
Number: SB2X-42-18R3**Issued:** 12 Sep 2019**Revised:** 03 Jun 2020

SNS SUBJECT: 42-20 INTEGRATED MODULAR AVIONICS - Perspective+ S/W Update v2647.N2

1. COMPLIANCE

SR22T Serials: This Service Bulletin is **MANDATORY**. Accomplish this Service Bulletin at the next scheduled maintenance or annual inspection, whichever occurs first. Compliance time begins upon receipt of this Service Bulletin.

SR20 and SR22 Serials: This Service Bulletin is Optional. Accomplishment of this Service Bulletin is at the owner's option.

SR22T Serials: Operators who have successfully complied with Service Bulletin SB2X-42-16 for updating to Perspective+ Avionics s/w v2647.N2 need take no further action.

This Service Bulletin has been revised to change Accomplishment Instructions.

SR22 Serials 4435 thru 4593, and

SR22T Serials 1460, 1471, 1473 thru 1625, 1627 thru 1657:

- Operators who have successfully complied with the original release of this Service Bulletin, dated 12 Sep 2019, and have enabled Vref Airspeed Bug, contact Cirrus for disposition.
- Operators who have successfully complied with the original release of this Service Bulletin, dated 12 Sep 2019, or later revision and have not enabled Vref Airspeed Bug, need take no further action.

SR20 Serials 2339 & subs,

SR22 Serials 4594 and subs, and

SR22T Serials 1626, 1658 and subs: Operators who have complied with the original release of this Service Bulletin, dated 12 Sep 2019, or later revision need take no further action.

2. EFFECTIVITY

SR20 Serials 2339 & subs w/ Perspective+ Avionics s/w v2647.03 thru v2647.N1

SR22 Serials 4435 & subs w/ Perspective+ Avionics s/w v2647.03 thru v2647.N1

SR22T Serials 1460, 1471, 1473 and subs w/ Perspective+ Avionics s/w v2647.03 thru v2647.N1

Note: Affected versions of Perspective+ Avionics software include: v2647.04, v2647.M0, v2647.M4, and v2647.N1.

3. APPROVAL

FAA approval has been obtained on all technical data in this Service Bulletin that affects type design.

Aircraft not operating under FAA requirements and regulatory oversight: It is the operator's responsibility to ensure that installation of this Service Bulletin has been accepted by the local airworthiness authorities.

4. PURPOSE

For affected aircraft, this Service Bulletin provides instructions for Perspective+ Integrated Avionics System software update.

5. DESCRIPTION

This Service Bulletin describes installation of Perspective+ Integrated Avionics System software update v2647.N2. This incorporates minor bug fixes for aircraft upgrading from v2647.N1, and the following incremental enhancements for aircraft upgraded from v2647.M4. See SB2X-42-14 for the incremental enhancements for aircraft updated from v2647.M0 and prior.

A. v2647.N2 Software Change Synopsis

- (1) PFD
 - (a) Added new CAS messages for VNAV arming and selecting lower altitude to capture VPATH.
 - (b) Added new TAKEOFF FLAPS CAS message when the aircraft is not in takeoff flap configuration on the ground.
 - (c) Added new FLAPS CLIMB CAS message when aircraft is not in cruise climb flap configuration.
 - (d) Added "600 feet" callout when climbing through 600 ft. AGL.
 - (e) Calling and text messaging now available through the Garmin Pilot app w/ FS510 using the GSR 56.
 - (f) Added new ANTI ICE TEMP CAS message when temperature is too low for TKS system.
 - (g) Added ROL and HDG CAS messages for prolonged periods in ROL and HDG AFCS modes.
 - (h) Added HIGH FUEL FLOW CAS message for SR22T (above 42.0 GPH).
 - (i) Heading Sync selectable in NAV AFCS modes for HDG bug to follow current heading; Pressing HDG bug sync during roll causes HDG bug to follow current heading until roll-out is complete.
- (2) MFD/EIS
 - (a) Added glide range ring that shows glide to 1000 ft. AGL on maps.
 - (b) Taxi Fuel and MAC removed from Weight & Balance page, Fuel on Board now also shown in gallons.
- (3) Keypad (GCU)
 - (a) Temporary blue mode on keypad now available from FPL, Checklist, and other pages.
- (4) AFCS/FMS
 - (a) Flight plan origin and destination fields can now be changed without deleting the field contents first.
 - (b) Charts are now accessible while loading an approach without leaving selection menu.
 - (c) Enhanced Descent Only VNAV- Can now select "AT", "ABOVE", "BELOW" or "BETWEEN" altitude constraints.
 - (d) VNAV Guidance now provided for non-precision approaches.
 - (e) Along track waypoints can now span multiple legs.
 - (f) Takeoff vertical guidance arming now available (FD transitions from TO to FLC modes at 400 ft. AGL if armed).
- (5) Databases
 - (a) Database cross feed now goes from PFD to MFD during MFD replacement.
- (6) General
 - (a) Other minor bug fixes.

6. WARRANTY INFORMATION

For SR22T serials under warranty at the issue date of this Service Bulletin, Cirrus Design will cover all parts and labor costs for this Service Bulletin if the work is accomplished within the Compliance time period and the work is performed at an authorized Cirrus Design Service Center.

For SR20 and SR22 serials, part and labor cost for this Service Bulletin are at the owner's expense.

7. MANPOWER REQUIREMENTS

Serials w/o Ice Protection: 3.0 man-hours

Serials w/ Ice Protection: 3.5 man-hours

8. OTHER PUBLICATIONS AFFECTED

SR20 Pilot's Operating Handbook P/N 11934-005

SR22 Pilot's Operating Handbook P/N 13772-006

SR22T Pilot's Operating Handbook P/N 13772-007

TKS Anti-Ice SR22 POH Supplement P/N 13772-163

TKS Anti-Ice SR22T POH Supplement P/N 13772-161

9. WEIGHT AND BALANCE

N/A

10. MATERIAL INFORMATION

N/A

11. ACCOMPLISHMENT INSTRUCTIONS

A. Acquire necessary tools, equipment, and supplies.

Description	P/N or Spec.	Supplier	Purpose
Software Update Self-Extracting Executable File	38852-142 or 006-B2647-N2	Cirrus or Garmin Dealer Resource Center	Install software and configuration update files to SD Card.
SD Cards (2)	2, 4, or 8 GB	SanDisk Milpitas, CA 95035 408-801-1000	Upload software and configuration files.
Unlock Card(s) ¹	-	Garmin International, Inc. Olathe, KS 66062 888-606-5482	Unlock option software (if installed).
Airframe Images Compressed File (.zip)	-	Cirrus Service Center Website	Update SD card SPLASH data.
Crew Profile Compressed File (.zip)	-	Cirrus Service Center Website	Update SD card profile data.

1. Unlock card(s) for any previously installed option are retained with aircraft.

- (1) Contact Cirrus or visit Garmin Dealer Resource Center to obtain self-extracting executable file.
 - (a) Copy self-extracting executable file to working directory of Windows PC.
 - (b) Insert SD card into PC SD card slot.
 - (c) Double-click on self-extracting executable file.

Note: All existing data on SD card will be erased.
 - (d) Follow prompts to identify location of SD card, erase all SD card data, and install software. SD card will be reformatted and all software loader card files will be installed.
- (2) Obtain and download Airframe Images.zip file.
(<http://servicecenters.cirrusdesign.com/memberlogin.asp>)
 - (a) Select appropriate airframe model in POH drop down menu. Then select "Airframe Image/Crew Profile."
 - (b) Download appropriate Airframe Image Loader Card files to a working directory.
 - (c) Choose "Extract All" to transfer all data from Airframe Image Airframe Image (SPLASH.ZIP) file to SD card. This will replace existing data in top level loader card 'SPLASH.'
 - (d) Verify updated 'SPLASH' folder has content in each airframe folder.
 - (e) Remove SD card from PC SD card slot.
 - (f) Label "2647.N2" on SD card.
- (3) Obtain and download Crew Profile.zip file.
(<http://servicecenters.cirrusdesign.com/memberlogin.asp>)
 - (a) Insert blank SD card into PC SD card slot.
 - (b) Select appropriate airframe model in POH drop down menu. Then select "Airframe Images/Crew Profile."
 - (c) Download appropriate Crew Profile Loader Card files to a working directory.
 - (d) Choose "Extract All" to transfer all data from Crew Profile (profiles.ZIP) file to SD card.
 - (e) Verify Crew Profile content is loaded on SD card.
 - (f) Remove SD card from PC SD card slot.
 - (g) Label "Cirrus Default" on SD card and retain SD card.

- B. Connect 24 - 28 VDC external power to external power receptacle.
- C. Pull STARTER and FUEL PUMP circuit breakers.
- D. Set BAT 1, BAT 2, and AVIONICS switches to ON positions.
- E. Verify display cooling fan and avionics cooling fan operation by visual or audible inspection.
- F. Verify no abnormal CAS messages are present.
- G. Verify GFC 700 Automatic Flight Control System preflight self test completes normally.
- H. On MFD, rotate outer [FMS] knob to select Aux group.
- I. Rotate inner [FMS] knob to select System Status page.
- J. Press MFD softkey labeled LRU, then rotate inner [FMS] knob to verify all installed avionics display green check marks. Troubleshoot and resolve any failure indications prior to updating software.

CAUTION: Software configuration options must be accurately recorded prior to initiating software and configuration loading. Once airframe configuration load is initiated, all digital traces of any currently installed configuration options, Marker Beacon Sensitivity, and Weight and Balance Configuration settings will be overwritten. If those values are not recorded, a series of test flights may be required to adjust sensitivity properly.

Pilot saved data will be deleted during software loading process. If desired, data should be recorded manually before beginning software loading process.

- K. Using PRE-LOAD column in Installed Options Checklist and Worksheet, check applicable installed options. The Installed Options Checklist and Worksheet will be used to select basic airframe configuration and optional configuration items during the software loading process. (See Figure 1)

Note: Navigate subsequent pages by use of MFD/PFD controls.

- To change page groups or move between data fields, rotate outer dial of [FMS] knob.
- To change pages in group or change field that cursor is on, rotate inner dial of [FMS] knob.
- To activate cursor, press inner dial of [FMS] knob.
- To cancel selection, press inner dial of [FMS] knob in again, deactivating cursor. [CLR] key may also be pressed to cancel a selection or deactivate cursor.
- To accept entry of current selection, press [ENT] key.

- L. Using ACTIVE VALUE column in Marker Beacon Sensitivity Threshold table, check and record current thresholds for marker beacon sensitivity as follows: (See Figure 2)
 - (1) While holding far right softkey on PFD, set BAT 2 switch to ON position and hold softkey until "INITIALIZING SYSTEM" appears to boot the PFD in Configuration mode.
 - (2) While holding far right softkey on MFD, set BAT 1 and AVIONICS switches to ON positions and hold softkey until "INITIALIZING SYSTEM" appears to boot the MFD in Configuration mode.
 - (3) On PFD, rotate outer [FMS] knob to select GMA group.
 - (a) Rotate inner [FMS] knob to select GMA Marker Beacon Configuration page.
 - (b) In MARKER BEACON field, note current ACTIVE values for "HI SENSITIVITY OFFSET" and "LO SENSITIVITY OFFSET".
 - (4) Use current weight and balance configuration to record current values. (See Figure 3)
 - (a) On PFD, rotate outer [FMS] knob to select System group.
 - 1 Rotate inner [FMS] knob to select Weight and Balance Configuration Page.
 - 2 In Empty Wt field, record active values for "Empty Weight" and "Arm."

M. Load updated MFD and PFD software.

CAUTION: This procedure has changed. Follow instructions or loss of data will result, including reset of fuel calibration, and loss of system software unlock cards.

- (1) Pull PFD circuit breakers.
- (2) Remove and retain any SD cards or FlightStream 510 from top and bottom SD card slots on MFD and PFD.
- (3) Load MFD software files.
 - (a) Insert Loader Card into top SD card slot of MFD.
 - (b) While holding far right softkey on MFD, set BAT 1 and AVIONICS switches to ON positions and hold softkey until "INITIALIZING SYSTEM" appears to boot MFD in Configuration mode.
 - (c) Press [YES] softkey to acknowledge prompt to update system files. Verify "Updating System Files Please Wait" message appears.
 - (d) When prompted, press [YES] softkey to acknowledge prompt to load custom graphics file (updated splash screens named ARFRM_IMGS_NXI.ZIP).
 - (e) Verify System Status page appears, wait one minute for transfer and registry updates of system files to complete, then pull MFD circuit breakers.
 - (f) If System Status page does not appear, MFD continues to reboot, or MFD displays yellow caution message, pull MFD circuit breakers and repeat procedure to load updated MFD software files.
 - (g) Remove Loader Card from top SD card slot of MFD.
- (4) Load PFD software files.
 - (a) Insert Loader Card into top SD card slot of PFD.
 - (b) While holding far right softkey, or [ENT] key, on PFD, reset PFD circuit breakers and hold softkey until "INITIALIZING SYSTEM" appears to restart PFD in Configuration mode.
 - (c) Press [YES] softkey to acknowledge prompt to update system files. Verify "Updating System Files Please Wait" message appears.

Note: Do not pull PFD circuit breakers.
 - (d) Press [YES] softkey to acknowledge prompt to update system files.
 - (e) If system file updates are complete, verify PFD starts in Configuration mode.
 - (f) Wait one minute.
 - (g) Pull PFD circuit breakers.
 - (h) While holding far right softkey, or [ENT] key, on PFD, reset PFD circuit breakers.
 - (i) Verify System Upload page appears on PFD.
 - (j) If System Upload page does not appear, PFD continues to reboot, or PFD displays yellow caution message, pull PFD A and PFD B circuit breakers and repeat procedure to load updated PFD software files.
 - (k) While holding far right softkey on MFD, set BAT 1 and AVIONICS switches to ON positions and hold softkey until "INITIALIZING SYSTEM" appears to boot MFD in Configuration mode.
 - (l) Verify MFD displays System Status page.

N. Load software for base aircraft.

CAUTION: For remaining software installation/configuration procedures, MFD and PFD must be in configuration mode. Do not operate MFD while loading software or configuration files unless specifically instructed to do so. A failed or canceled load may result.

- (1) On PFD, rotate outer [FMS] knob to select System group.
- (2) Rotate inner [FMS] knob to select System Upload page.
- (3) Press inner [FMS] knob to activate cursor.
- (4) Rotate inner [FMS] knob to highlight options in CARD field.
- (5) Select "SD Card" in CARD field. Press [ENT] key to accept.
- (6) Rotate inner [FMS] knob to highlight airframe type in GROUP field.

Note: Loading base aircraft type overwrites all previously installed software options and configuration settings.

GROUP menu selections for aircraft type include:

- 01-Cirrus SR20
 - 02-Cirrus SR22
 - 03-Cirrus SR22 Turbo
- (7) Set GROUP to appropriate aircraft type. Press [ENT] key to accept.
 - (8) Once airframe type is selected, cursor moves to ITEM field. Rotate inner [FMS] knob to activate drop-down menu. Rotate inner [FMS] knob to move cursor to highlight appropriate aircraft model. Press [ENT] key to accept.
 - (9) Verify PRODUCT window populates and displays software/configuration file information for each Perspective+ LRU.
 - (10) Verify LRU VERS column shows currently loaded software version in LRU, and CARD VERS column shows LRU software version stored on Loader Card.

Note: Each check in SOFTWARE and CONFIGURATION columns designates a file to be loaded to applicable Perspective+ LRU.

By default, if different versions are displayed between LRU VERS and CARD VERS columns, SOFTWARE and CONFIGURATION boxes are automatically checked.

- (11) Verify all applicable software and configuration files are checked, and press [LOAD] softkey. System automatically begins uploading software and configuration files to selected LRUs.

Note: If software or configuration files fail to load, refer to Cirrus Perspective+ Line Maintenance Manual for troubleshooting.

- (12) After system successfully uploads, verify that each previously checked box indicates "PASS" in green when uploading process has completed and inspect SUMMARY window to verify that upload is successful. Press [ENT] key to acknowledge that upload is complete.

O. Procedure - Install Aircraft Configuration Options

Note: If configuration for an optional system is inadvertently loaded for a system that is not installed, base aircraft configuration files must be reloaded. Additionally, any optional systems that had been configured will also need to be reconfigured.

For aircraft equipped with multiple data link options, each option should be loaded in order shown in ITEM menu.

- (1) Ensure PFD and MFD are in Configuration mode, and Loader Card is installed in top SD card slot in PFD.
- (2) On PFD, rotate outer [FMS] knob to select System group.
- (3) Rotate inner [FMS] knob to select System Upload page.
- (4) With cursor active in GROUP field, rotate inner [FMS] knob once to activate GROUP menu.

Note: GROUP menu selections for aircraft options include:

- 10-AHRS ADC Options
- 30-Autopilot Options
- 40-Transponder Options
- 50-Traffic Options
- 60-Data Link Options
- 70-Audio Panel Options
- 80-Other Options
- 90-Ice Protection Options

- (5) Rotate inner [FMS] knob to select appropriate aircraft configuration or option folder from GROUP window (e.g. 10-AHRS ADC Options) and press [ENT] key.
- (6) With cursor active in ITEM field, rotate inner [FMS] knob once to activate ITEM window.

Note: Using POST LOAD column in Installed Options Checklist and Worksheet, check applicable installed options as software is configured. (See Figure 1)

- (7) From ITEM window, select appropriate option title for option being installed (e.g., Dual GSU 75 ADAHRS Installation Option) and press [ENT] key.
- (8) Press [LOAD] softkey.
- (9) Monitor status of upload. When upload is completed, press [ENT] key.
- (10) View SUMMARY field and ensure that all items indicate "COMPLETED". Verify "PASS" appears in green at all available check boxes.

P. Repeat Procedure - Install Aircraft Configuration Options for all applicable installed options by following the Installed Options Checklist and Worksheet.

Q. Enter Aircraft Configuration data.

- (1) Rotate inner [FMS] knob to select Aircraft Configuration page.
- (2) Press inner [FMS] knob to activate cursor. Cursor will appear in AIRCRAFT REGISTRATION field.
- (3) Use inner and outer [FMS] knobs on PFD to enter registration number for aircraft.
- (4) Press [ENT] key to accept registration number.
- (5) Position cursor at ICAO ADDRESS field, then press [CLR] key to clear field.
- (6) Press [ENT] key to prompt system to derive ICAO address from aircraft registration.
Note: If aircraft is not US registered, manually enter ICAO address.
- (7) Position cursor at VFR CODE field. Verify that VFR code is pre-configured for "1200" or applicable code for country of registration.
- (8) Press [ENT] key to accept VFR code.
- (9) *Serials with GTS800:* Press Set GTS softkey to cross-fill ICAO ADDRESS to GTS 800 traffic system. Press [ENT] key to confirm cross-fill.
- (10) *Serials with GTS800:* Press [ENT] key to acknowledge successful cross-fill.

R. Procedure - Configure Marker Beacon Thresholds

- (1) Confirm PFD and MFD remain in Configuration mode.
- (2) On PFD, rotate outer [FMS] knob to select GMA group.
- (3) Rotate inner [FMS] knob to select GMA Marker Beacon Configuration page.
- (4) Press inner [FMS] knob to activate cursor.
- (5) In MARKER BEACON field, scroll down SET column to highlight value for "HI SENSITIVITY OFFSET" and change value to match ACTIVE VALUE noted in Marker Beacon Sensitivity Threshold table. (See Figure 2)
- (6) Press [ENT] key to accept value.
- (7) Press [ENT] key to acknowledge "OK" in pop-up window.
- (8) Repeat Procedure - Configure Marker Beacon Thresholds for "LO SENSITIVITY OFFSET."

S. Confirm software load.

- (1) On PFD, rotate outer [FMS] knob to select System group.
- (2) Rotate inner [FMS] knob to select System Upload page.
- (3) Press [UPDT CFG] softkey to copy all configuration data to external configuration module. Press [ENT] key to confirm update.
- (4) Rotate inner [FMS] knob to select Configuration Management page.
- (5) Verify correct system part number (006-B2647-N2) and system software version (v2647.N2) are indicated in SYSTEM window.
 - (a) If incorrect software has been loaded in Garmin Avionics equipment, ensure appropriate Loader Card is being used and reload software as required.
- (6) Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.
- (7) Remove Loader Card from top SD card slot of PFD.

T. Verify configuration.

Note: This procedure may need to be repeated throughout the software loading process as options are loaded or tail numbers are updated to clear the "SYSTEM CONFIG - System config error. Config service req'd" message.

- (1) While holding far right softkey on bottom of PFD, restore power by selecting the BAT 2 switch on. Hold softkey until "INITIALIZING SYSTEM" appears to boot the PFD in Configuration mode.
- (2) While holding far right softkey on MFD, set BAT 1 and AVIONICS switches to ON positions and hold softkey until "INITIALIZING SYSTEM" appears to boot the MFD in Configuration mode.
- (3) On PFD, rotate inner [FMS] knob to select Configuration Manager page from System page group.
- (4) Ensure "Expected" and "Actual" Fleet and Aircraft Configuration ID fields match.
 - (a) If fields do not match, press the [CNFM CFG] softkey.
 - (b) Press [ENT] key to acknowledge "OK" in pop-up window.
 - (c) Verify "Expected" and "Actual" Fleet and Aircraft Configuration ID fields now match.

U. Procedure - Unlock Software To Enable Options

Note: The associated Unlock Card becomes locked to the system ID of the aircraft and must be retained with the aircraft for future updates. Options (if installed) requiring procedure to unlock software include: TAWS, Synthetic Vision, Chartview, SurfaceWatch, and ESP. Only install Chartview unlock if Jeppesen Chartview is desired.

- (1) Pull PFD circuit breaker.
- (2) Insert applicable Unlock Card into top SD card slot of PFD.
- (3) While holding far right softkey on PFD, reset PFD circuit breakers and hold softkey until "INITIALIZING SYSTEM" appears to boot PFD in Configuration mode.
- (4) On PFD, rotate outer [FMS] knob to select System group.

- (5) Rotate inner [FMS] knob to select System Upload page.
- (6) Press inner [FMS] knob to activate cursor. Rotate inner [FMS] knob to activate drop-down menu.
- (7) Highlight appropriate option selected for upload. Press [ENT] key to accept.
- (8) Once option is selected, configuration files in PRODUCT field will be displayed. All files should be checked. If not, press [CHK ALL] softkey.
- (9) Press [LOAD] softkey.
- (10) Ensure all items in SUMMARY window indicate "COMPLETE".
- (11) When upload is finished, press [ENT] key to acknowledge upload complete confirmation.
- (12) Press inner [FMS] knob to de-activate cursor.

Note: If multiple feature unlocks are to be installed, it is acceptable to pull PFD circuit breakers between each unlock in lieu of setting BAT 1, BAT 2, and AVIONICS switches to OFF positions.

- (13) Set BAT 1 and AVIONICS switches to OFF positions.
 - (14) Remove Unlock Card from top SD card slot of PFD and store in SD card holder to retain with aircraft.
- V. Repeat "Procedure - Unlock Software To Enable Options" to unlock other optionally installed systems as required.
- W. Optional: Update FlightStream 510.
- (1) If equipped, reinstall FlightStream 510 to bottom slot of MFD.
 - (2) Contact Garmin Dealer and update FlightStream 510 software to the latest version available.

Note: Alternatively, contact Cirrus Field Service for accomplishment instructions.

- X. Verify normal operation.

Note: Cards should be marked to identify PFD and MFD. MFD card should include checklists and startup screens.

- (1) Insert "Default Cirrus" SD card containing crew profile in top slot of MFD.
- (2) Set BAT 1 and AVIONICS switches to ON positions. Boot Avionics in normal mode and select Aux - System Setup on MFD.
- (3) Select [Import] softkey.
- (4) Verify "Default Cirrus" crew profile is imported.
- (5) Set BAT 1 and AVIONICS switches to OFF positions.
- (6) Remove "Default Cirrus" SD card from top slot of MFD and retain with aircraft.
- (7) Insert auxiliary data SD card containing startup screens and checklists in the top slot of MFD.
- (8) Set BAT 1 and AVIONICS switches to ON positions. Boot Avionics in normal mode.

Note: If unexpected CAS messages or failures display, refer to Cirrus Perspective+ Line Maintenance Manual for troubleshooting.

- (9) After both PFD and MFD complete boot up in normal mode, select Aux - System Status page on MFD.
- (10) Using [MFD1 DB/PFD1 DB] softkey and the [FMS] outer knob, scroll through list of MFD and PFD databases to ensure all databases are present and verification process is complete.
- (11) Verify airframe images (HSI Ownship Icon, VSD Ownship Icon, Map Ownship Icon, Weight and Balance Silhouette, MFD Splashscreen Image) are consistent with an SR2X airplane.
 - (a) If not correctly loaded, reload airframe images.
 - 1 Insert Loader Card into top SD card slot of MFD.

- 2 While holding far right softkey on MFD, set BAT 1 and AVIONICS switches to ON positions and hold softkey until "INITIALIZING SYSTEM" appears to boot MFD in Configuration mode.
- 3 Press [YES] softkey to acknowledge prompt to update system files.
- 4 Verify "Updating System Files Please Wait" message appears.
- 5 When prompted, press [YES] softkey to acknowledge prompt to load custom graphics file (updated splash screens named ARFRM_IMGS_NXI.ZIP).
- 6 Verify System Status page appears, wait one minute for transfer and registry updates of system files to complete, then pull MFD circuit breakers.
- 7 If System Status page does not appear, MFD continues to reboot, or MFD displays yellow caution message, pull MFD circuit breakers and repeat procedure to load updated MFD software files.
- 8 Remove Loader Card from top SD card slot of MFD.

Note: The message advisory "ESP FAIL - ESP" displays briefly during power up while AFCS completes automatic pre-flight check. Upon successful completion of AFCS pre-flight check, "ESP FAIL - ESP" should extinguish.

If message advisory "ESP CONFIG - ESP" is displayed when restarting in normal mode, one of the following has occurred:

- Software for ESP option was not installed as specified in Procedure - Install Aircraft Configuration Options.
- ESP option was not unlocked as specified in Procedure - Unlock Software To Enable Options.

Y. Procedure - Configure Weight and Balance

- (1) Confirm PFD and MFD remain in Configuration mode.
- (2) On PFD, rotate outer [FMS] knob to select System group.
- (3) Rotate inner [FMS] knob to select Weight and Balance Configuration page.
- (4) Press inner [FMS] knob to activate cursor.
- (5) In Empty Wt field, use [FMS] knobs to set Empty Weight (lbs) and press [ENT] key. (See Figure 3)
- (6) In Arm field, use [FMS] knobs to set Arm (inches) and press [ENT] key. (See Figure 3)

Z. Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.

AA. Reset STARTER, FUEL PUMP, PFD, and MFD circuit breakers.

AB. Disconnect 24 - 28 VDC external power from external power receptacle.

AC. Obtain latest revision of Perspective+ Integrated Avionics System Pilot's Guide P/N 190-02183-02 from Garmin website, <https://fly.garmin.com/fly-garmin/support/>, and retain for reference.

AD. Obtain latest revision of Cirrus Perspective+ Cockpit Reference Guide P/N 190-02184-02 from Garmin website, <https://fly.garmin.com/fly-garmin/support/>, and retain for cockpit reference.

AE. Complete airplane records by noting compliance with SB2X-42-18R3 in Aircraft Logbook.

To submit a Technical Publication change request, visit:
http://servicecenters.cirrusdesign.com/tech_pubs/SR2X/serviceform.asp
or contact us by email at techpubs@cirrusaircraft.com.



PRE-LOAD	POST-LOAD	Airframe/System Status:	NOTES
☐	☐	SR20, SR22, SR22T	Navigate to <u>Aux - System Status</u> page on MFD. Model is displayed in AIRFRAME field in upper right corner.
☐	☐	System ID: _____	Navigate to <u>Aux - System Status</u> page on MFD. System ID is displayed in AIRFRAME field in upper right corner.
☐		Checklist and Startup Screens: _____	After completion of software upgrade, download latest MFD Checklist file and Startup Screens file to MFD data logger card (top slot of MFD). After powering on MFD with the checklist file on the SD card it will be loaded onto on-board memory. If present, remove prior versions of MFD Checklist file and Startup Screens file from MFD Data Logging Card. Files can be downloaded at: http://servicecenters.cirrusdesign.com/tech_pubs/SR2X/
	☐	Checklist and Startup Screens: _____	
☐	☐	Synthetic Vision Unlock Card	Before beginning software and configuration loading process, determine which software unlock cards are available for the aircraft. These cards are locked to the aircraft and Perspective+ System ID number and should be kept with the aircraft at all times.
☐	☐	TAWS-B Unlock Card	
☐	☐	Enhanced AFCS Unlock Card	
☐	☐	Chartview Unlock Card	
☐	☐	Surface Watch Unlock Card	
PRE-LOAD	POST-LOAD	AHRS ADC Options (select one):	
☐	☐	Dual GSU 75 ADAHRS Installation Option	To verify which option is installed: 1) Ensure system is in normal mode. 2) Press [PFD OPT] softkey on PFD, then [SENSORS], and then [AHRS] softkey. 3) If dual ADAHRS are present, [AHRS1] and [AHRS2] softkeys will appear.
☐	☐	Single GSU 75 ADAHRS Installation Option	
PRE-LOAD	POST-LOAD	A/P Options (select all that apply):	Select GFC 700 option, and then YD only of Yaw Damper is installed.
☐	☐	GFC 700 Autopilot Installation Option	Aircraft is equipped with YD if the [YAW SERVO] circuit breaker is populated.
☐	☐	GFC 700 Add YD Installation Option	
PRE-LOAD	POST-LOAD	Transponder Options (select one):	To visually check GTX transponder P/N, access through aft avionics bay. Alternatively, while PFD is in configuration mode, navigate to <u>Aux - System Status</u> page to view GTX Description.
☐	☐	GTX 335 Installation Option	GTX 335R serial numbers begin with 3EF.
☐	☐	GTX 345 Installation Option	GTX 345R serial numbers begin with 3EH. See next step to determine if GTS 800 is installed.
☐	☐	GTX 345 w/ GTS Installation Option	
PRE-LOAD	POST-LOAD	Traffic Options (select one or none):	The aircraft may or may not be equipped with a traffic advisory system.
☐	☐	GTS 8XX Installation Option	Select for GTS 800. Verify GTS 800 is installed by navigating to <u>Aux - System Status</u> page and confirming it is listed. The aircraft will have a dual blade antenna on top of fuselage directly above center console.

Figure 1
Installed Options Checklist and Worksheet

PRE-LOAD	POST-LOAD	Data Link Options (select all that apply):	Verify GDL, and GSR components are installed by navigating to the <u>Aux - System Status</u> page and confirming applicable components are listed.
☐	☐	GDL 69/69A XM Installation Option	Select for Sirius/XM weather and entertainment reception.
☐	☐	GSR 56 (Voice/SMS/CONNEXT) Option	Select for Iridium with Garmin data services (CONNEXT is replacement for Garmin Flight Data Services (GFDS)). *If this option is selected and data services are not registered, a "REGISTER CONEXT" CAS message will be displayed.
☐	☐	GSR 56 (Voice/SMS) Option	Select for Iridium without CONNEXT or GFDS.
☐	☐	CONNEXT Position Reports Option	Select if CONNEXT Position Reporting is to be activated.
PRE-LOAD	POST-LOAD	Audio Panel Options (select one):	Visually inspect audio panel face plate to determine model.
☐	☐	GMA 350/350c Installation Option	Select if GMA 350 or 350c audio panel is installed.
☐	☐	GMA 350H/350Hc Installation Option	Select if GMA 350H or 350Hc audio panel is installed.
PRE-LOAD	POST-LOAD	Other Options (select all that apply):	
	☐	FliteCharts Installation Option	Load this option if only Jeppesen ChartView is to be activated.
☐	☐	EVS Installation Option	Verify installation of Enhanced Vision Camera under left wing.
☐	☐	KN63 DME Installation Option	Select if KN63 DME is installed. If installed, [DME] softkey will appear on PFD.
☐	☐	KR87 ADF Installation Option	Select if KR87 ADF is installed. Verify ADF Control Panel is installed in co-pilot side bolster panel.
☐	☐	Oxygen Installation Option	Select if Oxygen system is installed. Navigate to <u>Engine</u> page and verify oxygen quantity is displayed.
☐	☐	WX-500 Stormscope Installation Option	Select if WX-500 Stormscope is installed. Verify Stormscope map is available on MFD.
PRE-LOAD	POST-LOAD	Ice Protection Options (select one or none):	Aircraft with FIKI are equipped with deicing panels along the leading edges of the wings and horizontal stabilizer and two spray nozzles for windshield anti-icing.
☐	☐	Known IPS (FIKI) Digital Option	Select for aircraft with FIKI configured with digital TKS quantity sensors.
☐	☐	Enable Vref Airspeed Bug Option	Due to flight test validation requirements, this option can only be loaded on the following serials if equipped w/ FIKI: 22-4594 and subs 22T-1626, 1658 and subs

Figure 1
Installed Options Checklist and Worksheet (Continued)

ACTIVE VALUE ¹	Marker Beacon Threshold
	HI SENSITIVITY OFFSET
	LO SENSITIVITY OFFSET

1. Serials w/ GMA 350: In MARKER BEACON field, note current ACTIVE values for "HI SENSITIVITY OFFSET" and "LO SENSITIVITY OFFSET".

Figure 2
Marker Beacon Sensitivity Threshold Checklist

ACTIVE VALUE	Weight and Balance
	Empty Weight (lbs)
	Arm (inches)

Figure 3
Weight and Balance Configuration