



Pro Line 21 IFIS File Server Unit Troubleshooting

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FSU 5010 Instructions, Troubleshooting and Tips



TABLE OF CONTENTS

- Chart Calendar and Database Effectivity Dates
- Unlocking IFIS Charts
 - Linking the Chart and Navigation Database
 - Resolving Chart Access Issues with JSUM
- Checking the File Server FSA and ECU Part Number
- Entering the File Server EAK Codes
- Finding the XM Radio ID and Enabling XM
- Tip's and Tricks





Chart Calendar and Database Effectivity Dates.

Effective Database Dates

The Jeppesen Chart cycle is every two weeks. For a more specific schedule, please contact Jeppesen directly at 800.553.7750 or 303.328.4244. or www.jeppesen.com

Effective dates help standardize the worldwide flow of aeronautical information and updates. The International Civil Aviation Organization (ICAO) developed the Aeronautical Information Regulation and Control (AIRAC)¹ system, which has associated with it a series of effective dates. These dates occur on Thursdays at 28-day intervals and ensure significant changes only take effect on the predetermined AIRAC effective dates. Furthermore, aeronautical authorities are required to publish any changes under the AIRAC system with defined lead times to allow information to be distributed in advance of its effective date. Charts do not always include an effective date, but they will always have an issue date. Again, charts that do not have an effective date are considered effective (usable) upon receipt. Charts that include an effective date should only be used on or after that date, and if you really want to be exact:

FAA and Canada—Aeronautical information in the U.S., U.S. territories and Canada is generally effective on the designated effective date at 09:01 Coordinated Universal Time (UTC). The effective time applies to airspace, airways and flight procedures. It allows for implementation between 01:00 and 06:00 local standard time. Local authorities may change the date or time of implementation due to local operational considerations. Check NOTAMs and contact local ATC for information.

International—ICAO guidance specifies that aeronautical information should be effective on the designated effective date at 00:00 UTC. However, national and local authorities often change the effective time to allow for implementation during the local night or at other times due to local operational considerations. When an effective time other than 00:00 UTC is used, ICAO requires that it be published in the official Aeronautical Information Publication (AIP) of the country. Check NOTAMs and contact local ATC for information.

Source: http://ww1.jeppesen.com/documents/aviation/notices-alerts/revision_date_vs_effective_date.pdf

Chart Date Rules

You should load the Jeppesen chart database when it becomes available.

When the chart database is loaded prior to the effective date the File Server Database Effectivity page may indicate the database is out of date by showing not current in amber. Check the dates

The chart application shall set the Chart DB End Date to the date specified in the charts.ini file plus 6 days

[Commentary: *Jeppesen Integration calls for DB End Date to be set to DB Begin Date plus 14 days.*

However, we start our calculation with the DB End Date from the charts.ini file because we have a customer acceptance test DB which has a DB End Date far in the future and therefore should not expire.

We add 6 days to the Jeppesen DB End Date to provide time for distribution and loading of the next data base. Jeppesen confirms that this is the actual end date, but they could not correct their value because other customers have already patched to adapt to the erroneously early end date in the charts.ini file.]

Rules Continued

3. According to Jeppesen, you can load your CD once you receive it. If loaded prior to the effective date, the dates on the MFD Database Effectivity page will be in yellow and there will be a cautionary note stating the charts are not current. This is completely normal. The charts are designed to include a certain degree of overlap. The new chart information will represent the most up to date available and the dates will change to white and current as soon as it becomes the effective date.
4. Yellow (NOT CURRENT) means the information is out of the effective date range; either early or late. The date will turn white when it becomes effective, if you have loaded it early. If it is past the effectivity date you will need to load the new data.
5. All database data (Charts, Navigation, and Emaps) has both early and late cycle data which covers 56 days of database data. Some systems will show both at the same time and reflect the non current data in a yellow font color and current data in a white font color.

Example: **IFIS E-Maps-USB**

Eff: 13 Oct 16 to 09 Nov 16 AND 10 Nov 16 to 07 Dec 16 (9.24 MB)



Unlocking IFIS Charts

Linking the Chart and Navigation Database

Rules Loading Jeppesen Charts and E-Maps:

1. Charts must be loaded before the Jeppesen subscription key will be accepted by the FSU.
2. Jeppesen Charts and the FMS database must be linked before the chart main index focus box can scroll through the chart menu.
 - a. Look in the upper right of the chart main index for the FMSx label to see that the databases are linked.
 - b. If the label is “CHART PRESET” then the charts will not be linked.



NO CHART AVAILABLE

- Shows when a chart has yet to be selected.
- The previously selected chart was associated with an airport that has been removed from the CHART MAIN INDEX menu when the Display Chart State is entered.
- When the selected airport in the flight plan does not have a instrument procedure.

CHART FAULT

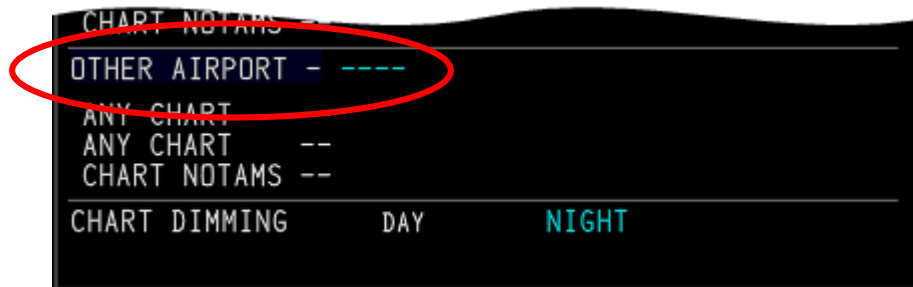
- Shows when the chart data is corrupted or the data cannot be retrieved.



Step 1. PFD, MFD Reversion

On occasion the Jeppesen charts can lock up on the MFD. Use the following steps to troubleshoot and clear the charts lock up issue that may be related to the Chart Preset condition that can sometimes occur. Doing a display reversion should restore chart menu status to FMSx.

By following these steps you should be able to clear the MFD from using a default value of Chart Preset to reestablish the FMS/Chart database link and retrieve charts from the FSU. Note: Manual selection of a chart is possible in Chart Preset from the "OTHER AIRPORT" selection of the Chart Main Index.



- With avionics power on find the reversionary switch for MFD/PFD displays and put the displays in the revisionary mode so the MFD screen is blank. After a few seconds revert the displays back to normal.

MFD Reset

- The display reversion switch is used to power-down a failed display, and to show combined PFD/MFD format on the remaining display. This is the only way to clear the MFD from using a default value of Chart Preset affecting the charts being displayed as well as the inability to scroll the focus box on some IFIS pages.
- The reversion procedure can be accomplished in flight if needed.

Step 2. Clear Remaining FMS Flight Plans

To reestablish the chart link between the FMS database and Jeppesen charts database you must do the following:

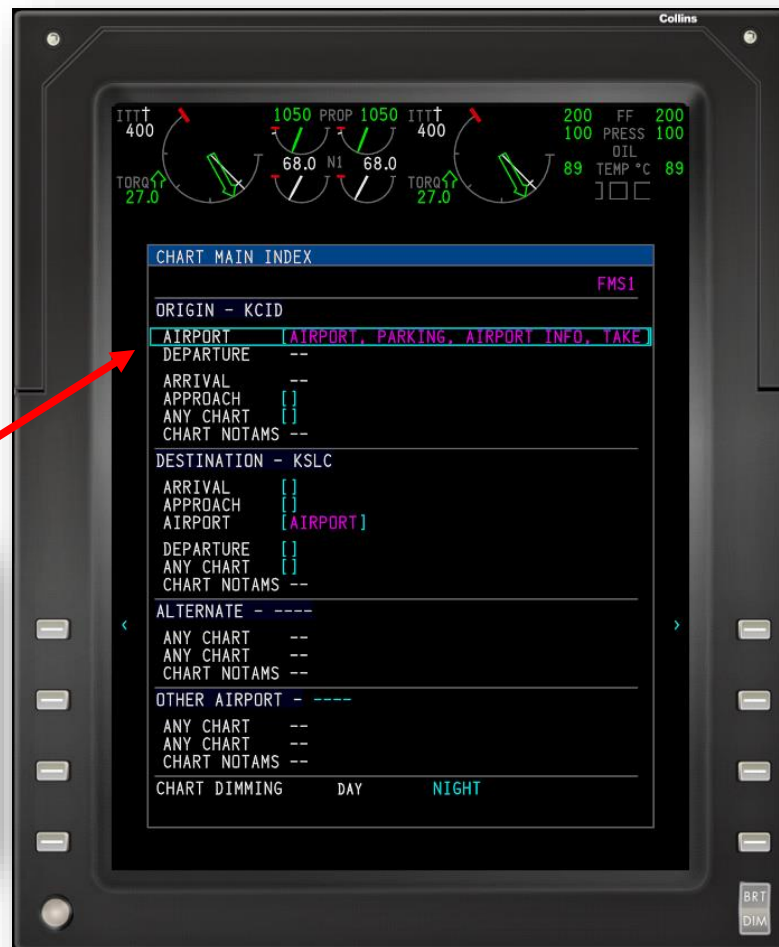
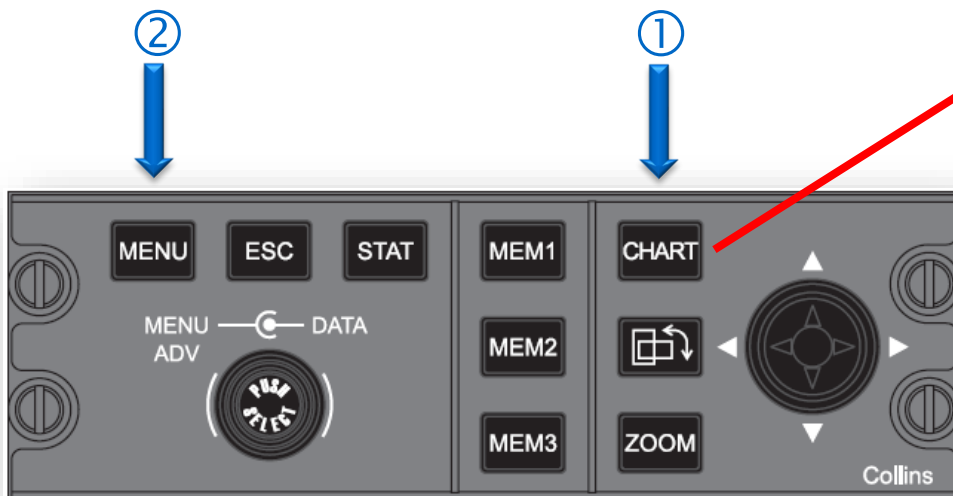
- Verify that the FMS position is at your current location or set a position initialization in the FMS using your airport identifier.
- Enter your airport identifier in the flight plan page then complete inputting a flight plan with destination, runways and an approach at the destination.

On the flight plan page enter your ORIGIN airport ICAO identifier, DEST airport and copy the destination to the TO block and EXECUTE the flight plan.



Step 3. Checking for Proper Chart Operation

- Using the cursor control panel, press the chart button then the menu button and observe if the airport identifier is displayed in the ORGIN block at the top of the page.
- Scroll the focus box to a magenta line on the chart main index and select a chart



Step 3. Continued

When the flight plan with airports, runways and procedures is populated on the Chart Main Index you should be able to scroll to the menu option and select the charts for airport diagrams, DEP, STARs and Terminal Procedures.

CHART MAIN INDEX FMS1

ORIGIN - KCID

AIRPORT [AIRPORT, PARKING, AIRPORT INFO, TAKE]
DEPARTURE --

ARRIVAL --
APPROACH []
ANY CHART []
CHART NOTAMS --

DESTINATION - KPVO

ARRIVAL --
APPROACH [ILS OR LOC DME RWY 13] →
AIRPORT [AIRPORT]

DEPARTURE []
ANY CHART []
CHART NOTAMS --

ALTERNATE - ----

ANY CHART --
ANY CHART --
CHART NOTAMS --

OTHER AIRPORT - C16

ANY CHART []
ANY CHART []
CHART NOTAMS --

CHART DIMMING DAY NIGHT

Collins

ITTT 400 1050 PROPR 1050 ITTT 400 200 FF 200
TORQ 27.0 68.0 N1 68.0 TORQ 27.0 100 PRESS 100
89 TEMP °C 89

KPVO 11-1 ILS OR LOC DME RWY 13

KPVO/PVO JEPPESEN **PROVO, UTAH**
PROVO MUN 5 DEC 14 (11-1) ILS or LOC DME Rwy 13

ATIS (AWOS-3 when Twr Inop)	SALT LAKE CITY Approach (R)	PROVO Tower	Ground
135.17	118.85	CTAF 125.3	119.4
LOC IPVU	Final Apch Crs	GS WAVIT	ILS DA(H) (CONDITIONAL)
110.3	134°	6300' (1803')	4697' (200')
			Apt Elev 4497'
			TDZE 4497'

MISSED APCHs Climb to 9000' on heading 134° to intercept PVU VOR R-130 to ZIPUT/D5.9 PVU. Then climbing RIGHT turn on heading 330° and inbound on FFU VOR R-110 to FFU VOR and hold.

All Sets INCHES Trans levels FL 180 Trans altz 18000'

1. DME required. 2. Use IPVU DME when on the localizer course. MSA PVU VOR

Resetting the Jeppesen Subscription Serial No.

This is an optional step and most of the time step 3 resolves the issue.

If the field is all dashes, you may need to reload the chart database, then reset avionics power or FSU circuit breaker to reboot the File Server Unit computer. If you don't have the Jeppesen subscription key serial number you will need to contact Jeppesen at 303.328.4244 or in the U.S. 800.553.7750.

If you need to reenter the 16 character Jeppesen chart subscription key serial number on the chart subscription page continue to the next step.



Step 4. Reentering the Chart Subscription Key

- Press the Data Base or STAT button on the cursor control panel then the MENU button to bring up the STATU MENU.
- Scroll to the chart subscription page and press the MENU SET knob.
- Write down the 16 character key at the top of the screen. This is your Jeppesen serial number for your subscription. Verify the number or you will be calling Jeppesen.



Step 4. Continued

- Using the cursor control panel (large knob) move the focus box to the SUBSCRIPTION NUMBER and press and hold the MENU SET knob for a few seconds until the box changes to a small cursor box to let you reenter the key code.
- It may give you an option to escape or retain the number. Ignore that and reenter the number as if it was new.

```
CHART SUBSCRIPTION
SUBSCRIPTION NUMBER  [ ]-----
PRESS ESC TO RETAIN VNX12EXHM4HR5D1Q
PUSH SELECT TO ACCEPT NEW ENTRY
```

- In some cases enter a random number or all zero's first to cause the system to process the data followed by entering in the correct subscription number the second time.

```
CHART SUBSCRIPTION
SUBSCRIPTION NUMBER  0000000000000000
```

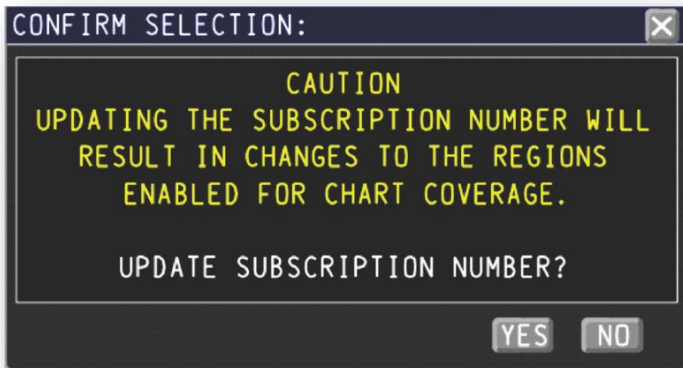
UPDATE SUBSCRIPTIONS AND SET ACCESS CODES

The E-Chart subscription is set through the Main Task menu. The CHART SUBSCRIPTION dialog box includes the option to add regions by updating the access code. The subscriptions can only be updated while on the ground. Values entered on the MKP are shown automatically in the entry field readout window. Each valid subscription number is 16 characters, and each access code is 10 characters. There is a maximum of 15 regions to enable. To set the subscription and access code:

1. CHART button – Push.
2. MENU button – Push.
3. Position the cursor over CHARTS, and push the PUSH ENTER button.
4. Position the cursor over SUBSCRIPTION, and push the PUSH ENTER button. The CHART SUBSCRIPTION dialog box shows.

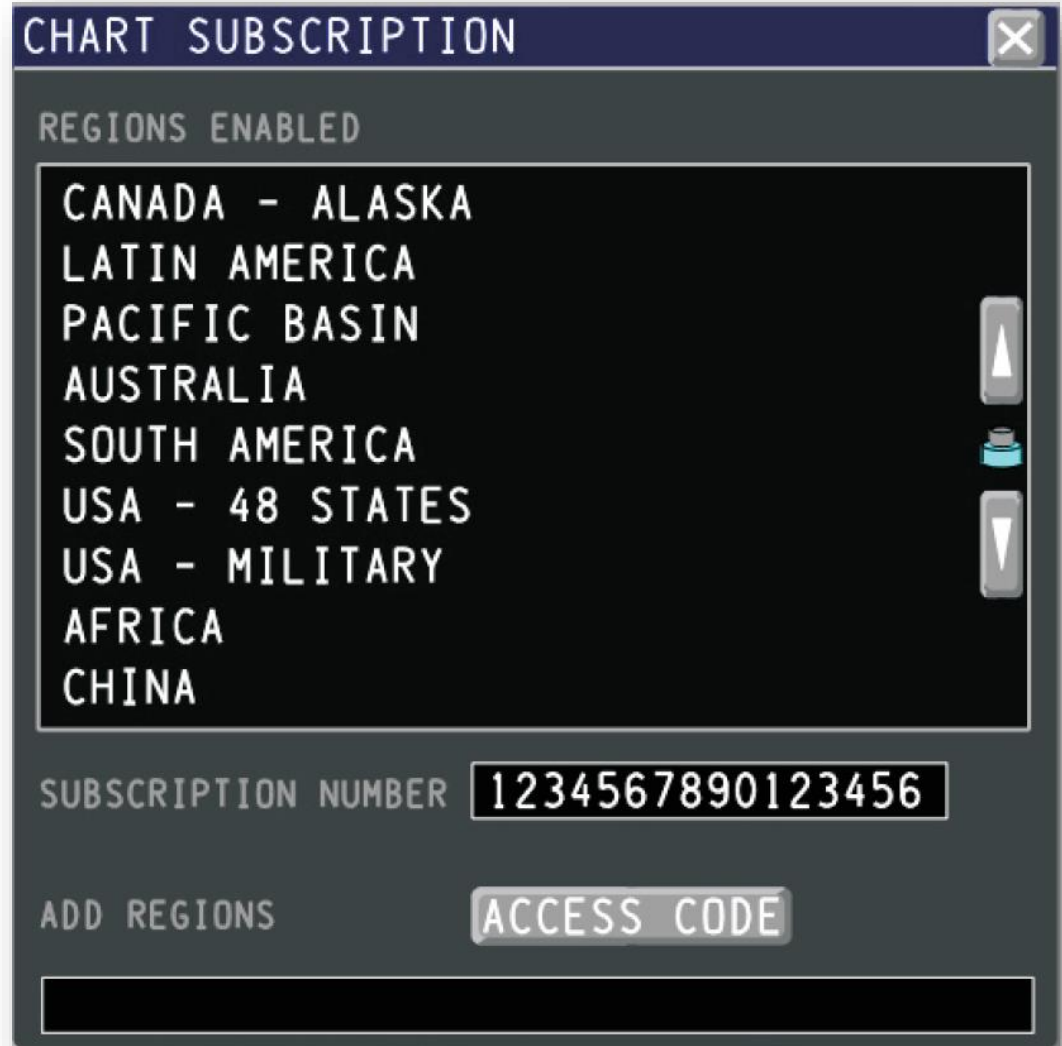
Fusion CHART SUBSCRIPTION DIALOG BOX

5. Position the cursor over SUBSCRIPTION NUMBER field, and push the PUSH ENTER button. The CONFIRM SELECTION dialog box opens.



6. Position the cursor over the YES button, and push the PUSH ENTER button. The CONFIRM SELECTION dialog box disappears.

Position the cursor over the lower data entry field.



Fusion Charts Subscription Key Continued

7. Enter the subscription number, and push the ENTER button on the MKP.

8. Position the cursor over the ACCESS CODE button, and push the PUSH ENTER button. A cyan field opens below the ADD REGIONS field.

Position the cursor over the new lower data entry field.

9. Enter the access code, and push the ENTER button on the MKP. The REGIONS ENABLED window populates with available options.

10. Repeat the prior steps for each region to be added.



NOTE

If the access codes are entered after a flight plan is already in the system, it may take several minutes for the IFIS to populate the information.

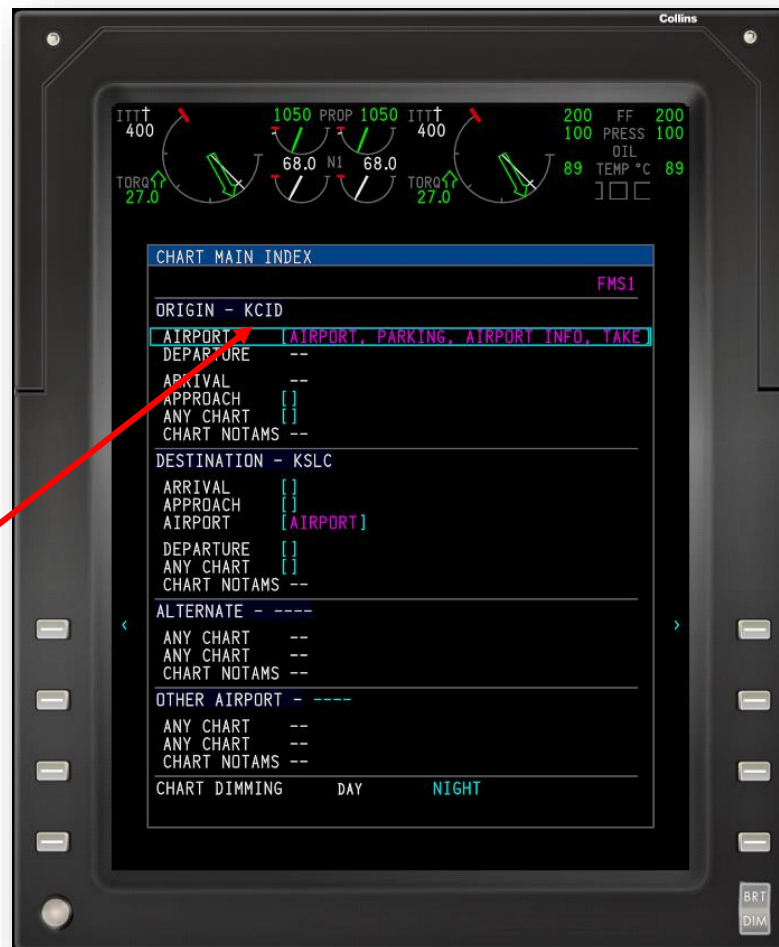
Fusion CHART TASK menu

The CHART TASK menu provides controls to format the chart currently shown in the chart. The CHART TASK menu is accessed by selecting the chart background.



Step 4. Continued

- After entering the number **momentarily press** the MENU SET knob on the cursor control panel and you should see the message, PROCESSING REQUEST on the screen.
- After changing the ORIGIN and DEST on the ACT FLPN page on the CDU, use the cursor control panel, press the chart button then the menu button and observe if the airport identifier is displayed in the ORGIN block at the top of the page.
- You should be able to scroll to the AIRPORT menu and select the chart.



Resolving Chart Access Issues with JSUM

- When a Jeppesen Charts Trip Kit is loaded, the regions subscribed to may show on the FSU configuration page but not be accessible and the "NO CHART AVAILABE" message appears.

RESOLUTION:

Close the JSUM application.

Follow the steps that apply for your version of Windows on your Personal Computer:

Windows XP

- Navigate to *C:\Program Files(x86)\Jeppesen\JSUM*
- Cached Terminal Charts
- Any folders whose names consist of a long series of letters and numbers are cached terminal charts. Deleting these will clear out all previously downloaded charts and force JSUM to download the entire chart set the next time charts are downloaded.
- Note: If other Jeppesen chart viewing software is in use on the system, the charts will actually be downloaded to that program's terminal charts folder instead (example: *C:\programdata\Jeppesen\Common\TerminalCharts*).
- Cached login info, NavData etc.
- In the JSUM folder, delete the contents of the "Cache" folder

Windows Vista and Later

- Navigate to *C:\programdata\Jeppesen\JSUM*
- Note: If you are unable to see the programdata folder, it is hidden. You can navigate there by manually typing "*C:\programdata*" into the file location bar at the top of the window and pressing enter OR by ensuring hidden files and folders are visible in Folder Options.
- Delete the *entire contents* of the JSUM folder. To properly clear cache, the JSUM folder should be completely empty.
- After clearing the cache, restart JSUM.

Any previously downloaded services will now download fresh. This means terminal charts will take longer to download because the entire database is being downloaded, rather than just the new and updated charts.



Checking the File Server FSA and ECU Part Number

Entering the File Server EAK Codes in the Rockwell Collins IFIS system

CURSOR CONTROL PANEL (CCP-3000)

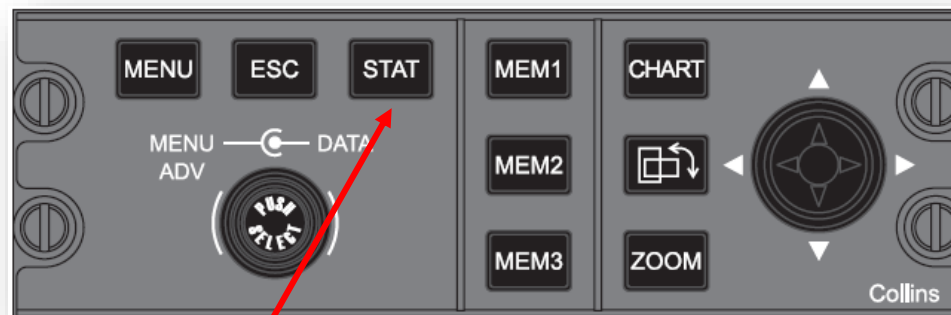
The Cursor Control Panel (CCP-3000) provides controls for the IFIS formats.

The STAT button may be labeled DATABASE, depending on the installation.

Push the STAT or DATABASE button on the CCP to display the STAT MENU on the MFD.

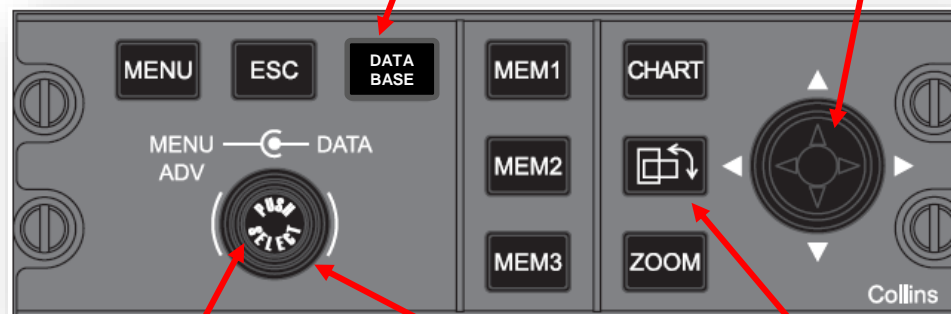
Turn the MENU ADV knob until the cursor is on the FILE SERVER CONFIGURATION list item.

Push the PUSH SELECT button on the CCP to select the FILE SERVER CONFIGURATION page.



STAT / DATABASE BUTTON

JOYSTICK



PUSH SELECT PUSH
BUTTON

MENU ADV
KNOB

ORIENTATION
BUTTON

Using the large knob on the CCP, move the focus box to the FILE SERVER CONFIGURATION.

Then press the menu set button on the CCP to open the FILE SERVER CONFIGURATION page.



The FSA part number and ECU serial number are on the lower left.

The ENTER KEYS area is for entering the Electronic Application Key codes for the ECH-5000, OVL-5000 and GWX-3000 or GWX-3001 for XM weather or GWX-5000 for Universal weather. **Note: only 1 weather feature can be enabled at a time to work properly.**

On the FILE SERVER CONFIGURATION page, the EAK keys will either be annunciated in white (disabled) or green (enabled).

Each time the code is entered it toggles the EAK keys on or off.

Note: It is mandatory to have the FSA Part no, CRC and ECU serial number on the screen before entering EAK keys.



Non TSOd Software Installed

This configuration shows software loaded for testing purposes and should never make it to an aircraft. If it does the FSU should be replaced.

Additional
Information
to be Added



No data / File Server Configuration Fault

- 1) FSU-5010 internal fault or the MFD display not communicating with the FSU or not getting 28Vdc from the airplane.

Note: The MFD not the FSU will be the problem most of the time. To resolve the issue REVERT the MFD to PFD then back to NORMAL clearing the memory in the MFD display. **If the problem is not resolved you may need to replace the MFD.**

- 2) No FSA-5000 application loaded into the FSU-5010. Field loadable File Server Application software is provided on a CD from Rockwell Collins. This is loaded using CPAS-3000 or the DBU-5XXX database loaders on new or exchanged FSU's.



ECU Fail

If the ECU is defective or it is not supplied with 8Vdc from the FSU the ECU Serial Number will be dashed out.

Be careful here...the 8v from the FSU is removed during the boot up process. It is applied and then removed once the FSU reads the memory chip.



Global Vision Baseline software EAK codes

```
=====
Total number of installed functions: 9
=====
Type Number Description Part Number(no dash) EAK Key
=====
ECH-6200 ELECTRONIC CHARTS - DUAL 8100137001 ED6ZJAY30CJ04
=====
OVL-6200 ENHANCED MAP OVLYS - DUAL 8100134001 N8RRLGL4V9690
=====
DOC-6200 DOCUMENT READER - DUAL 8100150001 M40PX2ZLYVG5N
=====
DLC-6200 ATC DATALINK - DUAL 8100185001 J2CNVEZMN2XEY
=====
FAN-6200 FANS ATC DATALINK 8100186001 GJ4JZN1BJFLJA
=====
VID-6001 EVS VIDEO 8100170001 AMCDNY1JYZXN7
=====
ENR-6200 ENROUTE CHARTS - DUAL 8100147001 DA6LY2J82MY79
=====
RNP-6000 RNP SAAAR > = 0.30 8100201001 DKLC37YN9ZJTC
=====
VSD-6000 VERTICAL SITUATION DISPLAY 8100265001 NYBYX69D9G156
=====
```



Last Steps to Troubleshooting the FSU if all Else has Failed.

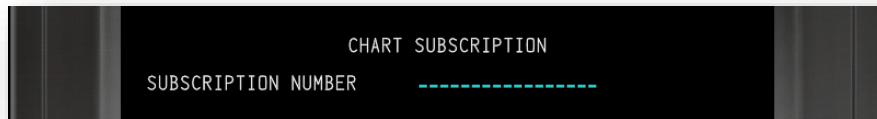
Reloading the NODE and FSA

- Prior to sending in the FSU for replacement or repair you should reload the NODE and FSA for File Server Unit in your airplane. The CD comes with the aircraft upon delivery.
- The NODE is always loaded first.
The Node is a subsystem within the FSU that contains the hardware and software for the Ethernet bus communication over the ASL (Avionics System LAN). The NODE software sets up the IP host address and handles the TCP/IP stack which is required for the File Server to communicate with the rest of the system.
- The FSA is loaded second.
This software provides the basic operating system for the FSU-5010. This software also provides the electronic chart, graphical weather, and enhanced map overlay functions. However, these functions need to be enabled by EAKs before they can be used by the pilot.

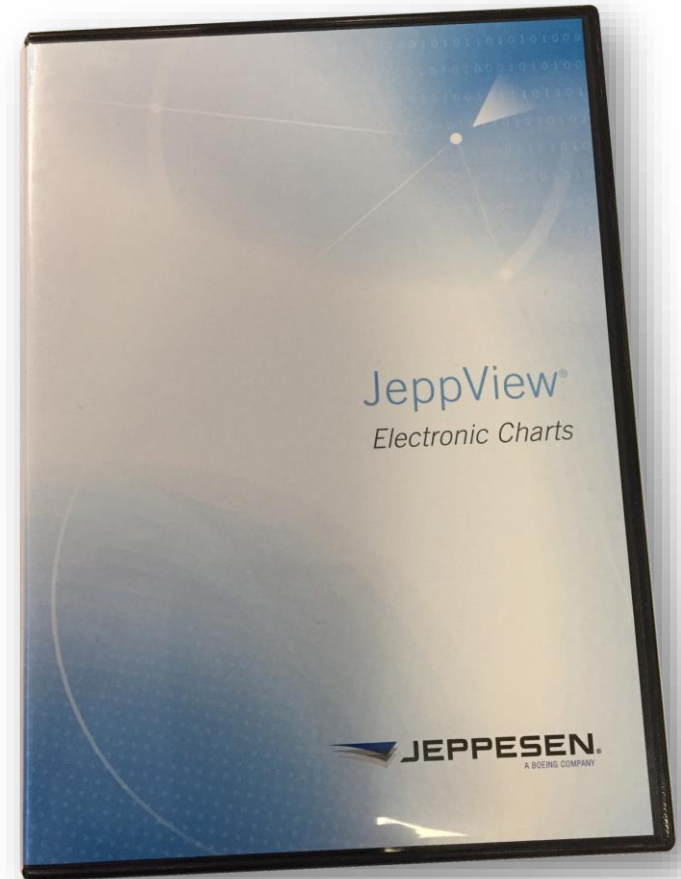


Loading databases after reinstalling the NODE and FSA

- Before you can insert the Jeppesen 16 character subscription key on the chart subscription page the charts database must be loaded first.



- Emaps and Graphical Weather do not require a specific loading order.





Finding the XM Radio ID and Enabling XM

Determine if the GWX-3000 has been enabled,

1. Push the STAT button on the CCP to display the STAT MENU on the MFD.

NOTE: In some installations, operation of the STAT button brings up the last selected status format. With a status format in view, push the MENU button on the CCP to display the STAT MENU.

2. Turn the MENU ADV knob to position the menu cursor around FILE SERVER CONFIGURATION in the STAT MENU.
3. Push the PUSH SELECT button to show the FILE SERVER CONFIGURATION page.
4. On the FILE SERVER CONFIGURATION page, GWX-3000/3001 will either be annunciated in white (disabled) or green (enabled). Only one or the other but never both.
 - a. If it is disabled, an Encrypted Application Key will need to be purchased to enable the feature.
 - b. If it is enabled, the databases associated with Graphical Weather must be loaded into the FSU before the system is functional. Those can be checked on the DATABASE EFFECTIVITY PAGE.

FILE SERVER CONFIGURATION			
PURCHASED TYPE NO	OPTIONS PART NO	FUNCTION	STATUS
ECH-5000	810-0002-001	ELECTRONIC CHARTS	ENABLED
DVL-5000	810-0003-001	ENHANCED MAPS	ENABLED
GWX-3000	810-0007-001	GRAPHICAL WEATHER	DISABLED
GWX-3001	810-0058-001	GRAPHICAL WEATHER	ENABLED

With a status format in view, push the MENU button on the CCP to display the STAT MENU.

Turn the MENU ADV knob to position the menu cursor around DATABASE EFFECTIVITY PAGE in the STAT MENU.

Push the “PUSH SELECT” button to show the “DATABASE EFFECTIVITY PAGE” page.

The XMGWX database effectivity dates will be dashed (not installed), yellow (installed, but out of date) or white (installed and in the current cycle range).

If the XMGWX database is not installed or out of date, the latest cycle should be downloaded from your account on the www.rockwellcollins.com/fms website and loaded on the file server.

If the XMGWX is installed and in the current cycle range, select the GWX function on the MFD.

DATABASE	BEGIN	END	STATUS
FMS 1 NAV	28 MAY 15	24 JUN 15	CURRENT
FMS 2 NAV	28 MAY 15	24 JUN 15	CURRENT
CHARTS	05 JUN 15	24 JUN 15	CURRENT
AIRSPACE	30 MAY 13	26 JUN 13	CURRENT
AIRWAYS	30 MAY 13	26 JUN 13	CURRENT
GEOGRAPHIC	29 AUG 12	30 SEP 13	CURRENT
POLITICAL	29 AUG 12	30 SEP 13	CURRENT
GRAPHICAL WX	08 MAY 13	31 ? 14??	CURRENT



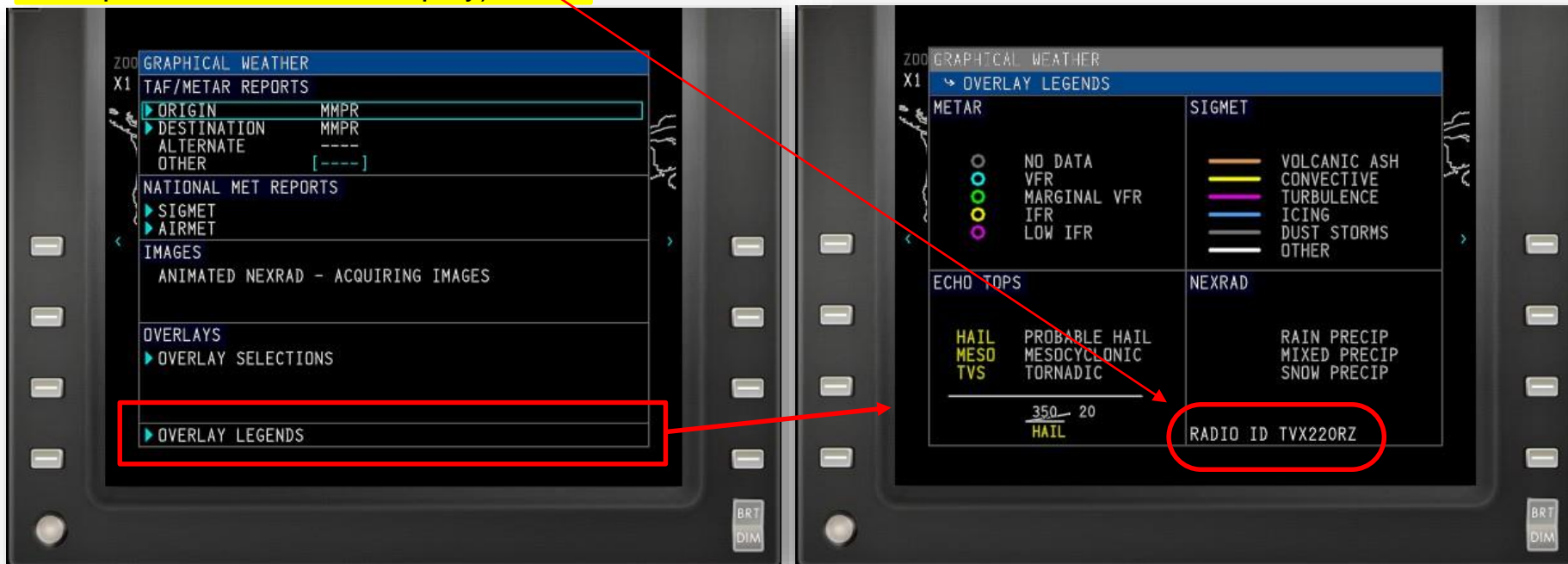
Pushing the lower format line select key on the MFD to selects the lower display FORMAT list.

TECH DETAIL: The complete list of possible lower MFD formats, in order, is ROSE, ARC, PPOS (Present Position Map), PLAN (Plan Map), GWX, and TCAS (TCAS Only), depending on the installed options.

Push the FORMAT line select key multiple times as necessary to cycle the display to the next available format until GWX is selected. The GWX image that shows on the MFD when the GWX format is selected is the last displayed GWX image.

With a GWX format in view, push the MENU button on the CCP to display the GRAPHICAL WEATHER menu then select OVERLAY LEGENDS.

The RECEIVER ID will be in the lower right-hand corner (the RECEIVER ID is not always annunciated; it may take up to five minutes to display)



Fusion *XM GWX* – INDEX PAGE



The Index menu provides access to Print functions, the Legend submenu, and shows the radio ID for the XM receiver.



Tip's and Tricks

Entering a Three Character Airport Identifier

ICAO location indicator

The International Civil Aviation Organization establishes sets of 4-letter location indicators which are published in ICAO Publication 7910. These are used by air traffic control agencies to identify airports and by weather agencies to produce METAR weather reports. The first letter indicates the region; for example, K for the contiguous United States, C for Canada, E for northern Europe, R for the Asian Far East, and Y for Australia to name a few.

FAA identifier

The Federal Aviation Administration identifier is a three- or four-letter alphanumeric code identifying United States airports. They were developed in the 1960s, replacing an old system that relied on plain language, Teletype station identifiers, and weather reporting codes.

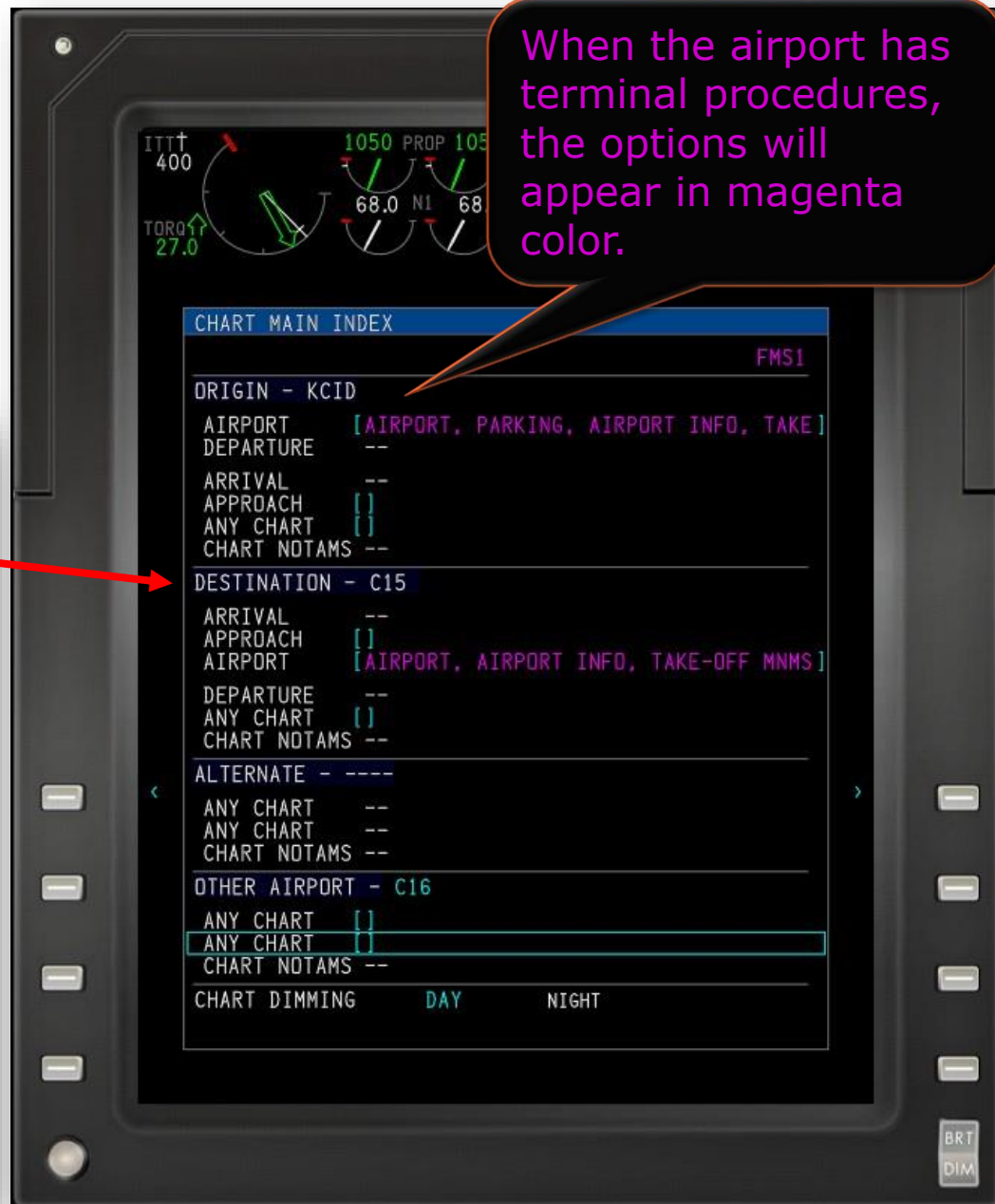
For nearly all major airports, the letters are alphabetic three-letter codes, such as SFO for San Francisco International Airport. Minor airfields typically have a mix of alphabetic and numeric codes, such as 8N2 for Skydive Chicago Airport and C16 for Frasca Field Airport.

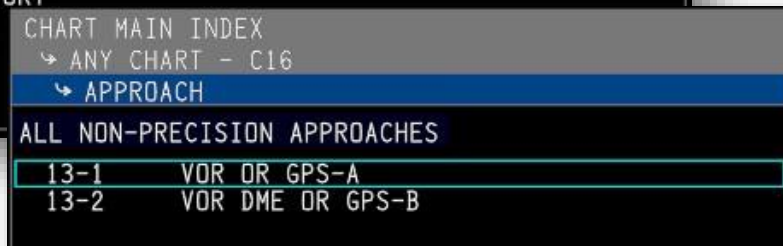
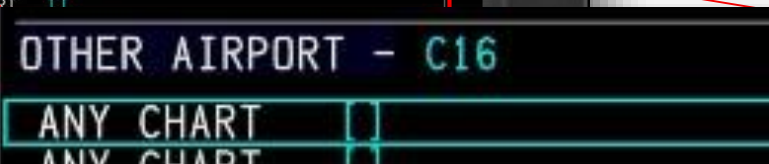
Note:

Minor airfields with the FAA three-letter identifier can be input into the FMS navigation database or IFIS-5000 chart main index as long as it is included in the respective databases.

All major airports require the four-letter IACO airport identifier for the FMS and IFIS-5000.

1. When a FAA three letter airport identifier that includes numbers and letters are used in a flight plan the identifier will show on the chart main index page. The airport may or may not have terminal procedures.





3. The FAA three letter airport identifiers that includes numbers and letters that have an approach procedure can be entered in the OTHER AIRPORT selection on the chart main index.

After entering the identifier, scroll to the ANY CHART selection to pick from airport diagram, approaches, arrivals and departures.

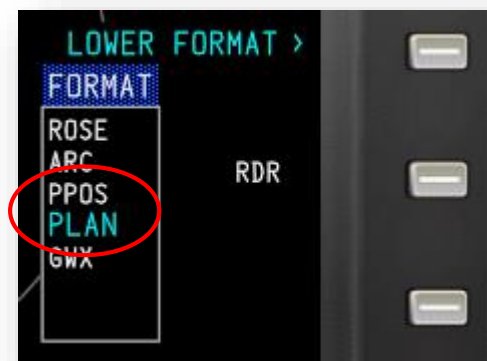
Note:

The OTHER AIRPORT selection will only display airport identifiers that have published terminal procedures in the chart database.

IFIS Enhanced Map Setting

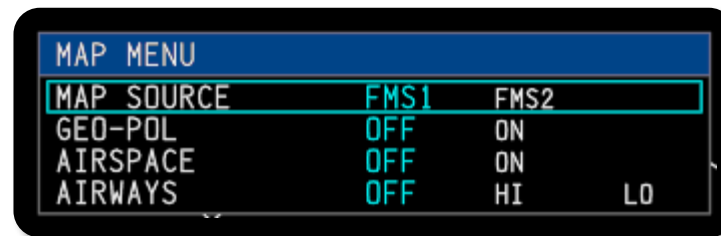
- IFIS-5000 Emaps are downloaded from the www.rockwellcollins.com/fms web site.
- To access the Emaps selections on the MFD you must be in the PPOS or PLAN map modes.
- The EMAP's database includes:
 - Airspace
 - Airways
 - Geographic
 - Political

Note: the EMAPS database breakdown is displayed on the database effectivity page.



EMAPS Menu Selections

- With the format on PPOS or PLAN press the MENU key on the Cursor Control Panel CCP to bring up the EMAP's display options.
- Two different menu formats depending on aircraft are shown here.





For more information, visit
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