN 650** unit SD card slot.

109. Insert the Loader Card (P/N 010-00969-36) into the **GTN 650** unit SD card slot

110. Press and hold the **GTN 650** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the screen displays "GARMIN".

111. From the *Configuration Mode* page.
***Update* (key) – Press.**

112. Verify and confirm the "On Card" software versions are as follows:

| **GTN 650** | **"On Card' Version Displayed** | √ |
|---|---|---|
| MAIN Board Software | 6.21 | |
| COM Board Software | 2.20 | |
| NAV Board Software | 6.02 | |
| WAAS Board Software | 5.2 | |

113. From the *Updates* page (Figure 25)
**_Select All_ (key) – Press.**

-NOTE-

If upgrading from an older version of GTN Main Software (which is the main intent of this bulletin) from version 4.0 up to software version 6.21; proceed to Step 114.

-NOTE-

If backloading from a newer version of GTN Main Software (Example 8.2) down to version 6.21; select only the version displayed "On Card" which do not match the version displayed as "Installed". Then proceed to Step 114.

114. From the *Updates* page (Figure 25)
**Update (key) – Press.**

Figure 25 - Updates page

115. The **GTN 650** will then display a *"Start GTN Software Updates?"* window.
**OK (key) – Press**. (Expect a 10 to 15 minute uploading time)

116. Once the "Update Complete" window is displayed; press "OK".

117. Remove electrical power from the aircraft.

118. Remove the version 6.21 Loader Card from the **GTN 650** unit SD card slot

119. Re-install the NAV DATA card (previously removed) into the **GTN 650** unit SD card slot.

120. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU) and allow the **GTN 650** to power-up normally.

121. The **GTN 650** will prompt the observer to update the Navigation, Obstacle (etc) database.

122. From the *Datacard Updates* page (Figure 26)
**Select All (key) – Press.**
**Start (key) – Press.**

Figure 26 - Datacard Updates page

-NOTE-

If a new format Navigation database is already present on the database card, it can be installed. Otherwise, a database update must be downloaded.

123. Following the Navigation database update, ensure that a valid Navigation database is listed on the database verification screen. Once completed, press the “Continue” key twice.

124. Push/Set the **GTN 750** unit Radio No.1 NAV/GPS (3450CB3) and COM (3450CB1) circuit breakers located on the forward LHS circuit breaker panel (3940A1).

125. Remove electrical power from the aircraft.

**PART 5: GTN 750 software verification and configuration set-up.**

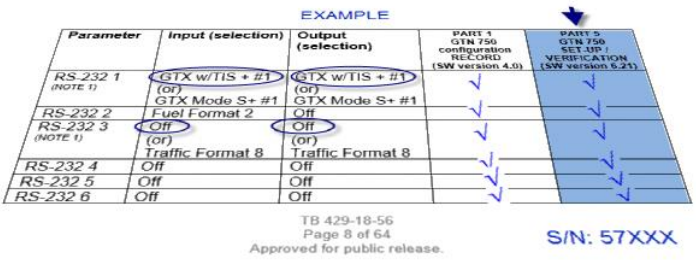
126. Pull the **GTN 650** unit Radio No.2 NAV/GPS (3450CB4) and COM (3450CB2) circuit breakers located on the forward RHS circuit breaker panel (3940A2).

127. Press and hold the **GTN 750** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the screen displays "GARMIN".

128. From the *Configuration Mode* page.
***System Information* (key) -Select**.
View the *System Information page.*

| Verify and confirm the **GTN 750** software versions are as follows: | **GTN 750** |
|---|---|
| **Main Board** | Verify (√) |
| Software Version: 6.21 | |
| FPGA Version: 2.2 | |
| **Touch Controller Board** | Verify (√) |
| Software Version: 2.10 | |
| **GPS/WAAS Board** | Verify (√) |
| Board Software: 5.2 | |
| **COM Board** | Verify (√) |
| Software Version: 2.20 | |
| FPGA Version: 2.4 | |
| **NAV Board** | Verify (√) |
| Software Version: 6.02 | |
| FPGA Version: 1.1 | |

129. Use the **GTN 750** configuration setting table's "**PART 5**" **column (Step 4 through 44)** to confirm each parameter selection is identical to the Part 1 record, or reflects the approved settings for software version 6.21. Press the "Update Config Module" (key) as often as required to save your settings. Track your progress by making a check mark (√) or by writing the exact setting nomenclature.




130. Push/Set the **GTN 650** unit Radio No.2 NAV/GPS (3450CB4) and COM (3450CB2) circuit breakers located on the forward RHS circuit breaker panel (3940A2).

**PART 6: GTN 650 Software verification and configuration set-up.**

131. Pull the **GTN 750** unit Radio No.1 NAV/GPS (3450CB3) and COM (3450CB1) circuit breakers located on the forward RHS circuit breaker panel (3940A1).

132. Press and hold the **GTN 650** "HOME" key. Apply electrical power (28 VDC) to the aircraft using an aircraft grade Ground Power Unit (GPU). Release the "HOME" key once the screen displays "GARMIN".

133. From the *Configuration Mode* page.
***System Information* (key) -Select.**
View the *System Information page.*

| Verify and confirm the **GTN 650** software versions are as follows: | **GTN 650** |
|---|---|
| **Main Board** | Verify (√) |
| Software Version: 6.21 | |
| FPGA Version: 2.2 | |
| **Touch Controller Board** | Verify (√) |
| Software Version: 2.10 | |
| **GPS/WAAS Board** | Verify (√) |
| Board Software: 5.2 | |
| **COM Board** | Verify (√) |
| Software Version: 2.20 | |
| FPGA Version: 2.4 | |
| **NAV Board** | Verify (√) |
| Software Version: 6.02 | |
| FPGA Version: 1.1 | |

134. Use the **GTN 650** configuration setting table's "**PART 6**" **column (Step 45 through 88)** to confirm each parameter selection is identical to the PART 2 record, or reflects the approved settings for software version 6.21. Press the "Update Config Module" (key) as often as required to save your settings. Track your progress by making a check mark (√) or by writing the exact setting nomenclature.

EXAMPLE

| Parameter | Input (selection) | Output (selection) | PART 2 GTN 650 configuration RECORD (SW version 4.0) | PART 6 GTN 650 SET-UP / VERIFICATION (SW version 6.21) |
|---|---|---|---|---|
| RS-232 1 | GTX w/TIS + #1 (or) GTX Mode S+ #1 | GTX w/TIS + #1 (or) GTX Mode S+ #1 | √ | √ |
| RS-232 2 | Fuel Format 2 | Off | √ | √ |
| RS-232 3 | Off (or) Traffic Format 8 | Off (or) Traffic Format 8 | √ | √ |
| RS-232 4 | Off | Off | √ | √ |

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135. Push/Set the **GTN 750** unit Radio No.1 NAV/GPS (3450CB3) and COM (3450CB1) circuit breakers located on the forward RHS circuit breaker panel (3940A1).

**PART 7: Operational checks, restoration and aircraft maintenance records.**

**WARNING**

Both GTN 750 and GTN 650 units must have been successfully upgraded to Main Software Version 6.21 (as described in this Technical Bulletin) and appropriately configured for operation in a Bell 429 prior to be released for service or flight. Dual GTN installation with mixed main software versions are incompatible and are not approved for service or flight.

136. Verify that each applicable GTN optional feature (Ex: Chartview, HTAWS, 16 W, etc) that requires an Enablement card. (BHT-429-MM, Chapter 97) is (or are) enabled. If installed at the factory; these Enablement cards were packed or bundled with the loose equipment of the aircraft during delivery.

137. Do an operational check of the GTN 750 NAV/COM/GPS. (BHT-429-MM, Chapter 97)

138. Do an operational check of the GTN 650 NAV/COM/GPS. (BHT-429-MM, Chapter 97)

139. Do an operational check of the GTX 33H ES Transponder. (BHT-429-MM, Chapter 97)

140. Do an operational check of the TCAS system (if installed) (BHT-429-MM, Chapter 97)

141. Return the aircraft to flight configuration.

142. Make an entry in the helicopter logbook and/or service records indicating compliance with this Technical Bulletin.

143. PSE recommends annexing the printed working copy of this Technical Bulletin to the aircraft records for future reference.

At your discretion and to enable Product Support Engineering to gather statistical data on Bell 429 field campaigns; please send a brief email to pseinter@bellflight.com with the following information:

*"B429 Serial number and registration markings indicating this Technical Bulletin (429-18-56) has been complied with"*