Entegra EX5000

Multi-Function Display
Pilot's Guide Addendum

Software Release 8.1

600-00248-000 Rev: 00

AVIDYNE

Document Revision History

Date	Revision	Description
Nov. 13, 2009	00	Initial Release

This document is applicable to the following Software Part numbers:

Part Number	Title
530-00201-200	Columbia C350, C400
530-00201-002	Piper PA28, PA32, PA44
530-00201-100	Cirrus SR20, SR22
530-00201-000	Piper PA34, PA46
530-00201-502	Aftermarket, 2 knob landscape
530-00201-500	Aftermarket Radar, 4 knob landscape

This document is applicable to Hardware Part Numbers 700-00030-() and 700-00004-().

This Pilot Guide Addendum supplements the information in the following pilot guides:

Part Number	Title
600-00102-002	Columbia
600-00105-001	PA28, 32, 44
600-00108-003	SR20, SR22
600-00121-001	PA34, 46
600-00151-000	Aftermarket
600-00152-001	Aftermarket Radar

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1. Introduction

1.1 About this Guide

This guide includes information related to the changes in EX5000 Release 8.1 from Release 8.0. Unless described in this pilot guide addendum, all functions of the EX5000 Release 8.0 remain unchanged. If there are conflicts between the data in the Release 8.0 pilot's guide and this Release 8.1 pilot's guide addendum, the data in this addendum should be used.

Note: All images contained within this document, including screenshots and other displays, are for reference use only and are subject to change. The images contained herein may differ slightly from your actual equipment or display.

2. Map Page

There is an additional choice to the Wx Ovly button on the Map page.

- **SatIR** - If installed and available, displays 2-Way Datalink Infrared Satellite cloud information on the map, using shades of gray. Lighter shades of gray indicate colder, generally higher clouds, while darker shades of gray indicate warmer, generally lower clouds. Like DL RDR, the 2-way Datalink uses two-way messaging to send your present position and flight plan to the Avidyne Network Operations Center (NOC), which then sends you only the data for your position or flight plan, depending on your Datalink Setup preferences.

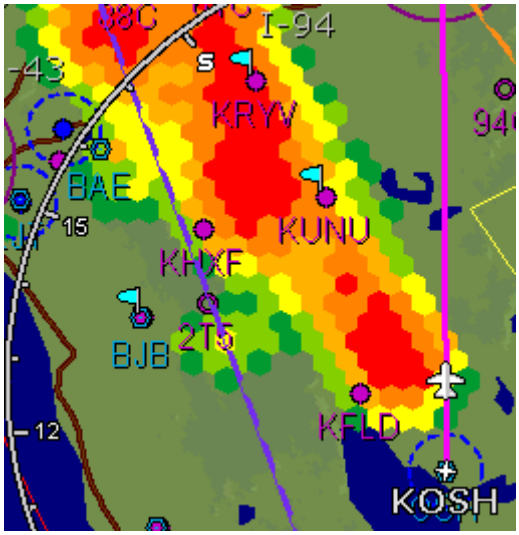
Note: Diagonal stripes indicate the boundary of available Datalink radar or SatIR data. If Datalink radar or SatIR is unavailable in a particular area, hatched lines appear in that area.

If MLX770 2-way Datalink is installed, strikes are represented by a lightning bolt symbol in one for three different colors, depending on the age of the strike. Datalink strikes darken in color until they are removed after 20 minutes. Control for Narrowcast 2-way Datalink lightning is the same as for Broadcast lightning, select Datalink with the Lightning button on the Map page.

Datalink Strike Legend

The appearance of the TWXCELL weather overlay has been modified in Release 8.1. Blue-Green cells are no longer displayed. The following table describes the TWXCELL colors displayed by the EX5000:

Color	Interpretation
Red	Intense thunderstorm activity – presence of hazardous atmospheric conditions is certain.
Orange	Weather conditions are approaching intense thunderstorm activity.
Orange-Yellow	Heavy thunderstorm activity – high likelihood of hazardous atmospheric conditions.
Yellow	Weather conditions are approaching heavy thunderstorm activity.
Green-Yellow	Moderate thunderstorm activity – severe turbulence and unsettled atmospheric conditions likely.
Green	Weather conditions are approaching moderate thunderstorm activity and moderate turbulence is likely.

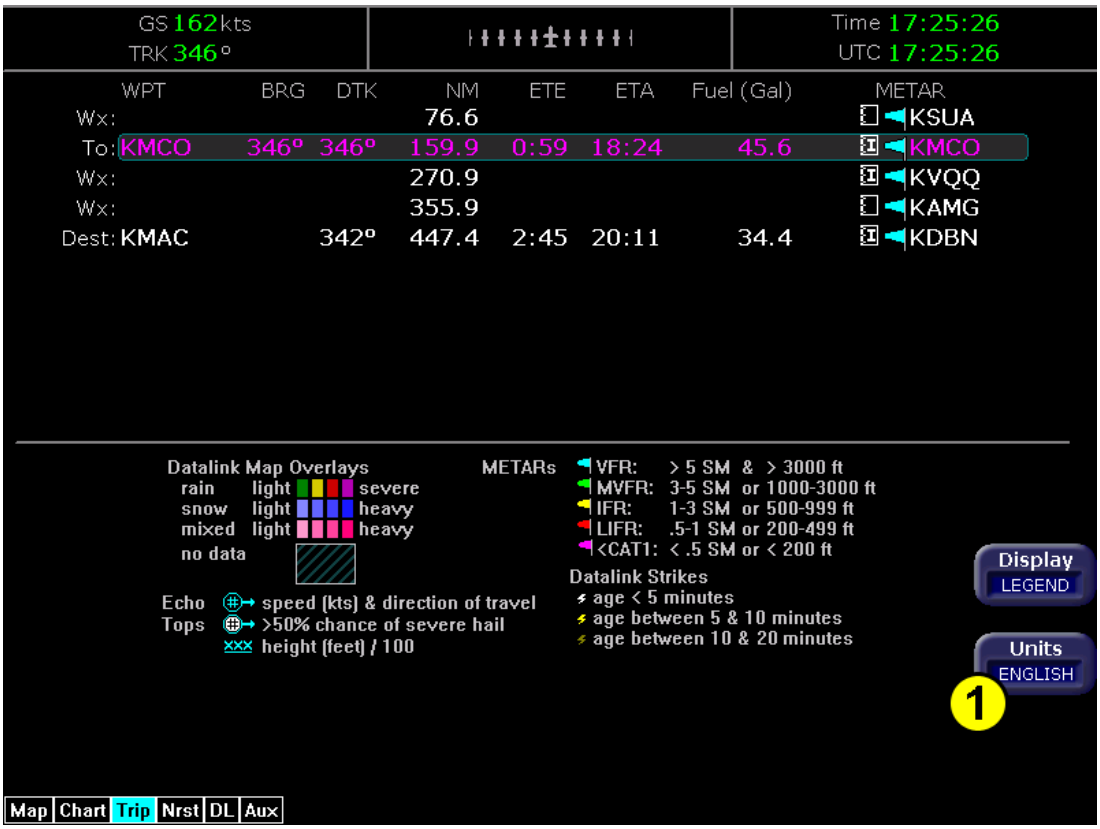


Release 8.1 TWXCELL depiction

Note: In Release 8.1, TWX cells are located underneath airspace, navaids, obstacles, and TFRs.

3. Trip Page

If LEGEND is selected for the Trip page Display, there is a button for unit selection.



Trip Page with Units selection displayed

1) Units – Controls the units used for decoded METARs and Datalink Legend. The selections are:

- **ENGLISH**—Displays the decoded METAR text and Datalink Legend using statute miles (SM), feet (ft), and inches of mercury (inHg)
- **METRIC**—Displays the decoded METAR text and Datalink Legend using meters (m), kilometers (km), and hectopascals (hPa). Cloud altitudes are still in feet (ft).

Unit selections apply to decoded METAR text on both the Trip page and Nearest page.

Winds Aloft/Temperatures Aloft—Depending on your 2-way Datalink subscription, Winds and Temps aloft can be viewed on the trip page. The Winds Aloft direction is measured from true (not magnetic) North. Winds are interpolated for each Trip page waypoint and are based on a computer forecast model that is updated hourly. The 2-way Datalink Temperature Aloft forecast provides temperature data for each winds aloft flight level.

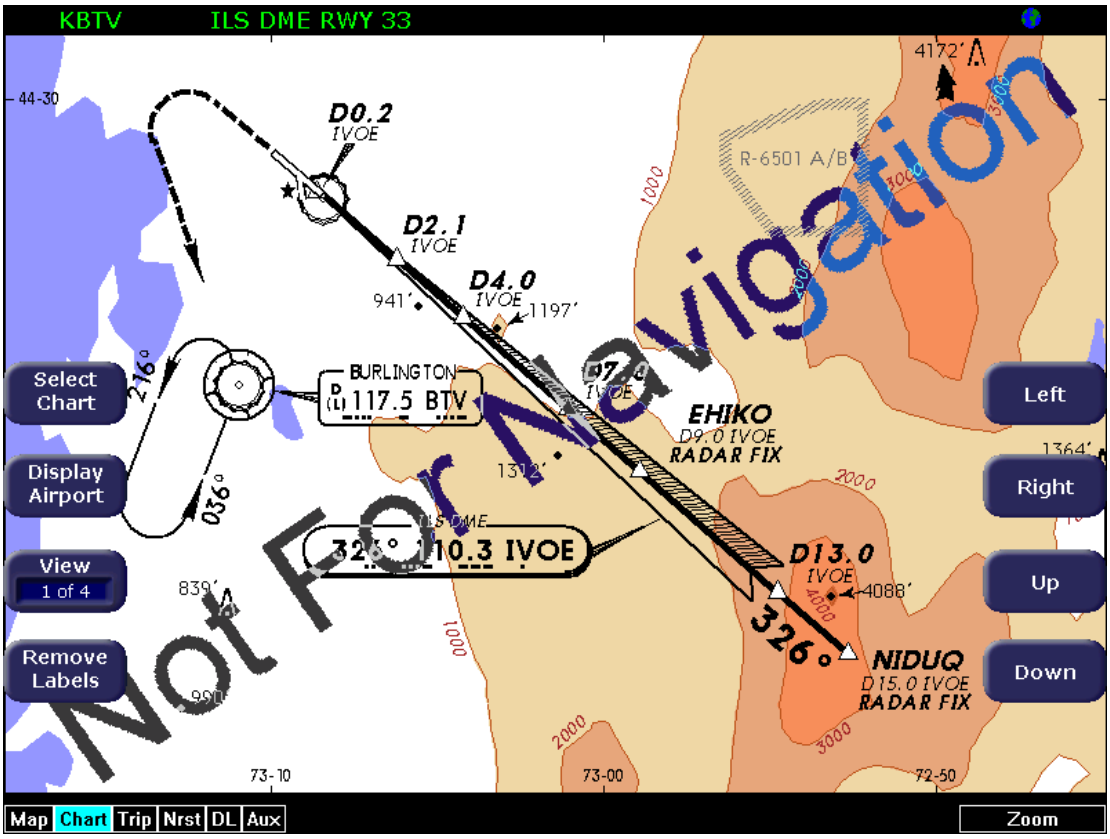
4. CMax Chart Pages

It is critical that you updated the Jeppesen database regularly and prior to conducting flight operations to insure accurate data. Charts labeled “Not for Navigation” are expired and should not be used for navigation. **Use of an outdated database is entirely at your own risk.**

4.1 Expired Charts

CMax™ charts are valid for a period of 56 days. Charts will be displayed normally for 10 weeks after the chart expiration date.

After 10 weeks from the chart expiration date, charts will display a “NOT FOR NAVIGATION” watermark. The Ownship symbol and flight plan legs are removed from charts that cannot be used for navigation.



Not for Navigation Watermark on Chart display

4.2 European VFR Charts

European VFR Charts can be included in the CMax subscription from Jeppesen. If loaded, these European VFR Charts can be accessed like standard CMax charts. JSUM version 2.1.5 or later must be used to download European VFR Charts.

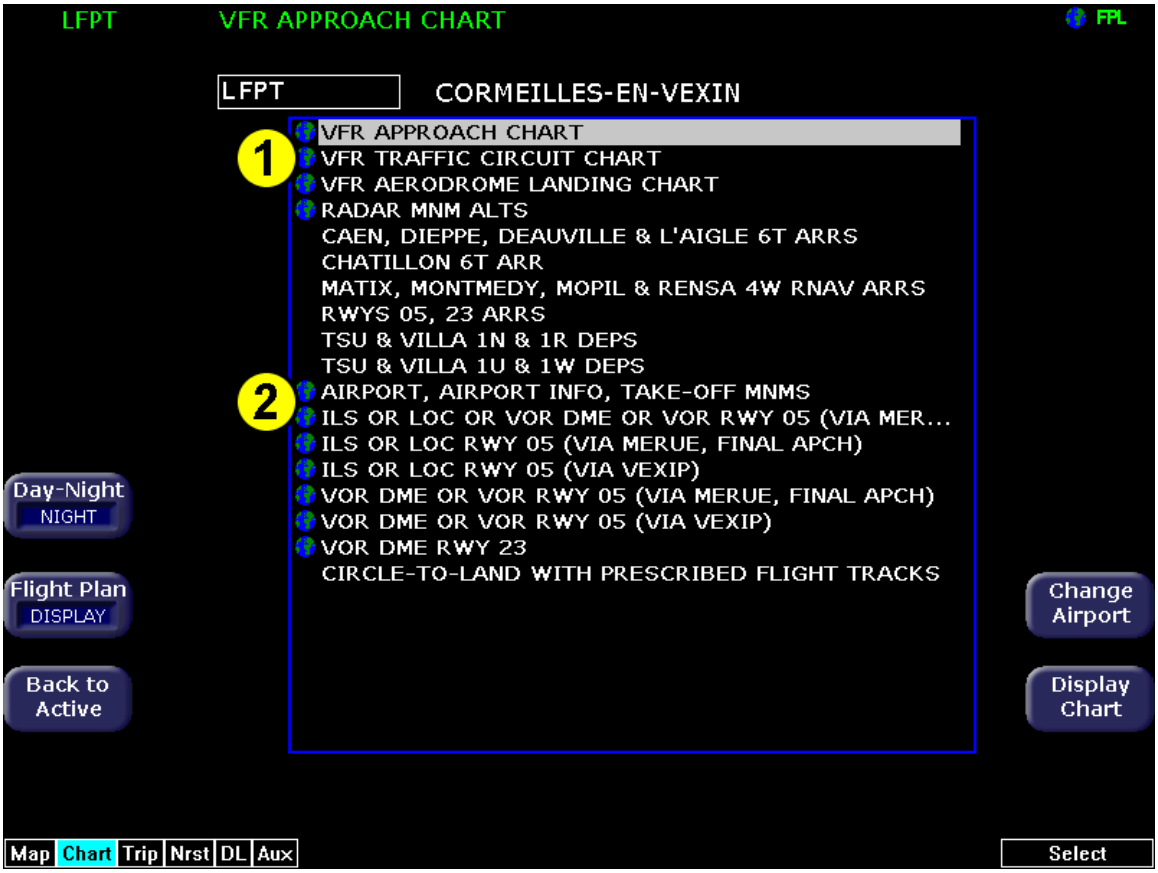


Chart Selection Page with VFR and IFR charts listed

1) **VFR Charts**—If loaded, VFR charts will be listed first in the list of CMax charts for a given airport.
2) **IFR Charts**—If loaded, standard CMax IFR charts will appear second on the CMax Selection Page below European VFR charts.

If a VFR chart is selected pressing “Display Airport” will display the VFR airport diagram. Likewise, if an IFR chart is selected, pressing “Display Airport” will display the standard Jeppesen airport diagram.

5. Datalink

There are three additional features added to Narrowcast in Release 8.1, SatIR, Winds/Temps Aloft, and Lightning for EX5000 displays connected to the Avidyne MLX770 2-Way Datalink Transceiver.

ORBCOM Datalink is not supported in Release 8.1.

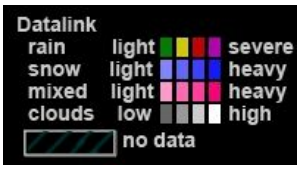
5.1 SatIR

SatIR (Infrared Satellite) is an additional choice on the Wx Ovly (Weather Overlay) button on the Map page.

- **SatIR**—If installed and available, displays 2-Way Datalink Infrared Satellite cloud information on the map, using shades of gray. The grayscale image represents the temperature of cloud tops or the ground as observed from a series of satellites. Observed temperatures above approximately 0 deg C are not shown. Lighter shades of gray indicate colder, generally higher clouds, while darker shades of gray indicate warmer, generally lower clouds. Like DL RDR, the 2-way Datalink SatIR uses two-way messaging to send your present position and flight plan to the Avidyne Network Operations Center (NOC), which then sends you only the data for your position or flight plan, depending on your Datalink Setup preferences.

The SatIR images are delivered with variable resolution of between approximately 10 km near the ownship to 30 km 100+ nm along the flight path. The EX5000 smoothes the edges of the SatIR images so that the images are not distracting at smaller zoom ranges. The SatIR grayscale values range from approximately 0 deg C (dark gray) to -110 deg C (white). Colder cloud tops are generally higher than warmer clouds. Occasionally, warm clouds may not be visible on the display. Additionally, very cold terrain may be displayed as clouds when no clouds actually exist.

A legend for the SatIR colors is found on the Trip page:



Note: Diagonal stripes indicate the boundary of available SatIR data. If SatIR is unavailable in a particular area, hatched lines appear in that area.

The hatched areas depict area without infrared satellite coverage, distinguishing them from areas that have infrared satellite coverage but warmer temperatures. Areas away from your flight path will also be depicted with diagonal stripes depicting areas outside the requested region.

5.2 Winds/Temps Aloft

Winds Aloft and Temps Aloft are available using the MLX770 2-way Datalink system. The Winds and Temps Aloft are interpolated for each Trip page waypoint and are based on a world-wide computer forecast model that is updated hourly.

5.3 Lightning

Lightning information is available for both Broadcast Datalink systems and 2-way Datalink through the MLX770 Transceiver. Datalink lightning information is collected from a series of ground-based lightning detectors which triangulate the position of the lightning strike. Cloud-to-ground, cloud-to-cloud, intra-cloud, and cloud-to-air strikes are all reported.

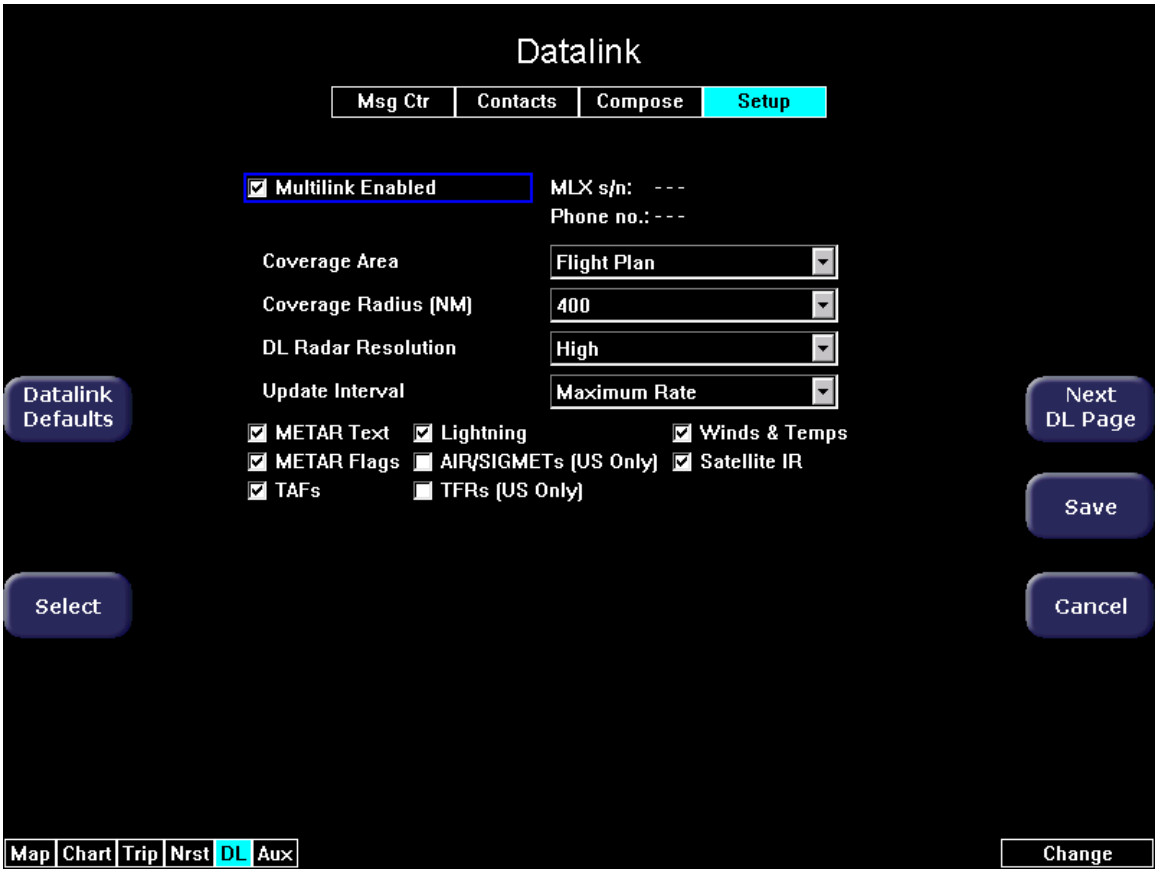
Lightning information from Broadcast and 2-Way Datalink is aligned to a grid such that strikes do not overlap. Each strike symbol represents the detection of one or more lightning strikes.

Around the US-Canadian and US-Mexican borders, 2-way lightning strike data from both US and international sensors are displayed. Some strikes may be shown in two different locations in the border region.

5.4 Narrowcast Product Coverage

See http://www.avidyne.com/products/mlx/coverage/ for the latest coverage information for all 2-Way Datalink products.

5.5 Setting Up Datalink for Iridium



Datalink Setup Page

The DL Setup page **Datalink Defaults** button changes all fields on the Datalink Setup page to their default value. To undo, press **Cancel**. The default values are:

- **Coverage Area** – Flight Plan
- **Coverage radius** – 400 NM
- **Datalink Radar Resolution** – High
- **Request Interval** – High Rate
- **Text METARS** – ON
- **METAR Symbols** – ON
- **TAFs** – ON
- **Winds/Temps Aloft** – ON
- **SatIR** – ON
- **Lightning** – ON
- **AIR/SIGMETS (USA Only)** – OFF
- **TFRs (USA Only)** - OFF

The Datalink Setup page contains the following additional fields:

- **SatIR –** Infrared Satellite Map overlay
- **Winds/Temps** – Winds and Temps Aloft data for use on the Trip page
- **Lightning** – Lightning information from ground based detectors for the Map page

6. Reference

The following additional two-way Datalink messages can be displayed:

Two-Way Datalink Messages & Colors		Meaning	Recommended Pilot Action
Narrowcast Lightning > 20 minutes		Narrowcast lighting information is older than 20 minutes	Acknowledge
Narrowcast Sat IR not received		Sat IR is selected and is not received within 15 minutes of the initial Datalink update.	Acknowledge
Narrowcast Winds/Temps not received		Winds/Temps are selected and they are not received within 15 minutes of the initial Datalink update.	Acknowledge
Narrowcast Lightning not yet received		Lightning is selected and is not received within 15 minutes of the initial Datalink update.	Acknowledge

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