# SERVICE BULLETIN

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| **Document Number:** | 601-00007-023 |
| **Title:** | EX500 Software Upgrade to 530-00163-000 Rev 00 |
| **Revision:** | 01 |
| **Date:** | 25 Feb 2005 |

## 1. Planning Information

### 1.1 Distribution/Eligibility

This Service Bulletin may be distributed only to those groups indicated below with a check mark:

| Group | Distribution? |
|---|:---:|
| Avidyne internal | √ |
| Avidyne-authorized Service Facility | √ |
| Avidyne Web Post | |
| Avidyne-authorized Installer | √ |
| Avidyne OEM customers | |
| End-use customers, owners and operators | |

The Accomplishment Instructions contained in Section 3 may only be performed by appropriately authorized Avidyne Service or Manufacturing Facilities, or by Avidyne Installers.

### 1.2 Effectivity/Compatibility

These instructions apply to production MFD's part number 700-00007-001, -002, -003, -004, -005, and -006, all revisions.

## 1.3 Concurrent Requirements

None

## 1.4 Reason

The procedure in this service bulletin will modify the software in the MFD to provide all existing functionality and the addition of XM weather support, TIS traffic sensor support, Interstate Highways on the map page and the optional function of CMax (Jeppesen charts).

## 1.5 Description

This service bulletin provides a procedure to update the MFD software to 530-00163-000 Rev 00.

## 1.6 Compliance

This Service Bulletin is optional.

## 1.7 Approval

The engineering data underlying the accomplishment instructions contained in Section 3 are FAA approved. No other portion of this service bulletin is FAA approved.

## 1.8 Time Required

Complying with this Service Bulletin should take one person less than 1 hour.

## 1.9 Weight and Balance

Not Applicable.

## 1.10 Electrical Load Data

Not Applicable.

## 1.11 Software Accomplishment

This service bulletin describes the installation of software which has been developed with a DO-178 level D compliant process.

## 1.12 Reference

N/A

### 1.13 Publications affected

The EX500 MFD Pilot's Guide part number 600-00078-000 Rev 04 or later contains setup and operating information for all functions included in software part number 530-00163-000. This Pilot's Guide (part number 600-00078-000 Rev 04 or later) must be delivered to the operator. The EX500 MFD Installation Manual part number 600-00079-000 Rev 05 or later contains information on installation, setup and checkout of all functions included in software part number 530-00163-000 Rev 00.

## 2. Material – Cost and Availability

Cost: Contact Avidyne Sales at 1-800-AVIDYNE.

Availability: The documents and required equipment to perform this Service Bulletin are available from Avidyne.

## 3. Accomplishment Instructions

### 3.1 Required Materials, supplied in upgrade kit

a. _____ Replacement CompactFlash, either:

- P/N 053-00163-002 Rev 00 (CMax NOT installed), OR

- P/N 053-00163-014 Rev 00 (CMax installed)

b. _____ "Configuration Save and Restore" zip disk, part number 054-0008-000 Rev 01

c. _____ EX500 Pilots Guide, P/N 600-00078-000 Rev 04

d. _____ EX500 Installation Manual, P/N 600-00079 Rev 05 (provided on CD-ROM)

e. _____ CMax Update Guide, P/N 600-00114-000 Rev 01 (provided only if CMax installed)

f. _____ Return mailer for original CompactFlash

g. _____ Two replacement Warranty stickers indicating accomplishment of this Service Bulletin

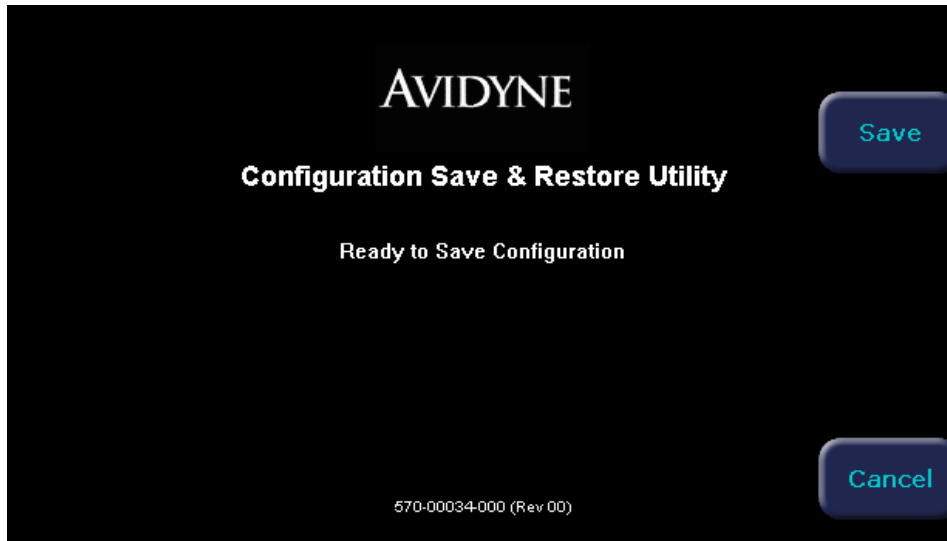### 3.2 Required Materials, NOT supplied in upgrade kit

a. _____ Avidyne data loader, either 100 MB or 250 MB (part number 200-00029-000 or 200-00048-000)

### 3.3 Accomplishment Procedure

1. _____ *Before removing the MFD from the aircraft*, attach the Avidyne data loader. Carefully lift up the right side of the data port cover on the MFD and pull it gently to the left to uncover the data port. **Do not rip the cover completely from the unit!** Connect one

end of the USB cable to the data loader and the other end to the EX500 data port on the front panel.

2. _____ Apply power to the MFD and wait for the FlightMAX logo screen with the black background to appear or 10 seconds to elapse (whichever comes first) and then insert the "Configuration Save and Restore Utility" zip disk, Avidyne part number 054-0008-000, into the data loader.



3. _____ When "Configuration Save & Restore Utility" is viewed on the screen, press **"Save".**

   **Note: The utility may be used multiple times, but will only store the most-recently saved data.**

4. _____ After the save has finished, the utility will eject the zip disk from the drive. Set aside this zip disk for the subsequent "restore" operation performed later.

5. _____ Remove power from the MFD.

6. _____ Loosen the unit rack locking key with a size 3/32" hex-wrench

   **Note: The length of this wrench must be a minimum of 2 inches.**

7. _____ Remove the unit from the radio rack.

The following steps should be performed on the bench. Power must NOT be applied to the unit. Use anti-static precautions when handling the unit. An anti-static wrist strap and mat are recommended. Place masking tape or other suitable material on the edges of the bezel and knobs to protect them from being scratched.

8. _____ Peel back aluminum tape from the bottom of the unit. Leave attached to the cover.



9. _____ Remove the 24x #4-40 Flathead Screws, and 3x black #4-40 Flathead Screws. Note that the Warranty-Voided stickers will need to be broken.
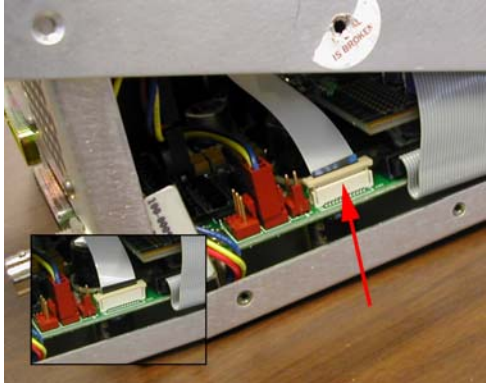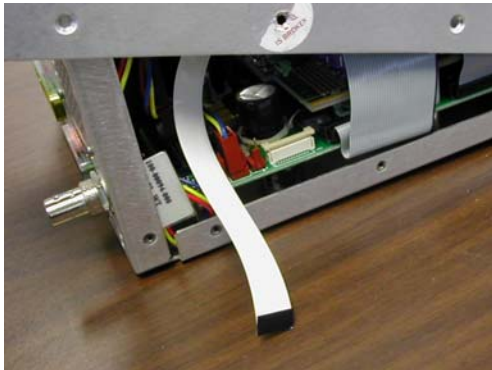


10. _____ Lift rear end of cover as shown.

11. \_\_\_\_\_ Slide cover back – front end may "stick" for first half-inch of travel.



12. \_\_\_\_\_ Lift rear of cover to reveal white Flex-Cable.



13. \_\_\_\_\_ Lift top of ZIF (Zero Insertion Force) connector up.

14. _____ Remove Flex-Cable from connector.

15. _____ Set cover aside. There is no need to remove the coax

16. _____ Remove the 3 rear-most #4-40 Flathead Screws from bottom of Display Assembly which connects the cover to the chassis.

17. _____ Slide Display Assembly forward.



18. _____ Remove CompactFlash.

19. _____ Replace with new CompactFlash from Avidyne.  The CompactFlash is oriented with the arrow up, and pointing in the direction of insertion.  It is keyed such that it will only go in one way, so no excessive force should be necessary.

20. _____ Place the original CompactFlash in the return mailer provided, and return to Avidyne.

21. _____ Visually inspect all the internal cables to ensure none have been disconnected during disassembly.

22. _____ Re-assemble Display Assembly with 3x #4-40 Flathead Screws.



23. _____ Position cover in place, holding the rear end up.



24. _____ Insert white Flex-Cable into ZIF connector. Make certain it is inserted until the cable hits the stop. Push top of ZIF connector down.

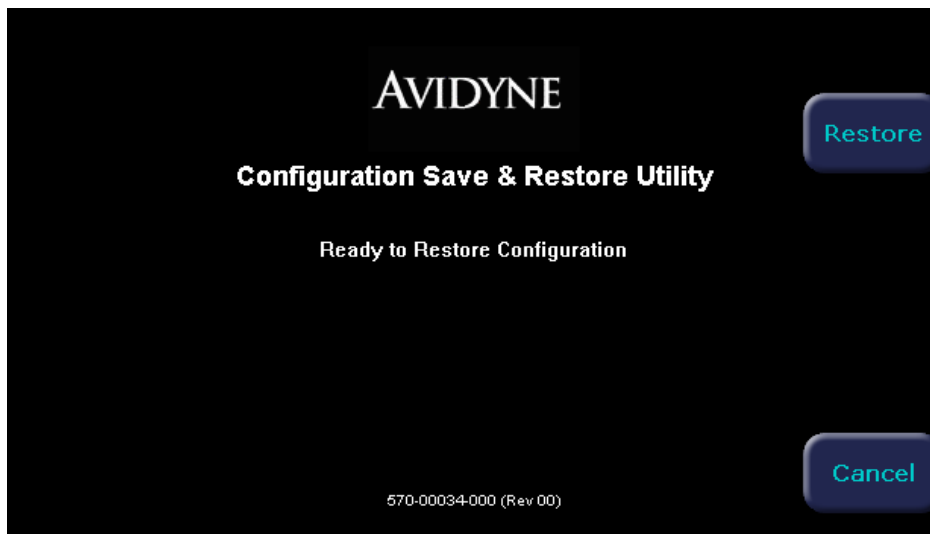25. _____ Squeeze front end of cover into bezel. It may be slightly stiff.



26. _____ Re-assemble cover with 24x #4-40 Flathead Screws and 3x black #4-40 Flathead Screws.

27. _____ Re-apply aluminum tape as shown.

28. _____ Apply the new Warranty stickers directly over the stickers broken in the previous steps.  It is not necessary to remove the broken sticker first.

29. _____ Reinstall unit in the aircraft.

30. _____ Power up the EX500 and verify that the software part number on the splash screen is 530-00163-000 Rev 00.

31. _____  Power down the EX500.

32. _____   Attach the data loader to the MFD.

33. ____  Apply power to the MFD and wait for the FlightMAX logo screen with the black background to appear or 10 seconds to elapse (whichever comes first) and then insert the "Configuration Save and Restore Utility" zip disk, Avidyne part number 054-0008-000, into the data loader.

34. _____ When "Configuration Save & Restore Utility" is viewed on the screen, press **"Restore".**



**35.** _____ At the end of the restore operation you will be prompted to enter the unit's serial number (printed on the label on the bottom of the unit). The serial number entered must be 8 characters long. The left hand knob (**position**) allows you to change the position of the cursor within the serial number and the right hand knob (**change**) allows you to change the characters in that position. **If the serial number is less than 8 characters, add leading zeros to make it 8 characters long**. **DO NOT enter trailing zeros.**

For example:

| Serial number on unit | Serial number to be entered |
|:---:|:---:|
| 1045 | 00001045 |
| B1023 | 000B1023 |
| 22345678 | 22345678 |

36. _____ Press the enter key after you have entered the serial number. The Zip disk will eject, and the EX500 will restart. Allow the unit to fully restart.

37. _____ Power down the EX500, then power it back up.

38. _____ Enter Maintenance Mode (from Aux, press the top and third buttons on the left side together and hold for a few seconds until Maintenance Mode appears.)

39. _____ Press "Restart System" and wait for the EX500 to shut down and restart.

**Note: Do not skip steps 37, 38 and 39. Doing so will prevent the Radar and TAWS pages from appearing on the EX500, and will prevent Synchro from being selected as the heading source!**

40. If the restore failed, this procedure may be retried. If the unit cannot be restored without failure the unit must be removed from service and returned to the factory for repair.

**Note: After performing a "Restore" operation, the Zip disk can only be used to "Restore" to that exact serial number EX500. This is true even if a new "Save" is performed. A new "Configuration Save and Restore Utility" Zip disk must be used for each EX500.**

## 4. Update Validation

41. _____ If it is not already running from the previous step, apply avionics power and allow the EX500 to fully initialize.

42. ____ Verify that the software version number is 530-00163-000 Rev 00 as shown near the bottom of the power-up screen. If the software version is incorrect, verify that you have installed the replacement CompactFlash. If you have installed the replacement CompactFlash, there is a problem with the unit. Contact Avidyne Technical support at 888-723-7592.

**NOTE: There is a change in the way time of day is stored on the MFD between software version 530-00163-000 Rev 00 and older versions of the software. Older software stored the time as Local time on the MFD, but software part number 530-00163-000 Rev 00 interprets that time as GMT. Failure to perform the following steps will affect the display of NEXRAD images from the weather datalink feature. This will result in "NXR obsolete" or "NXR invalid" messages.**

43. _____ Go to the **Aux** page and select **System Time**

44. _____ For the Time Source field, select **Manual Set**.

45. _____ Set the time and date to Greenwich Mean Time (GMT). Remember that the day of the week may be different under GMT than it is under Local time.

46. _____ In the **Time zone** field set the local time zone.

47. _____ Press the **Save** button to save the time settings

48. _____ If you wish to change the time source from Manual to another setting, press the **System time** button.

49. _____ Select the Time Source (**Manual Set, Datalink, GPS or Auto**). Note that most RS232 GPS interfaces do not provide time to the MFD. If you choose **GPS** for the time source, make sure the GPS is connected via the ARINC 429 port. If you choose **Auto** for the time source, make sure either the MFD is connected to an ARINC 429 GPS or the Narrowcast (Orbcomm) datalink is installed and enabled

50. _____ Using the MFD installation manual (part number 600-00079 Rev 05 or later) setup and checkout procedures, verify proper operation of the MFD with respect to other interfaced aircraft systems.

51. _____ Deliver the following documents to the operator:

- Pilots Guide (600-00078-000 Rev 04 or later)

- CMax Update Guide ( 600-00114-000 Rev 01 or later, if supplied)