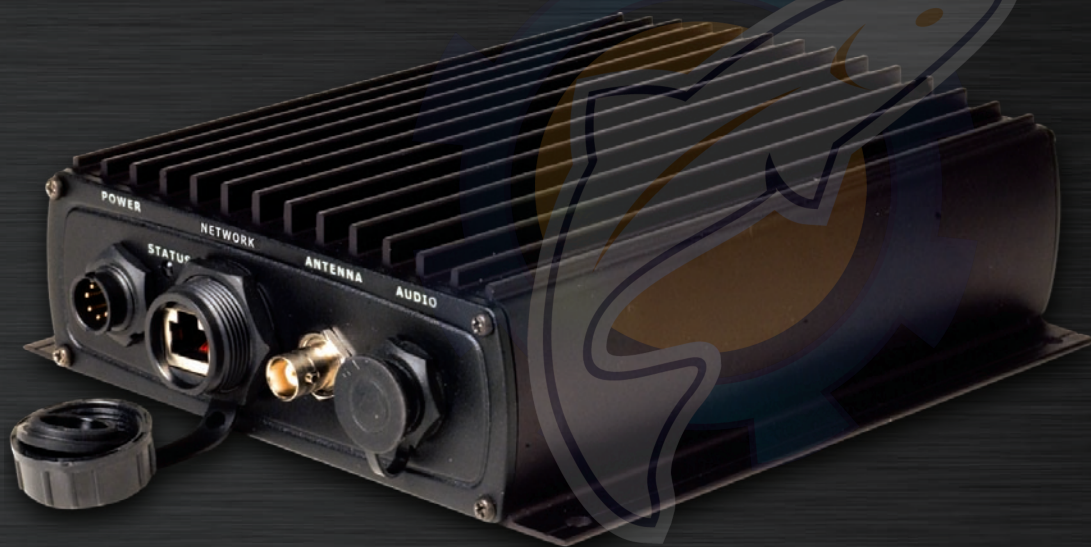


GDL™ 30A

owner's manual




GARMIN™

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Introduction

The GDL™ 30A Marine Weather/Audio Satellite Receiver provides graphical and textual marine XM WX Weather™ information to your Garmin® Marine Network chartplotters as well as XM music, news, and talk programming. Operation of the GDL 30A requires a subscription to either the XM WX Satellite Weather service, the XM Radio service, or both.

This manual covers the XM weather and audio features of the GDL 30A when viewed on a GPSMAP® 3000 Series Garmin Marine Network chartplotter. To understand the XM weather and audio features of the GDL 30A when viewed on a GPSMAP 4000 or 5000 series chartplotter, see the GPSMAP 4000 or 5000 series Owner's Manual.

Product Registration

Help us better support you by completing our online registration today! Connect to our Web site at <http://my.garmin.com>. Keep the original sales receipt, or a photocopy, in a safe place.

Contact Garmin

Contact Garmin if you have any questions while using your GDL 30A. In the USA, contact Garmin Product Support by phone:

(913) 397-8200 or (800) 800-1020, or go to www.garmin.com/support.

Contact XM

To set up your XM account call (800) 800-9200. For XM weather information, visit www.xmwxweather.com.

Important Numbers

For future reference, write down the important numbers associated with your GDL 30A.

Serial Number (located on the bottom of the unit)

Unique XM IDs are associated with your GDL 30A. XM Satellite Radio uses these ID numbers to activate and deactivate your XM weather and XM audio. To locate the ID numbers on your unit, see [page 25](#).

XM WX Weather ID

XM Radio ID

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Unit Overview



See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

Packing List and Accessories

Before installing your unit, please check to see that your package includes the following items. If any parts are missing, contact your Garmin dealer immediately.

Standard Package

- GDL 30A unit
- 7-pin power cable
- Garmin Marine Network cable (6 ft.)
- GA 32 Antenna with cable
- Audio cable
- Grommet
- Installation Instructions
- Owner's Manual

Optional Accessories

- GMS 10 Network Port Expander
- Garmin Marine Network cables (20 ft. and 40 ft.)

Installing and Activating the GDL 30A

Step 1: Install the unit

Use the GDL 30A Installation Instructions to complete the appropriate wiring connections.

Step 2: Set up the XM account

Ensure that your XM Weather ID and your XM Radio ID are readily available. Contact XM Satellite Radio by phone at **(800) 985-9200**. After receiving the required information from you, the XM representative activates the account and sends out an XM signal to activate the GDL 30A.

To answer other XM questions, call the above number or visit www.xmwxweather.com.

Step 3: Confirm all components of your service package

XM WX Weather: Ensure that the Garmin Marine Network is turned on so you receive the XM signal. When the components of the selected service package appear in the Weather Products list, the XM signal is working correctly. To see the Weather Products list on a 3000 Series chartplotter, open the Main Menu, scroll to the XM tab, and then highlight the Information sub tab. Do not turn the chartplotter off until the name of the selected service package appears in the **Service Level** field (see [page 25](#)).



NOTE: On a GPSMAP 4000 Series or a GPSMAP 5000 Series chartplotter, your service package appears on the system information screen (**Configure > System > System Information > Weather Subscription**)

XM Radio: From the XM tab, highlight the Audio sub tab and verify that channels 7, 9, 47, and 122 appear (see [page 24](#)). This indicates that all channels on the XM basic radio service are working correctly. If the XM WX Weather and the XM Radio service have not activated within an hour, call XM customer care at **(800) 985-9200** and ask an XM representative to refresh the signal.

Step 4: Save the service package

After the service package name appears, turn the entire Garmin Marine Network off.

Step 5: Use your new XM services

When you turn the Garmin Marine Network on after completing Step 4, you are able to view weather features on the chartplotter and to customize the new radio stations.

Using XM WX Weather

This manual describes the use of XM WX Weather and XM Audio functions on a GPSMAP 3000 Series chartplotter. If you have a GPSMAP 4000 Series or a GPSMAP 5000 Series chartplotter, please use your chartplotter Owner's Manual for instructions on using XM WX Weather and XM Audio.

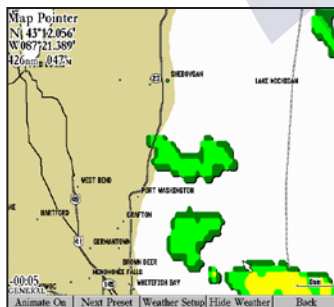
WARNING: The XM Weather Radio data is merely supplemental and advisory in nature and is not intended to be relied up on as safety-critical information. You should always exercise caution and common sense when confronted with severe weather conditions.

Preset Weather Displays

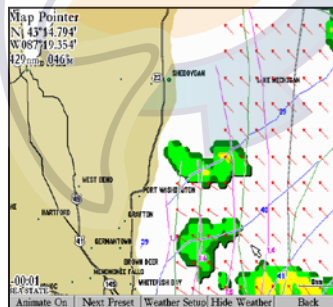
Use presets to quickly view different types of weather information. There are three preset weather displays: General, Sea State, and Storms. The name of the selected preset appears in the lower-left corner of the screen.

To select a preset weather display:

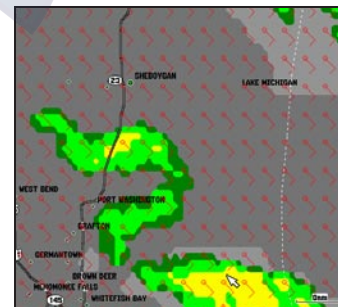
1. Press the **Wthr Options** soft key.
2. Press the **Next Preset** soft key to cycle through the three presets.



General



Sea State

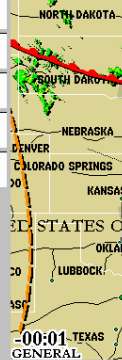


Storms

Customizing the Preset Weather Displays


You can customize the weather displays. Each preset has three subcategories: Precipitation, Atmosphere, and Sea Surface. Each category contains display settings for that topic. You can also change the name of the presets and customize any of the weather features. For detailed information on customizing the preset weather displays, please see the chartplotter Owner's Manual.

GENERAL	
Precipitation	Atmosphere
NEXRAD / Cloud Tops	All Ranges
Storm Cells	NEXRAD
Lightning	Off
Hurricanes	Off




Precipitation

GENERAL	
Precipitation	Atmosphere
Wind	Off
Pressure	Off
Visibility	Off
Fronts	All Ranges
City Conditions	Auto



Atmosphere

GENERAL	
Precipitation	Atmosphere
Temperature	Off
Wave Height	Off
Wave Period	Off
Wave Direction	Off



Sea Surface

XM WX Weather Features

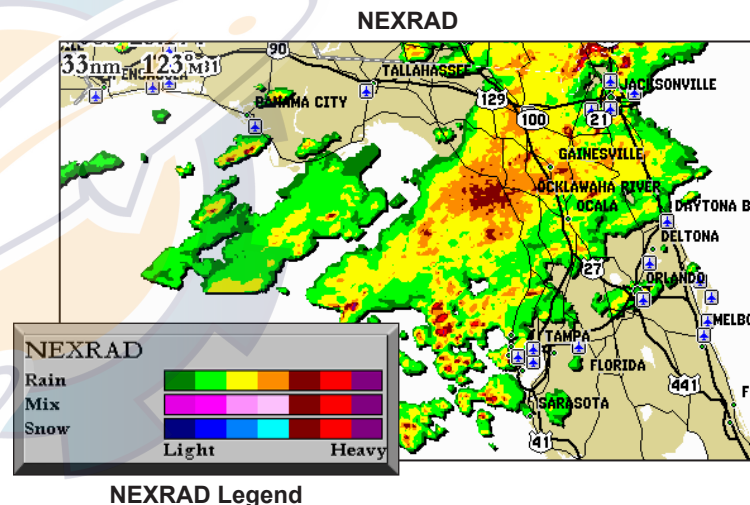
Following is a brief description of each weather feature. The weather features are divided into three subcategories: Precipitation, Atmosphere, and Sea State.

Precipitation

The Precipitation category provides NEXRAD/Cloud Top, Storm Cell, Lightning, and Hurricane data. Each feature can be turned on or off, or set to display at a selected zoom range.

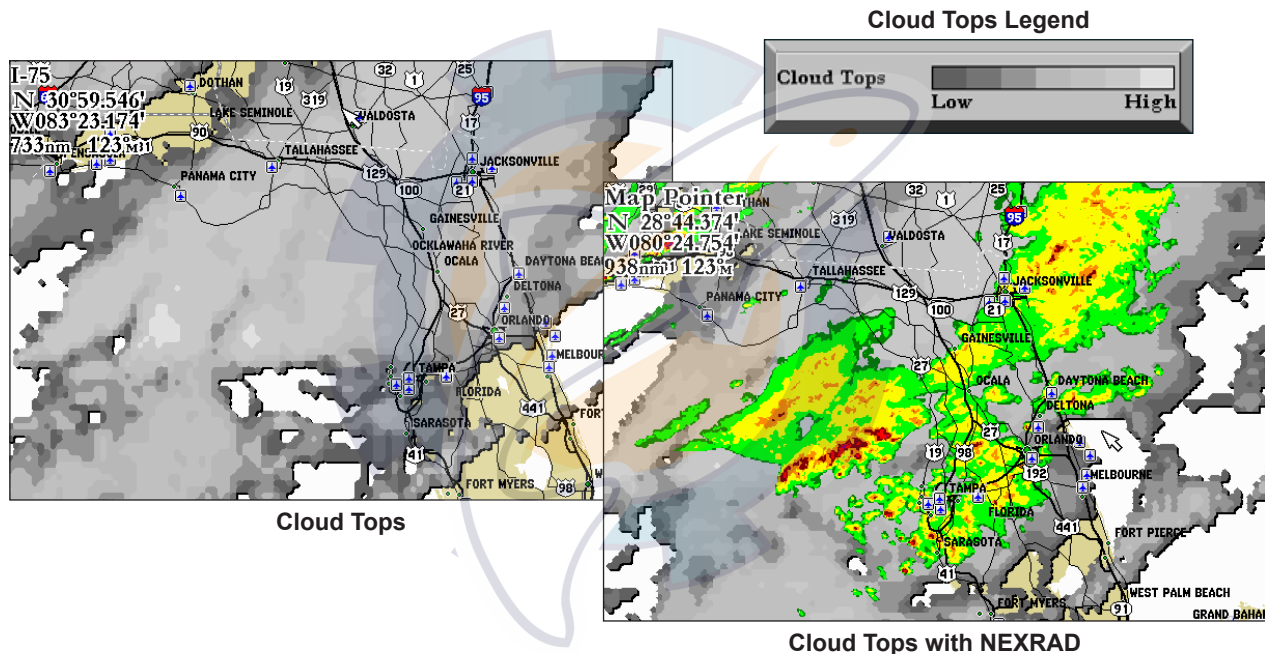
NEXRAD

NEXRAD is an acronym for NEXt Generation Weather RADar. The NEXRAD feature displays precipitation, from very light rain and snow up to strong thunderstorms, in varying shades and colors. A legend showing the colors for Rain, Mix, and Snow can be displayed by pressing the **ADJ** key and selecting Weather Legend. NEXRAD can be displayed independently or with Cloud Tops.



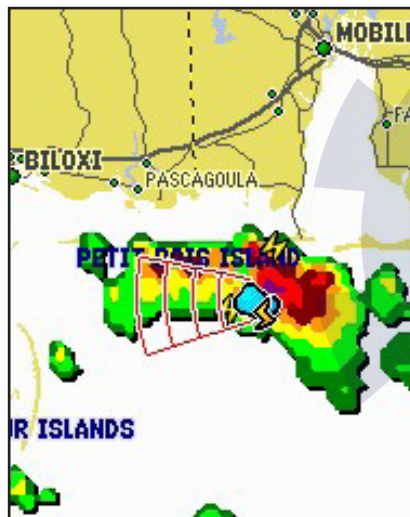
Cloud Tops


Cloud Tops are shown in shades of gray. Cloud Tops can be displayed independently or with NEXRAD information.

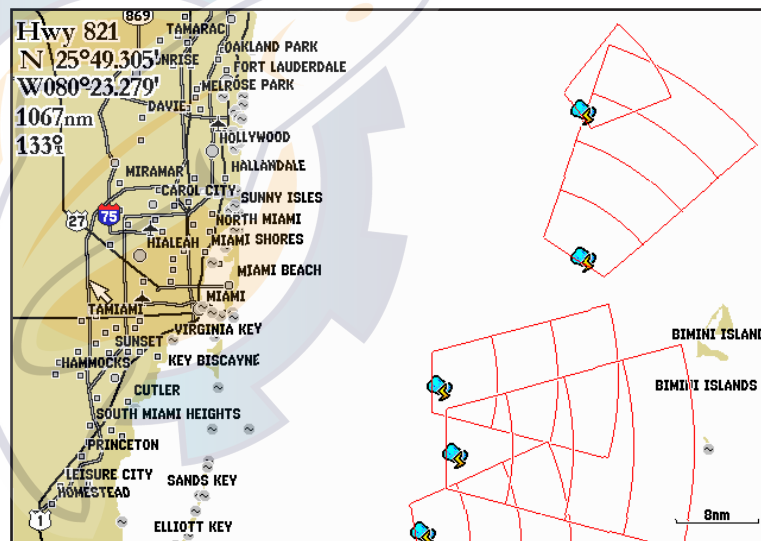


Storm Cells

The Storm Cells feature displays storm cells and the projected path of storms in the immediate future. The direction the red cone is pointing (from the narrow end to the wide end) indicates the projected path of the storm cell. The red bars that span the cone indicate the projected area of the storm. Each bar represents 15 minutes.

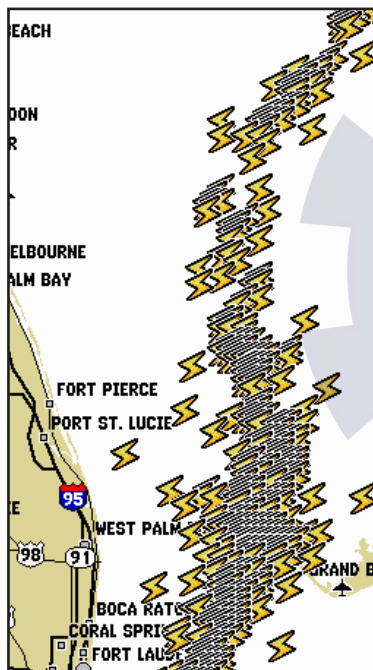


The storm icon  indicates the current location of the storm cell. The red bars that span the cone in this storm indicate where the storm will be at 15-minute intervals in the next hour.

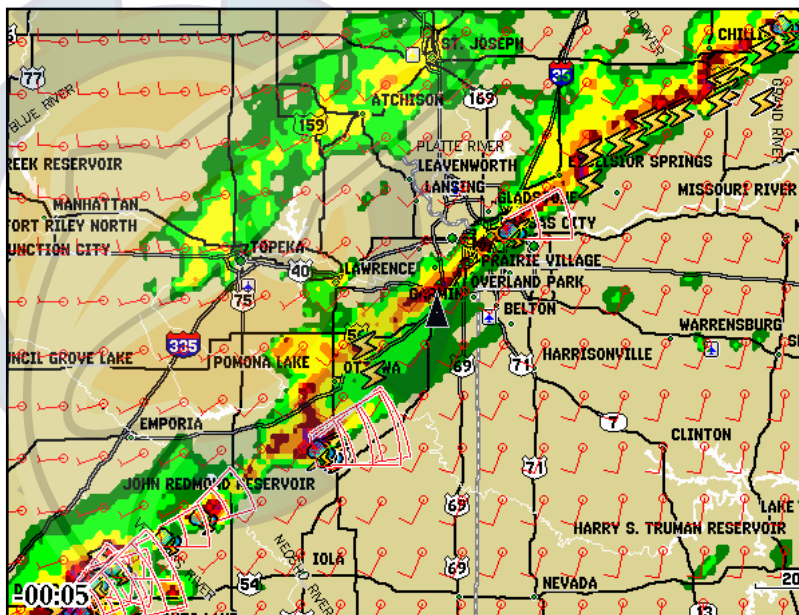


Lightning

Lightning strikes are represented by lightning-bolt icons, as shown in the images below. Lightning strikes appear on the map if they have been detected within the last seven minutes. The ground-based detection network only detects cloud-to-ground lightning.



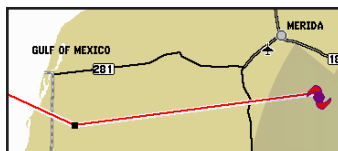
Cloud Tops



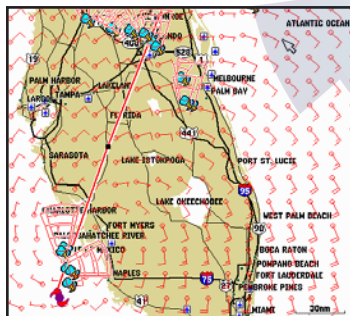
Cloud Tops with NEXRAD

Hurricanes

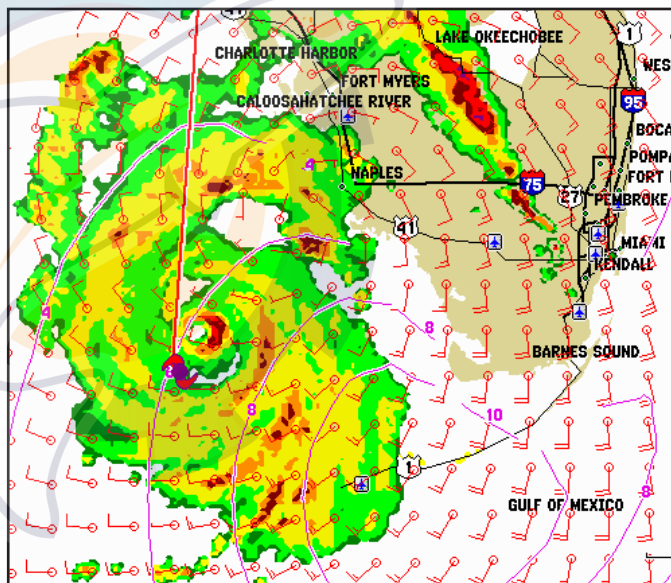
The Hurricanes feature shows the current position of a hurricane, tropical storm, or tropical depression, as well as its projected path (indicated by a red line). The darkened squares that appear along the red line indicate the projected locations received from the National Hurricane Center. The Center provides four forecasts at 12-hour intervals and a fifth forecast at a 24-hour interval. Each forecast indicates the projected location of the hurricane at different points along its projected path. Forecasted hurricane conditions at each projected location are also provided.



In this example, this hurricane is projected to travel west-southwest before moving in a northwesterly direction.



This example shows the projected path of Hurricane Charley through Florida in August, 2004. Wind and storm cells are also visible.



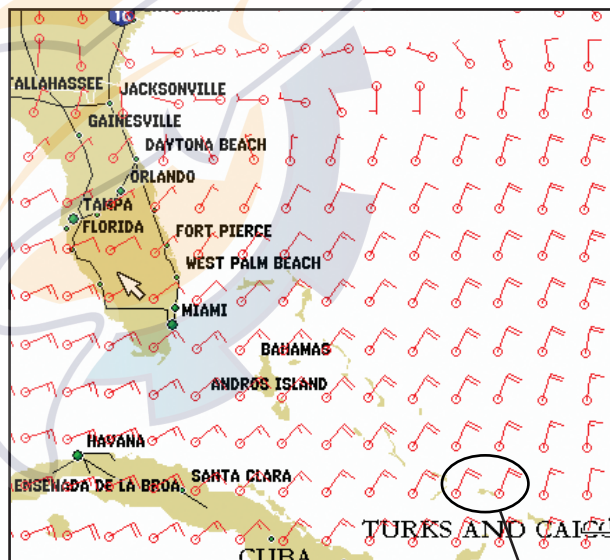
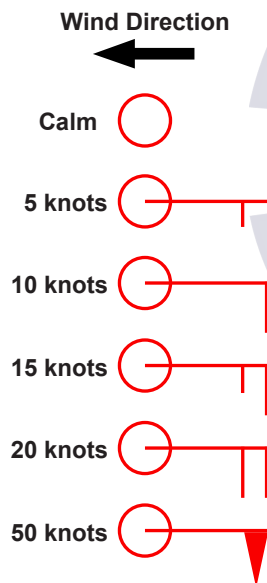
In this example of Hurricane Charley in August, 2004, NEXRAD data, wave height, and wind are shown.

Atmosphere

The Atmosphere category provides Wind, Pressure, Visibility, Front, and City Condition data. Each feature can be turned on or off, or set to appear at a selected zoom range.

Wind

The Wind feature displays wind speed and wind direction. Wind direction is indicated by a circle with a wind barb. The circle points in the direction of the wind with the barb as a tail. Wind speed is indicated by different flags attached to the barb.



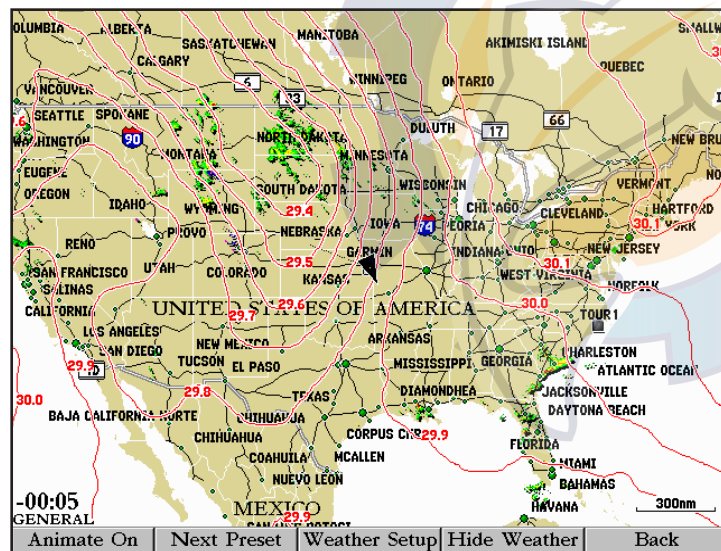
20-knot winds blowing to the southwest.

Pressure

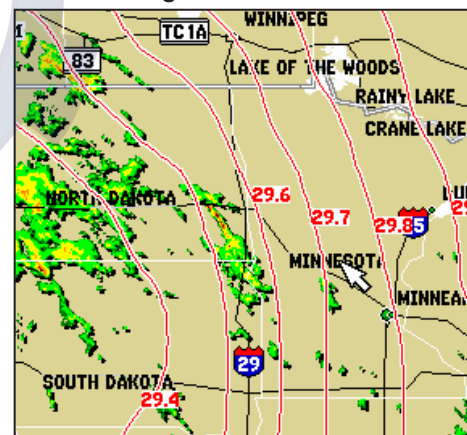
The pressure feature displays pressure isobars and pressure centers on the map. The isobars connect points of equal pressure. Pressure readings can help determine weather and wind conditions in an area. High-pressure areas are generally associated with fair weather. Low-pressure areas are generally associated with clouds and the chance of precipitation. Isobars that are packed closely together show a strong pressure gradient. Strong pressure gradients are associated with areas of stronger winds.

Pressure units can be displayed in millibars (mbar), inches of mercury (in Hg), and hectopascals (hPa). See the chartplotter Owner's Manual for more information on configuring units of measure.

Pressure Isobars

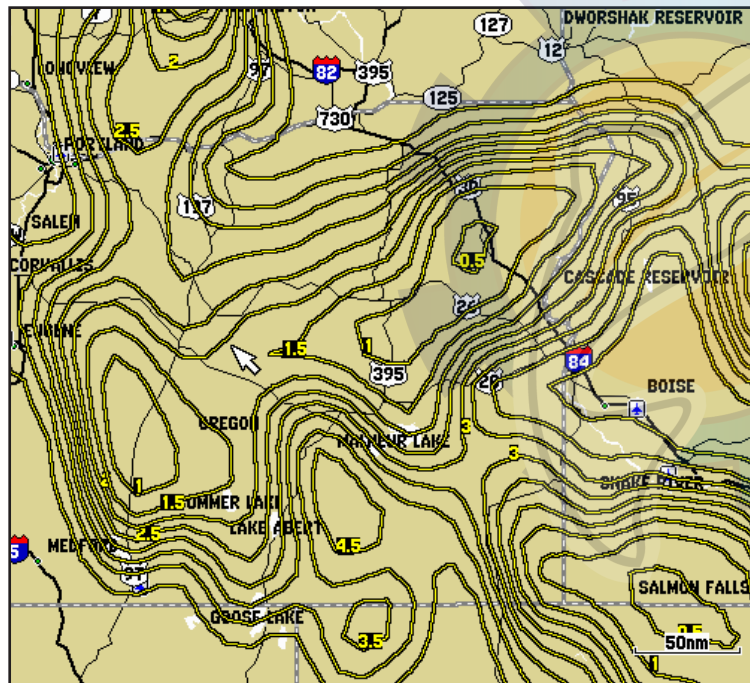


Strong Pressure Gradient

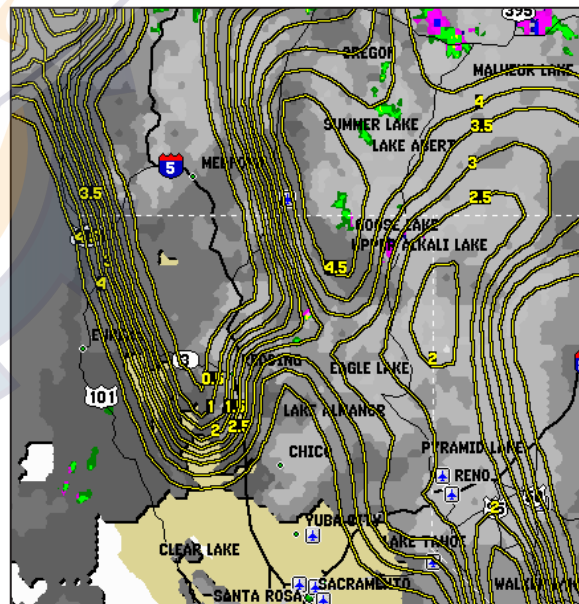


Visibility

Visibility is the maximum horizontal distance that can be seen. Isobars on the Visibility feature show a change in visibility. Distance can be displayed in nautical miles (nm), miles (mi.), or kilometers (km). See the chartplotter's Owner's Manual for more information on configuring units of measure. In the example below, visibility ranges from 0.5 nautical miles to 3 nautical miles.

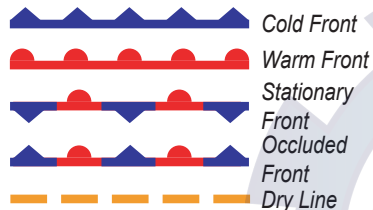


This image shows NEXRAD, Cloud Tops, and Visibility. Displaying multiple features may help to provide a clearer picture of the weather conditions in the area.



Fronts

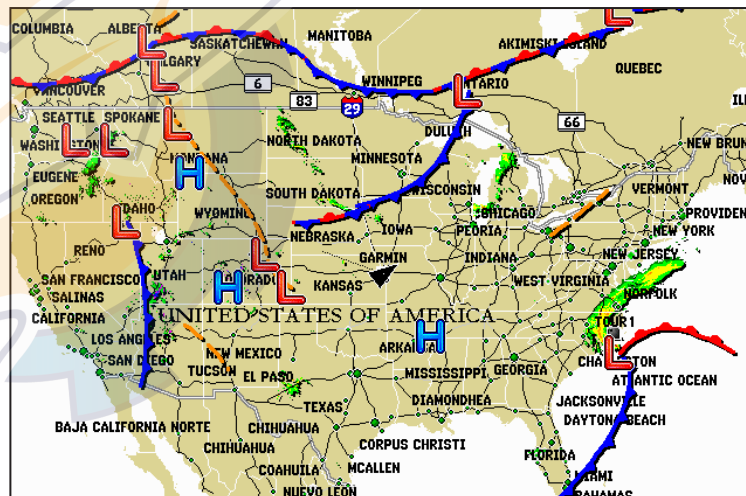
The Fronts feature displays the lines indicating the leading edge of an air mass that is replacing an existing air mass. This feature also displays pressure centers. Pressure centers are represented by a large red “L” for low-pressure centers or a large blue “H” for high-pressure centers. Pressure centers represent an area where pressure is measured to be either the highest or the lowest pressure relative to the surrounding area.



Indicates a low-pressure center. A low-pressure center is an area where the measured pressure is lowest relative to the surrounding area. Moving away from a low-pressure center in any horizontal direction results in increased pressure. Winds flow counterclockwise around low-pressure centers in North America.



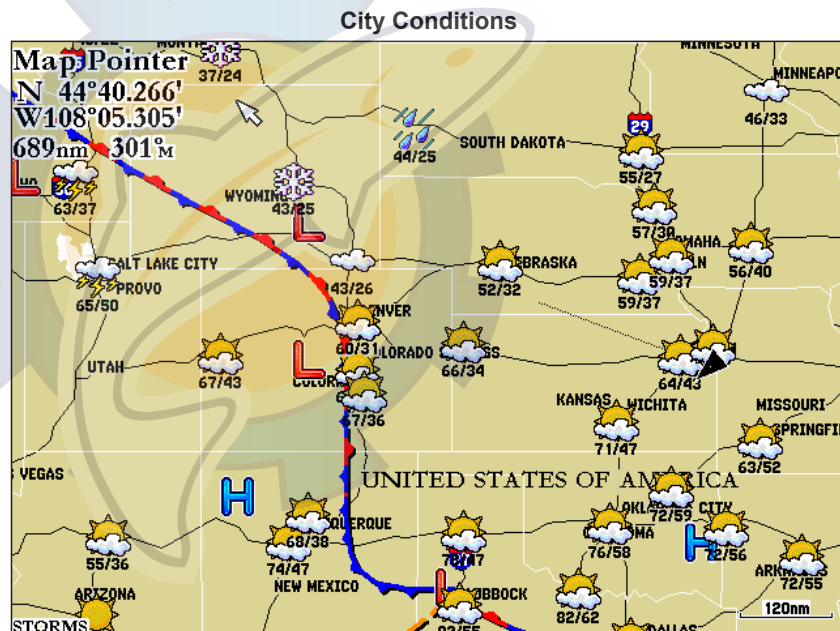
Indicates a high-pressure center. Similar to a low-pressure center, a high-pressure center is an area where the measured pressure is highest relative to the surrounding area. Moving away from a high-pressure center in any horizontal direction results in decreased pressure. Winds flow clockwise around high-pressure centers in North America.



City Conditions

This feature displays the current weather conditions at selected cities throughout North America. The current weather condition for an area is depicted by an icon.

City Condition Icons



Sea Surface

The Sea Surface category contains Temperature, Wave Height, Wave Period, and Wave Direction. Each feature can be turned on or off, or set to display at a selected zoom range. For more information on configuring units of measure for Temperature and Wave Height, see the chartplotter Owner's Manual.

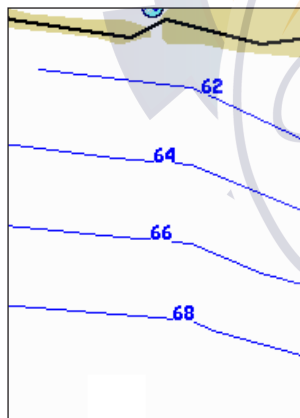
Temperature

The Temperature feature displays the water surface temperature. The temperature breaks are indicated by isobars. Temperature can be displayed in degrees Fahrenheit (°F) or in degrees Celcius (°C).

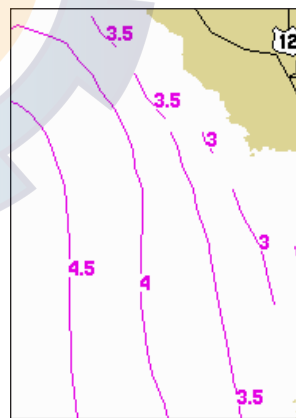
Wave Height

The Wave Height feature displays wave heights. The wave heights for an area are separated by isobars. Wave Height can be displayed in feet (ft.) or meters (m).

Temperature Feature



Wave Height Feature

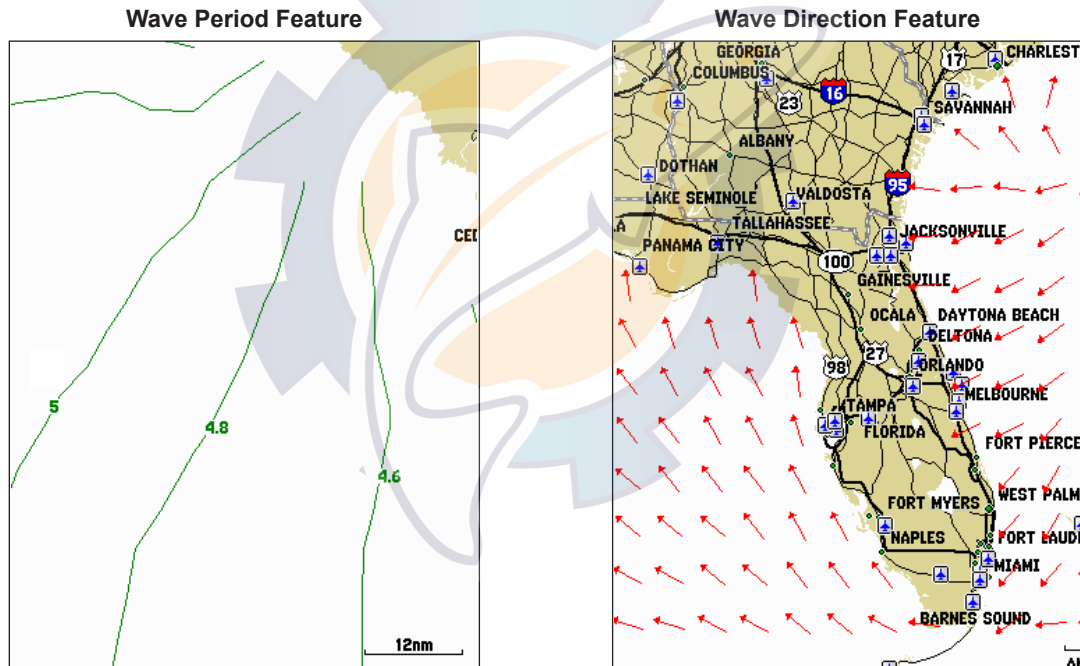


Wave Period

The Wave Period feature provides the time (in seconds) between successive waves.

Wave Direction

The Wave Direction feature shows the direction in which waves are moving, as indicated by the direction of the red arrows.



Main Menu

The Main Menu allows you to customize the weather data that appears on your GPSMAP 3000 Series chartplotter. For information on configuring weather on a GPSMAP 4000 Series or a GPSMAP 5000 Series chartplotter, consult your GPSMAP 4000 Series or GPSMAP 5000 Series chartplotter Owner's Manual.

Weather Tab

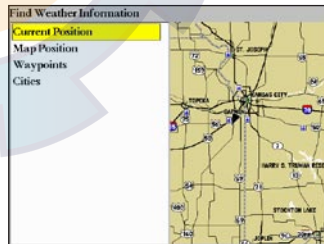
The GDL 30A provides current weather conditions, forecast information, and sea-surface information from the weather center nearest to your present location, or from a location selected using the Find Weather Information page. To display the Weather tab, press and hold the **ADJ/MENU** key to display the Menu Menu. Using the **ROCKER**, highlight the Weather tab. Five sub tabs are available: Current, Forecast, Sea Surface, Forecast Map, and Setup.

Current (Weather)

The Current (weather) sub tab displays current weather conditions observed at the weather data location closest to your current position or at a location selected using the Find Information page.

Normal Operation	
Celestial	Current Forecast Sea Surface Forecast Map Setup
Trip	Nearest To
Weather	Current Position
Database	GLSDes at Olathe, Johnson Co Exec Air, KS
Points	Temperature 82°
Routes	Dew Point 66°
Tracks	Winds 167° 17kt
DSC	Wind Gust 17kt
Card	Visibility 4.3nm
Setup	Pressure 29.82in
Alarms	Haze
System	
Pages	
Map	

If a condition field is empty, data for that field is not available at this time.



To search for data at a location other than your current location, highlight **Current Position** and press **ENTER**. With the Find Weather Information page displayed, highlight a search option and press **ENTER**. With a new location selected, all information shown in the sub tab categories relates to the selected location.

Forecast

The Forecast sub tab includes two panels that display forecast information for the location selected in the Current sub tab. The top panel displays the high/low temperature, chance of precipitation, and weather condition (cloudy, sunny, thunderstorms). The number of days that appear in this panel depend on the data available from the responding weather service center. If more than four days of forecasts are provided, use the **ROCKER** to move down the list.

The bottom panel on the Forecast sub tab features a detailed 24-hour forecast for winds, wind gust, and visibility. To see all of this information, use the **ROCKER** to move down the list. If a condition field is empty, data for that field is not currently available.

Reference	Current	Forecast	Sea Surface	Forecast Map	Setup
GPS	Kansas City, MO				
Tide	11-MAY-05	88° / 67°	10%	Partly Cloudy	
Celestial	12-MAY-05	82° / 58°	40%	Mostly Cloudy	
Trip	13-MAY-05	70° / 51°	60%	Thunderstorms	
Weather	14-MAY-05	70° / 48°	20%	Partly Cloudy	
Database	24 hour forecast for: Kansas City Downtown Air, MO				
Points	Forecast for: 12:00PM				
Routes	Winds 077M 10kt				
Tracks	Wind Gust ---kt				
DSC	Visibility 5.2nm				
Card	Haze				
Setup					
Alarms					

The scroll bars indicate that additional information is available. To scroll through the information, highlight the list and press up or down on the **ROCKER**.

24 hour forecast for: Kansas City Downtown Air, MO			
Forecast for:	12:00PM		
Winds	167M	12kt	
Wind Gust	18.0kt		
Visibility	5.2nm	or more	
Changing to at:	06:00PM		
Winds	147M	11kt	
Wind Gust	---kt		
Visibility	5.2nm	or more	
Changing to at:	03:00AM		
Winds	147M	11kt	
Wind Gust	---kt		
Visibility	5.2nm	or more	
Changing to at:	09:00AM		
Winds	157M	15kt	
Wind Gust	22.0kt		
Visibility	5.2nm	or more	

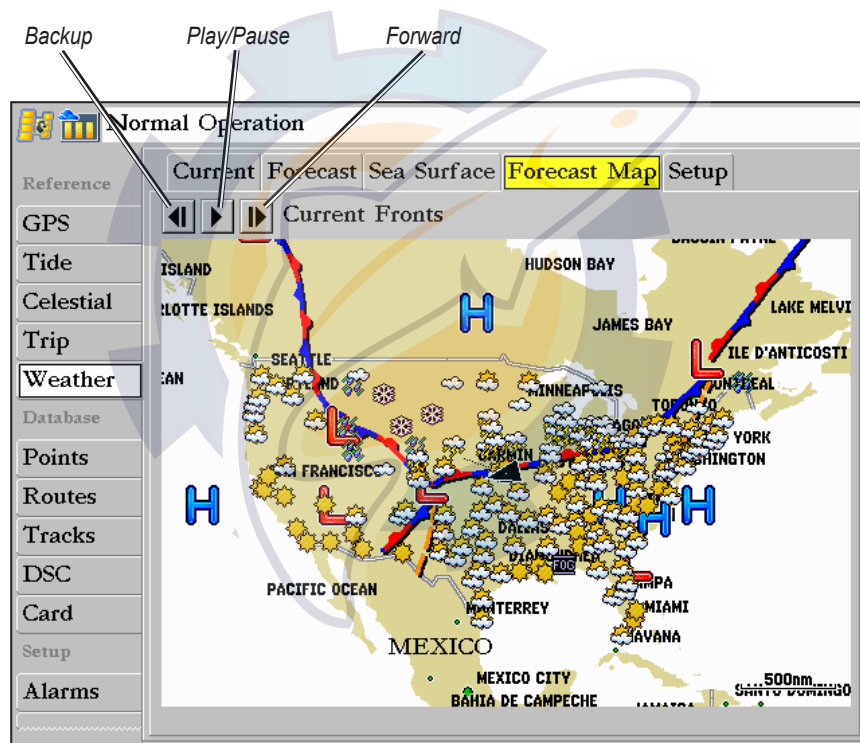
Sea Surface

The Sea Surface sub tab provides weather data of specific importance to mariners. This data comes from a variety of data sources that are nearest to your current or selected location. If a condition field is empty, data for that condition is not currently available.

Normal Operation					
Reference	Current	Forecast	Sea Surface	Forecast Map	Setup
GPS	01:00PM	421.6nm	051°M	From Current Position	
Tide	Temperature		42°F		
Celestial	Dew Point		41°F		
Trip	Winds		347°M	23kt	
Weather	Wind Gust		27.2kt		
Database	Visibility		----nm		
Points	Pressure		30.08in	+0.05in	
Routes	Water Temperature		42°F		
Tracks	Waves		4.3ft	00:00:05	
DSC	Tide Measurement		----ft		
Card					
Setup					
Alarms					

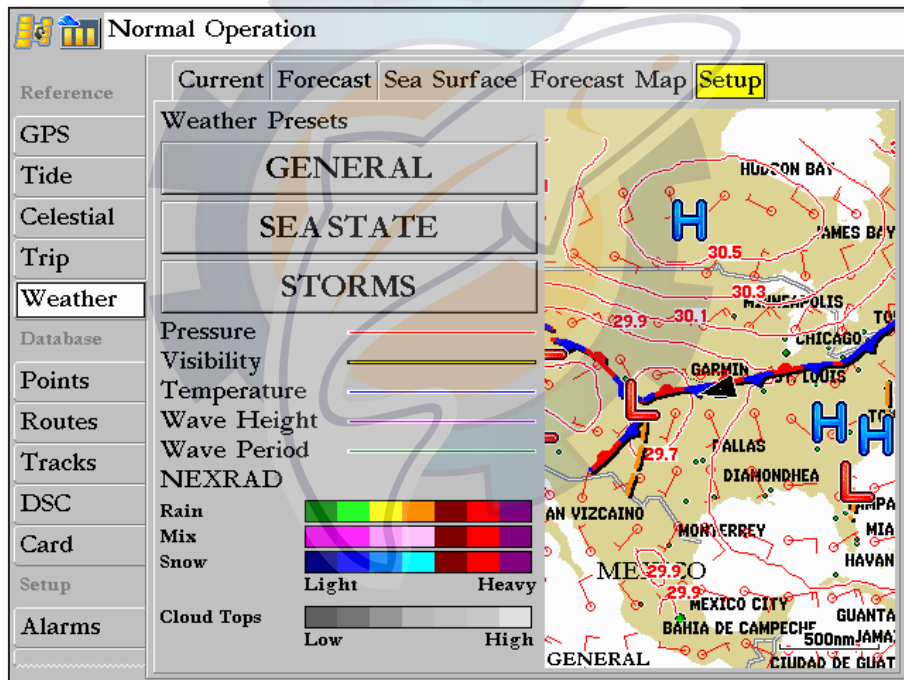
Forecast Map

The Forecast Map sub tab displays Fronts, High-Pressure and Low-Pressure Centers, and City Conditions. The map zoom range can be changed using the Range keys. The three buttons at the top of the map are used to control the display of the forecast conditions for the next 48 hours.



Setup

The Setup sub tab provides access to the three preset weather displays: General, Sea State, and Storms. The preset weather displays can be customized from this tab. The Setup tab contains a map that displays any changes that are made. Legends for all weather conditions are also shown. For detailed information on customizing the preset weather displays, see the chartplotter Owner's Manual.

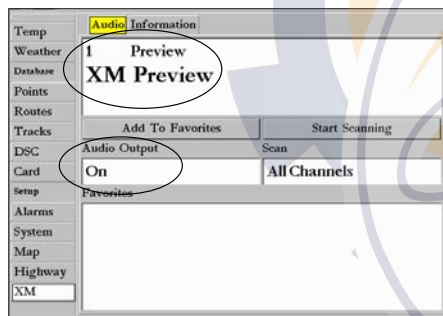


XM Tab

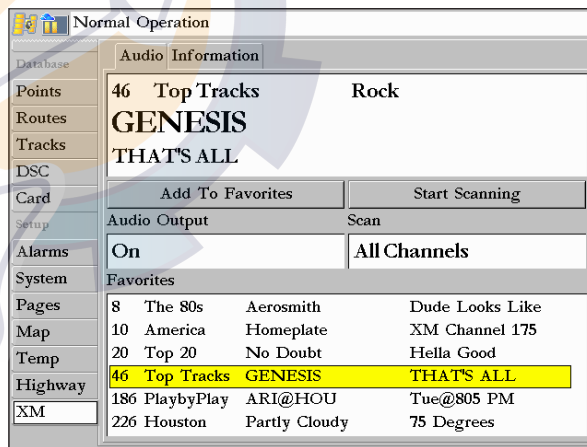
To display the XM tab, press and hold the **ADJ/MENU** key to display the Menu Menu. Using the **ROCKER**, scroll through the tabs and highlight the XM tab. The XM tab contains two sub tabs, Audio and Information. The Audio sub tab is used to tune and customize the XM Radio feature. The Information sub tab contains the Radio ID numbers and information about the XM service being received.

Audio

The Audio sub tab provides access to the XM Radio feature. From this tab, stations can be scanned, selected, and added to a Favorites list. Also, the Audio Output can be turned on and off. If the GDL 30A is properly connected, the Audio Output should be set to On. If CHECK ANTENNA appears in the radio tuning field, double-check to ensure that the GA 32 antenna is properly installed and that the audio cable is securely connected to your GDL 30A and to your stereo receiver. For more information on using the XM Radio feature, refer to the chartplotter Owner's Manual.



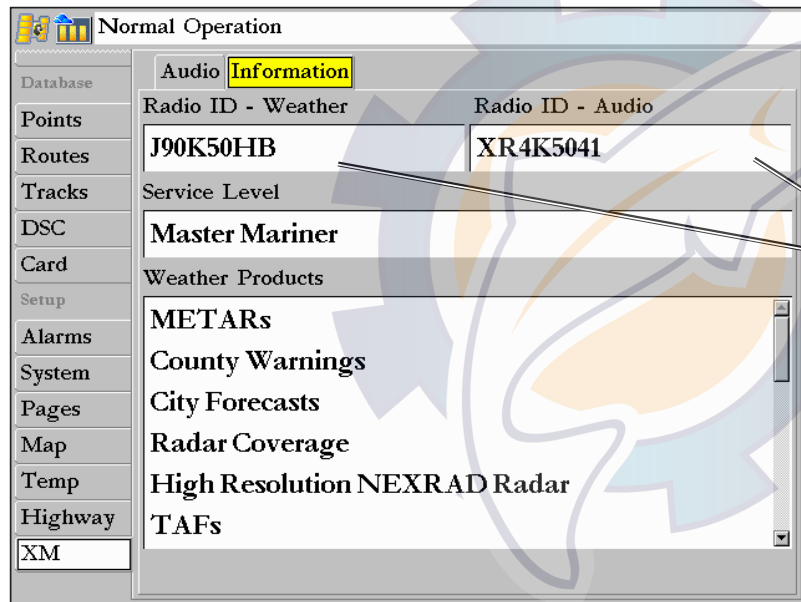
If your GDL 30A is properly connected, you will see "On" in the Audio Output box and "XM Preview" in the radio tuning field.



Audio Tab

Information

The Information sub tab contains the Weather Radio ID and Audio Radio ID numbers that are needed to subscribe to XM Service. Your XM Weather Service Level and a list of Weather Products that are being received appear here as well. These weather products determine and display the weather information on the chartplotter.



The Radio ID numbers are required when setting up the XM service. Copy these numbers and have them available before contacting XM.



NOTE: To obtain the XM Weather and Radio IDs from a GPSMAP 4000 Series or a GPSMAP 5000 Series chartplotter, select **Configure > System > System Information**.

Appendix

Weather-Related Broadcast Rates

Blink Codes

The GDL 30A powers on and off with the Garmin Marine Network.
The two-color (Green/Red) Status LED on the GDL 30A indicates the operational status of the module. The codes represent:



Green blinking, on for 1 second, off for 1/2 second (slow blink)

Status: GDL 30A is on and is receiving an XM signal.



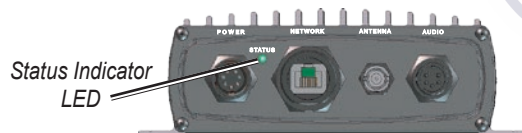
Red blinking, on for 1/10 second, off for 1/10 second (very fast blink)

Status: System alarm. The display device gives a message indicating the type of failure.



Solid Red (no blink)

Status: Software failure - Call Garmin Product Support.



Feature	Broadcast Rate (minutes)
NEXRAD	5
Cloud Tops	15
Storm Cells	1.25
Lightning	5
Wind	12
Pressure	12
Hurricanes	12
Visibility	12
Fronts	12
Sea-Surface Temperature	12
Wave Height	12
Wave Period	12
Wave Direction	12
Current Conditions	12
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GDL 30A Specifications

Physical

Size:	4 ³ / ₄ in. W × 2.00 in. H × 6 ³ / ₄ in. D (121 mm × 51 mm × 172 mm)
Weight:	1.5 lb. (0.68 kg)
Case:	Fully gasketed, high-impact plastic and aluminum alloy, waterproof to IEC 60529 IPX7
Temp Range:	From 5°F to 158°F (From -15°C to 70°C)
Power	
Source:	10–35 Vdc
Usage:	18 W max
Fuse:	AGC/3AG - 2.0 A
Data Output	
Source:	Proprietary Garmin data format
Audio	
Output Level:	300 mV rms into 47 kohm
Frequency Response:	10–20,000 Hz, ± 1 dB
Harmonic Distortion:	<0.5%



NOTE: When using the Chartplotter and GDL 30A on battery power only (engines off) for extended periods of time, be sure there is enough available amperage to run the units for the time period. Running other onboard devices at the same time may lower the available amperage, causing the Chartplotter and/or GDL 30A to shut off. Check with your local marine dealer/installer if problems persist.

GA 32 Antenna Specifications

Dimensions:	3 ¹⁹ / ₃₂ in. (91.6 mm) Diameter × 1 ¹⁵ / ₁₆ in. (49.5 mm) High
Weight:	7.1 oz. (201 g)
Case Material:	Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards
Operating Range:	From -40°F to 176°F (from -40°C to 80°C)
Cable:	Foil-shielded center conductor 18 AWG
Dynamics:	999 knots, 40g

Weather and Sea Surface Information

The GDL 30A receives XM Weather Radio data and shows it on your chartplotter. The weather data for each feature comes from reputable weather data centers such as the National Weather Service and the Hydrometeorological Prediction Center. (See the XM WX Satellite Weather Web site at <http://weather.xmradio.com/weather> for more information.) Any weather feature can change in appearance or interpretation if the source that provides the information changes. XM Weather Radio data is broadcast at set rates (see [page 26](#) for all weather-related broadcast rates). For example, NEXRAD Radar data is broadcast at five minute intervals. When the marine network is turned on or when a new feature is selected, the GDL 30A has to receive new data before it can be displayed. For this reason you may experience a delay before weather data or a new feature appears on the map.

WARNING: The XM Weather Radio data is merely supplemental and advisory in nature and is not intended to be relied up on as safety-critical information. You should always exercise caution and common sense when confronted with severe weather conditions.

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XM Satellite Radio Inc.

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