

**MarCum**  
TECHNOLOGIES

**MX-7GPS**  
Digital Sonar & GPS System

User Manual

**MX7** GPS



**LITHIUM** Equipped



**MX7** GPS **Li**

**LITHIUM**  
**SHUTTLE**  
**COMBO**

[www.MarCumTech.com](http://www.MarCumTech.com)

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# INTRODUCTION

Now introducing the leader in sonar and mapping technology, MarCum Technologies brings you the MX-7GPS. As a Lithium-powered sonar/GPS combination system, we've taken GPS mapping and fused it to MarCum's legendary sonar platform. For decades, we've built the best ice-specific sonar platform in the world. One that was built on power, Interference Rejection (IR) so advanced it's patented, zoom that was adjustable anywhere in the water column, and a veritable laundry-list of industry "firsts." We gave birth to the modern movement of ice fishing's information age, by taking a stationary circular display and breathing life into it. We invented on-screen scenarios that involved dynamic movement which more closely matches what's happening below ice, all while staying true to the number one aspect that makes ice fishing sonar specific to our sport – real-time. In a stationary, vertical game of cat and mouse, where latency and sonar lag are unacceptable, MarCum's response time is completely unrivaled. That lightning fast sonar reaction has been a hallmark of the MarCum brand and has made it the most sought after ice sonar platform to this day. Not all sonar is created equal, and that's especially true when talking ice fishing. The best ice anglers in the world require electronics with a full-time dedication to the sport. Take the MX-7GPS out of the box and it's automatically locked in and ready to fish; equipped with a Lithium LiFePO4 battery, and deluxe soft pack. Long story short, we've added more features, making them longer lasting, lighter, and technologically superior, all while staying true to our real-time roots – a defining characteristic in any quality ice sonar.

# PRODUCT FEATURES

- Dual beam 8/20 degree transducer
- NEW 12V10amp/h Lithium LiFePo4 battery
- 3-amp hour rapid-charge charger
- Patented interference rejection
- Internal GPS receiver
- Navionics Basemap onboard
- Single, microSD card slot
- True-time 7" LCD display
- Multiple depth modes
- Optimal single frequency sonar (200khz)
- Customizable screen options
- Deluxe padded soft pack carrying case
- 8 feet of Kevlar-reinforced transducer cord
- Made in USA
- 2-year warranty

## GETTING STARTED

### ICE SYSTEM SET-UP

Your MX-7GPS comes virtually ready to fish. Open the top cover of the soft pack, loosen the knobs on the sides of the monitor and the monitor can now be positioned how you want it. Once the monitor is positioned, tighten the knobs again to hold the monitor in place.

Look behind the monitor and hook up the MX-7PGS's power cord to the battery terminals. While you are at it, remove the entire system from the soft pack so you can see exactly how everything connects—this makes it easier down the road if you ever need to change a battery or transducer. Your MX-7GPS is delivered with a rechargeable 12-volt 10-amp Lithium LiFePO4 battery that is charged 70%, so you can take it fishing right away. Even though the battery comes with a charge on it, due to storage time or other factors it may not be fully charged to 70% when you get it, so if you are not going fishing immediately you should hook up the charger to make sure the battery has a full charge.

To charge the battery, see below “Battery Charging” section. The MarCum MX-7GPS will operate for up to 18 hours on a fully charged battery. If you are going to be in a situation where you will want to use your system for more than 18 hours without recharging, having a second, fully charged battery with you is cheap insurance that will allow you to get full use out of your system for the duration of your trip.

Inside the MarCum MX-7GPS’s soft case is an electronics shuttle that has compartments for the battery and the dual beam transducer, as well as a transducer arm. The adjustable transducer arm allows for maximum flexibility in positioning the MX-7GPS around the ice hole and can even be moved to the other side of the shuttle if desired.

Using the MarCum MX-7GPS can be as simple as turning it on—the factory settings will come on automatically and allow you to use the MX-7GPS in the most popular configuration.

Be sure to explore all the options available to customize your Dashboard Display. With five different sonar portals, four color palettes, two cone angles, and a myriad of other settings, there are many possibilities. Changing your settings is easily done on the fly but experimenting while using the simulator at home will help you learn the “flow” of the menu and settings.

## **BATTERY CHARGING**

Your MarCum system comes with a 3-stage battery charger. This style of charger has proven to be the most effective and easiest to use of all charging systems available. Because this is a 3-stage charger, there is no danger of overcharging your battery. When properly cared for, a LiFePO4 battery will last for 2000 charge cycles. Batteries are made to be used, and they need to be used to make the most of them. The most important thing you can do is to promptly recharge your battery after each use. Not charging your battery immediately after use is the number one thing that leads to battery failure.

For safety reasons, it is recommended that you place your system on a flat, hard surface like cement or tile when charging it, away from any flammable materials. Be sure to disconnect the charger from the wall when not in use and avoid leaving your battery hooked up to the charger for extended periods of time.

When you get home from a trip, put your battery on charge right away and leave it there overnight, or for around 4-6 hours. Likewise, on the night before an ice fishing trip, put it on the charger again to ensure a charge. Again, there is no danger of overcharging your battery. We often talk to people who hesitate to charge their battery after each use for fear that the battery will develop a “memory” and this will lead to a shortened run time—THIS IS FALSE!!! ALWAYS CHARGE YOUR BATTERY AFTER EVERY USE!!! Be sure, to use the charger that came with your system.

## **TO CHARGE YOUR BATTERY:**

Your battery has a wiring harness attached to it that has “piggyback” terminals on it, enabling you to keep the power cord from the system attached to the battery, as well as having the wiring harness with receptacle for your charger always attached. To charge, simply couple the end of the charger with the end of the wiring harness. It is normal for a green light to appear on the charger now if the charger is plugged into the battery only. It is also normal for the light on the charger to be green if it is just plugged into the wall. When it is plugged into the wall and battery, you will see a red LED light appear on the charger. If the light is red, the battery is being charged. When your battery is fully charged, this red light should change to green. If it is time to go fishing and the light has not turned green, go fish and try to allow a longer charging period next time.

Batteries are an expendable item and must be replaced periodically. The batteries that we use are the “LiFePO4” variety, they are 12 volts 10 amps and have a life span of approximately 2000 charge cycles. The more amps the battery has, the longer it will run on a full charge. Your system can be powered off any battery that is 12 volts, even a large automotive or deep cycle battery.

If you are having difficulty with the charging process, see our “Battery Troubleshooter” on our support site. If you need to remove the battery, slide the power cord leads off the battery terminals. Remove the Velcro strap that is holding the battery in place and lift the battery out. To replace the battery, place a new battery of similar specifications into the battery compartment and secure it with the Velcro strap and re-connect the positive and negative terminals onto the battery.

## **SETTING THE TRANSDUCER FOR ICE FISHING**

When used in conjunction with the retractable pivoting transducer arm and rubber stopper, the MX-7GPS's transducer will automatically level itself in your ice hole. To begin operation, take the transducer out of the recessed holder, and rotate the adjustable ice arm out from inside the shuttle. Extend the transducer arm, (the cable should already be threaded through it with stopper in place) and deploy the transducer into the water. We recommend setting your stopper to have the transducer down the least amount possible. The MarCum MX-7GPS puts out enough power that in most cases it is not necessary to have your transducer down more than a few inches below the water line to get a good reading. When the ice thickness is over two feet, it may be necessary to have your transducer set a little farther down.

Remember--the less transducer cable you have out, the easier it is to pull it out of the water when bringing in a fish, or to move to a new location. You may experience a reflection signal from the side of the ice hole due to the curvature. You can prevent this by placing your transducer just below the bottom edge or even with the bottom edge.

It is also important that you keep the cable near the center of the ice hole. We frequently hear from anglers who allowed their cable to freeze into the side of the ice hole. If this should happen to you, make sure the system is turned off before attempting to chisel it out. If you accidentally cut the transducer cable, do not try to use that transducer again. Replacements can be found on our website.

## **MOVING THE TRANSDUCER TO A NEW LOCATION**

Being mobile is one of the keys to being successful on the ice. Keeping the amount of transducer cord, you have out at a minimum will make transporting your MX-7GPS easier. Similarly, you may need to quickly remove your transducer from the hole when about to land a fish. We have seen anglers in a panic grab the shuttle itself and toss the entire system to the side. This is no way to treat any piece of electronics; a much better approach is to simply lift the transducer out of your way by the cord, and the shuttle itself can be gently set aside.

Whenever you are moving via sled or vehicle, always fold up your transducer arm, stow the transducer inside, and close the protective soft pack.

## **READING THROUGH ICE**

The MarCum MX-7GPS will provide accurate information reading through ice providing the ice is reasonably clear. Wet a spot of flat ice with at least a cup of water to improve the coupling of the transducer to the ice. Place the face of the transducer firmly on the wet ice, and you will now be able to see the depth displayed digitally, and a signal showing the bottom (and fish) on which ever sonar windows you have open. Drilling into the ice 1-2" before taking a reading may be necessary if the surface of the ice is very rough, or if the ice is filled with air bubbles/debris.

## **GPS SET-UP**

The GPS (Global Positioning System) will pinpoint your location by triangulation. How does it work? In order to pinpoint your location, the receiver (built inside of the MX-7GPS) must be locked on to at least three satellites. Locking on to 4 or more satellites will add to the accuracy.

The MX-7GPS is **ONLY** compatible with Navionics Mapping Software, and for best results it is recommended that you purchase

one that is specific to the lakes in your area if you want to see contour lines. The MX-7GPS comes with a base map that shows only basic land and water features.

These are the Navionics Chartplotter Cards that we recommend:

Navionics +  
Platinum +  
Platinum Hot Maps

When the MX-7GPS is first powered up it will be in SONAR/MAP SPLIT screen with Navionics Basemap on the right. The map will appear with a diamond in the center; this is the cursor showing your location (If you are locked into 3 or more satellites). The default location will be shown upon activating the GPS panel. For the MX-7GPS to lock into your location, you must be outside, away from buildings, trees or other things that may block the satellite signal. It may take up to an hour for the GPS to lock in the first time you use it, but after the first time it should take 10 minutes or less.

Map Information:

Along the bottom of the screen is where your Latitude/Longitude is displayed, along with other data. As your physical location changes, the cursor will move along with it, leaving a trail.

Zoom in/Zoom out is accomplished with the PLUS (+) button to zoom in and the MINUS (-) button to zoom out. Searching the map must be done with four directional ARROW keys to move the map across the screen.

To mark your locations as a waypoint simply press the WAYPOINT button (flag button) located above the "X" EXIT button. Once the waypoint button is pressed the waypoint information will appear on the screen. From here you can edit the name, comment on the area, change the icon shape or color. Selecting the "Ok" of the pop-up menu will save the waypoint information.

If you would like to mark a waypoint that is not your current location, simply search the map with the four ARROW keys and press the

WAYPOINT button where you would like the waypoint to be located. All waypoint settings can be adjusted to your preferences by entering the “Waypoints” settings menu.

Pressing and holding the Waypoint button for 3 seconds is a quick key to open the “Waypoints” setting menu

## **MX-7GPS OPERATION**

The MarCum MX-7GPS has many functions and settings that are selected or changed by buttons on the Control Panel. Learning what each of the buttons (POWER, SENS, IR, MENU, WAYPOINT, ARROW KEYS, BACK ARROW / ENTER, +/-, X) does will enable you to get the most out of your system.

Note: You can experiment with different settings and dashboard arrangements in SIMULATOR mode.

## **CONTROL PANEL**

The following is an explanation of each button on the control panel and what it does. Some of the button functions can also be accessed in the main menu. Pressing any of the Control Panel buttons will cause a window to open, enabling the user to make the desired adjustments. Any changes made to the settings will activate when the EXIT (X) button is pressed.

**POWER** - Press and hold this button for 2 seconds to turn the system on or off. When turning the system on, hold the power button until you hear the beep. The power button is the very bottom left button on the panel.

**SENS** - The SENS (sensitivity) button controls the amount of sensitivity required by the system to pick up objects like bottom, weeds, fish, or lures and jigs. You can adjust this setting by using the +/- buttons.

**IR** - The Interference Rejection system is designed to suppress competing return signals from other sonar units being used within proximity. You can adjust this setting by using the +/- buttons.

**MENU** - To access the menu options, start by pressing the Menu button just above the power button. This button is directly above the power button.

**WAYPOINTS** - Press to place a waypoint at your current location. When exploring the map with ARROW keys press Waypoint button to mark the location your exploring. Pressing and holding the waypoint button will act as a quick key to access the waypoint / routes menu.

**ARROW KEYS** - Used to move around the menus and to move your cursor around your map.

**BACK ARROW / ENTER** - Select the desired change in the drop-down menu's or to check/uncheck options.

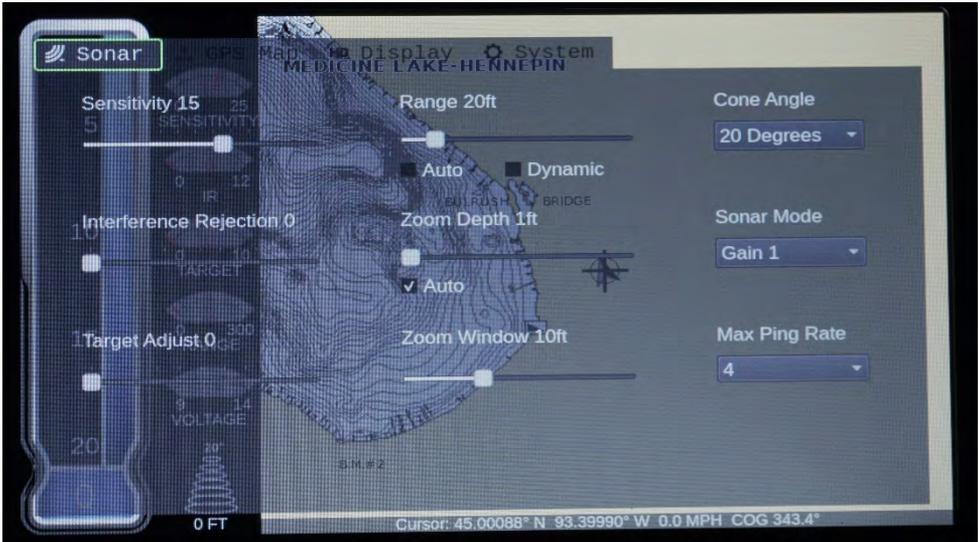
**PLUS / MINUS** - Used to 'increase' or 'decrease' various settings or to Zoom 'in' and 'out' on your map.

**“X” EXIT** - Exit the menu or to Exit from exploring your map and bring you back to your current location.

## **MENU OPTIONS**

To access the menu options, start by pressing the Menu button just above the power button. Use the arrow buttons to highlight the desired sub-menu and access other functions of the MX-7GPS. You can also press the Menu button multiple times to switch between the different sub-menus. Some of these functions are also accessible using the other buttons on the Control Panel. When you press the MENU button, four sub-menus will be revealed—SONAR SETTINGS, GPS MAP SETTINGS, DISPLAY SETTINGS, and SYSTEM SETTINGS. The sub-menu functions are outlined below:

## Sonar Settings:



**Sensitivity:** This controls the amount of sensitivity required by the system to pick up objects like bottom, weeds, fish, or lures and jigs. The lower the number, the less sensitivity, conversely higher numbers mean more sensitivity. To adjust your sensitivity, first press the SENS button and the menu screen will appear with the Sensitivity function highlighted. Pressing the PLUS/MINUS will adjust your sensitivity, and the sensitivity setting will now be digitally displayed on the SENS gauge display. The best SENS setting is achieved by turning up your sensitivity until you receive a clear and steady bottom reading (start between 15 and 20). To see your lure or bait, turn up the SENS some more until you just begin to display your bait without it fading or flickering on the screen. The sensitivity will go up to 25, but you are likely to have it set considerably lower.

**Interference Rejection:** The Interference Rejection system is designed to suppress competing return signals from other sonar systems being used within proximity.

When other sonar systems are causing interference to the display of the MX-7GPS, activate the IR feature by depressing the IR button located on the control panel of the MX-7GPS. Interference is indicated by unusual signals flashing or scrolling across your display. There are 12 levels, or channels, of interference rejection. Press the IR button once to open the IR window, now use the PLUS/MINUS buttons to select the desired level of IR. The correct level of IR will be achieved when the display is clear of display clutter. In some extreme cases, clutter will be greatly reduced but not eliminated.

Anytime two or more sonars are being operated in proximity to each other, there is the potential for interference. Deep water and hard bottom will increase the likelihood that one or more of the competing sonars will experience interference. Besides experimenting with different levels of IR, the anglers experiencing interference can also try having their transducers set at different levels, going to narrow cone angles, different Gain modes and reducing sensitivity settings.

**Target Adjust:** This feature allows the angler to change the size of the return signals being displayed on the monitor without increasing the sensitivity. The TARGET ADJUST feature will give you the smallest, signal size at "0", and the signals displayed will get thicker as you increase the TARGET ADJUST. This feature should be used in conjunction with the SENSITIVITY to fine-tune your display. Those who have a hard time seeing, as well as those who fish from a standing position will really appreciate the "TARGET ADJUST" feature.

**Range:** The MarCum MX-7GPS has nine different fixed ranges, as well as the ability to create custom ranges using the Dynamic Depth

feature. The Range settings can be found under the Sonar Setting Menu.

**Auto Range ON:** This setting is suggested for “Open Water” use. Selecting AUTO menu box will put the MX-7GPS into a sort of “search mode” where it will detect the bottom and automatically lock into one of the nine ranges [10, 20, 40, 60, 80, 120, 180, 240, and 300]. This is a feature that allows you to simply turn on the system and begin fishing. To enter Auto Range, highlight the AUTO menu box, and use the PLUS or the ENTER button to select. The MX-7GPS will automatically lock into the appropriate depth range. For instance, in 32 feet of water, the MX-7GPS will lock into the 40-foot range. In 45 feet of water the MX-7GPS will automatically lock into the 60-foot range and will adjust accordingly as depths change.

**Auto Range OFF:** This setting is suggested for “Ice Fishing” use. By de-selecting the AUTO menu box allows the user to decide which fixed range they would like to have displayed. Highlight AUTO and use the MINUS or ENTER button, to deselect the checkmark to enter Manual Mode. We offer the manual range functions because in some circumstances the AUTO range functions can behave erratically. In situations where there is heavy weed growth, uneven bottom contours, or very shallow water, it is suggested that the user manually selects a fixed depth range.

**Dynamic Range ON:** This setting will maximize the space on your display by utilizing a variable range that can be adjusted to just slightly deeper than the actual depth. For example, if you were fishing in 23 feet of water, the Dynamic Depth feature can create a custom range of 0 - 25 feet. Similarly, if you were in 29 feet of water, the Dynamic Depth range will be 32 feet. The Dynamic Depth range will not go shallower than 10 feet. To fine tune your display, Highlight DYNAMIC, and use the PLUS or ENTER button to enable, then select the RANGE scale, and pressing the PLUS or MINUS buttons to get to the desired DYNAMIC DEPTH range. If the water is 21 feet deep, you would select 22 feet. Now the DYNAMIC DEPTH has created a 0 – 22-foot range, utilizing virtually 100% of

your display.

**Dynamic and Auto Range OFF:** This setting allows you to choose from one of the nine ranges [10, 20, 40, 60, 80, 120, 180, 240, and 300]. Highlight DYNAMIC Scale check box and make sure it is not selected. If it is de-select it to enter Manual Mode. Highlight the Dynamic scale and use the PLUS/ MINUS to change the depth range.

**Zoom:** This feature allows you to focus the display on a specific depth within the water column and can be a great benefit in a variety of fishing situations. See “ZOOM” section below for more info on the activating and using ZOOM.

**Zoom Depth:** This allows you to select the upper range of the portion of the water column you would like to zoom in on. Whenever you are utilizing the ZOOM menu, keep in mind that it “times-out” after 6 seconds.

**Auto Zoom:** This feature activates Bottom Lock Zoom.

**Zoom Window:** The actual size of the Zoom window can be adjusted to four different ranges; 5, 10, 20, or 40ft scale.

**Cone Angle:** All transducers send down a signal that is shaped somewhat like a cone. Your MX-7GPS easily switches from a 20-degree cone angle (good for general use) to a narrow 8-degree cone angle (good for water over 40', or any time you need a more precise view of what is below you). See “Cone Angles” below for more information. When the MarCum MX-7GPS is first turned on, it will be transmitting utilizing the 20-degree setting. To switch from 20 degree to 8 degree, press the MENU button, highlight CONE ANGLE and use the PLUS/MINUS buttons to highlight the desired selection. The cone angle changes as soon as you highlight a selection and the Sonar Footprint on the gauge display will change with it.

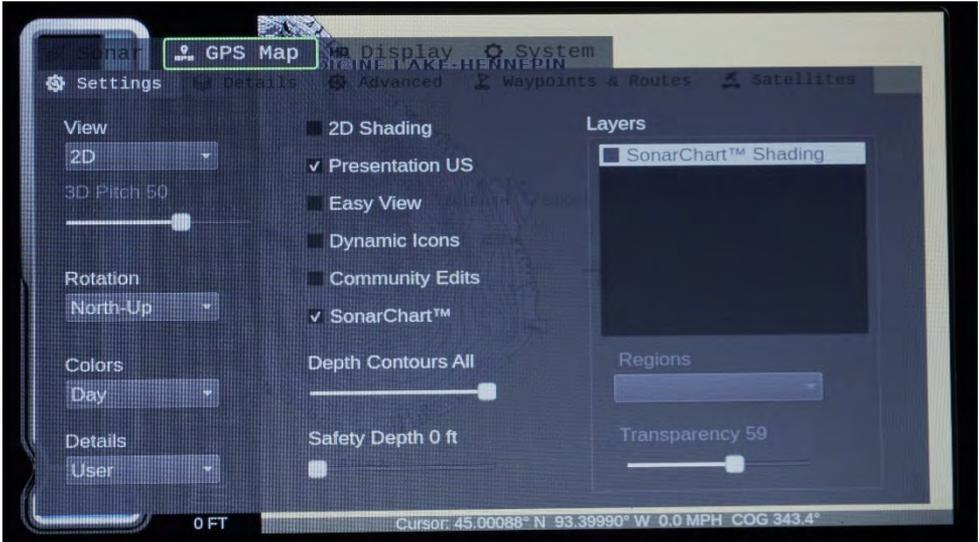
**Sonar Mode:** The MX-7GPS has two different Gain modes, Gain 1 (default) and Gain 2. Each gain setting will have a different gain curve output and will change the readings on your sonar screen. Experiment with each gain setting to find the one that works best for you in your current conditions.

**NOTE**—When ice fishing in shallow water [10' or less] Gain 2 is recommend; and deep water [10' or more] Gain 1 is recommended, however experiment with both to see which one works better for you. To switch from Gain 1 to Gain 2, simply press your Menu button highlight the Sonar Settings.

Then highlight Sonar Mode and use the PLUS/MINUS buttons to highlight the desired selection.

**Max Ping Rate:** Adjusting this setting will increase the response time of signals from your transducer to the screen. If fishing shallow water (less than 20 feet) use the lower settings (1 or 2). Likewise, you will see better performance with the higher settings in deeper water. Highlight MAX PING RATE found under the Sonar Setting menu and use the PLUS/MINUS buttons to change your ping speed.

## GPS Map Settings



**2D / 3D Mode:** Toggle the map between 2D and 3D mode by turning this on/off (3D functionality is only available on Navionics Platinum products)

**3D Pitch:** Changes the pitch, (viewing angle), of the map when in 3D mode (This functionality is available only for Navionics Platinum products)

**Rotation:** Choose between North-Up or Track-Up. North- Up keeps North at the top of the screen. Track-Up keeps compass directions according to the direction you are traveling.

**Colors:** Changes your map colors for Day, Night or Bright for the Map.

**Details:** Choose between Standard, All, or User for map details. “STANDARD” will not show contour depth numbers. “ALL” will display Contour depth numbers. “USER” will display what you have selected throughout all menu options.

Note: You can change settings of all options within the other GPS Map submenus.

**2D Shading:** This function is only available with the Platinum products from Navionics. When activated it will apply contour shading to the map.

NOTE: Some lakes may not have contour shading depending on lake information from Navionics.

**Presentation US:** Provides marine charting information such as symbols, colors of the nautical chart and wording for U.S. Presentation.

**Easy View:** Magnifies the size of chart symbols and text.

Note: There is no indication on the chart showing that this feature is active. You will have to go to your GPS Map Settings submenu tab to see if this feature is activated.

**Community Edits:** Turns on the chart detail including Navionics edits. These are user edits and information uploaded by users "Navionics Community" and made available in Navionics charts. (<http://www.navionics.com/en/community-edits>).

**Sonar Charts™:** When selected it will use the SonarChart™ that is available on the Navionics chip inserted.

**Dynamic Icons:** Displays Icons on the body of water such as buoy locations.

**Depth Contour:** This feature allows you to draw in the map up to

the given depth value. The value is specified in the depth unit set.

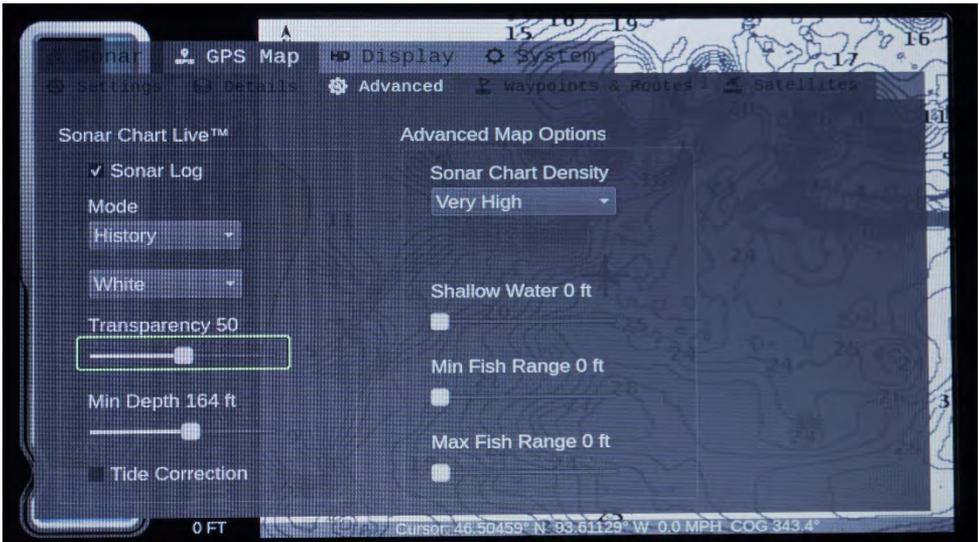
**Safety Depth:** The Navionics charts use different shades of blue to distinguish between shallow and deep water. Depth areas are displayed in darker blue (shallow depths) to lighter blue (less shallow depths). Those areas with depths over the selected value, and therefore navigable under safety conditions, will be displayed in white. DRYLINE areas will be displayed in green. This option is based on your boat's parameters

**Layers:** Shows Satellite images of map if compatible with your Navionics chip. (This functionality is available only for Navionics Platinum products)

- **Land Only**
- **Land and Shallow Water**
- **Land and Sea**

**Transparency:** This allows for the Map Overlay's transparency to be set. The lower numbers, (i.e. 50), will allow you to see the Overlay to the map more vividly. The higher numbers, (i.e. 100), will allow the Overlay to be more transparent.

## Advanced Map Options



**Sonar Chart Live™:** Create your own 1ft contour map. See Sonar Chart Live settings section.

**Sonar Log:** Select this will allow for you to access the rest of the Sonar Chart Live menus for creating your own map.

**Mode:** Select Record to start recording, History to view what you've recorded. Off to shut off your Sonar Log and stop recording.

**Mode Color:** What you have recorded will show with the select color over your map to show where you have recorded.

**Transparency:** Increase or decrease how visible the selected color of Mode shows. (i.e. 50), is visible color (i.e.100) eliminates the color.

**Min Depth:** Shades Selected depth and shallower. If you want to

view your recorded Sonar Chart Live data, you will want to set this depth to greater than the lake depth.

**Tide Correction:** When selected it will adjust for oceanic tide.

**Sonar Chart Density:** Changes the contour line details on lakes you have recorded or public lake information if available.

Note: When using Sonar Chart Live set to “Very High” to see 1ft contours.

- Very High- 1-foot contour lines
- High- 2-foot contour lines
- Medium- 4-foot contour lines
- Low- 8-foot contour lines

**Shallow Water:** Setting the shallow water to your desired depth will create red dots on your map at that set depth and shallower.

**Min Fish Range:** When depth is set it will highlight the desired depth and shallower.

**Max Fish Range:** When depth is set it will highlight the desired depth and deeper.

**Note:** When using Min and Max Fish Range together your highlighted fishing range will appear in white.

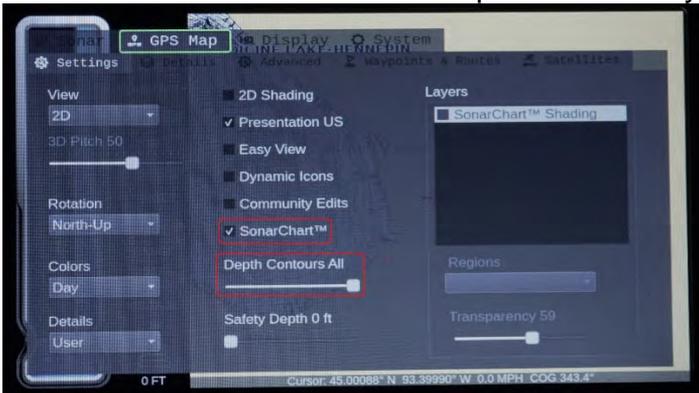


**Example:** Min set to 13 feet, Max set to 16 feet. The 13-16-foot range will be highlighted in white.

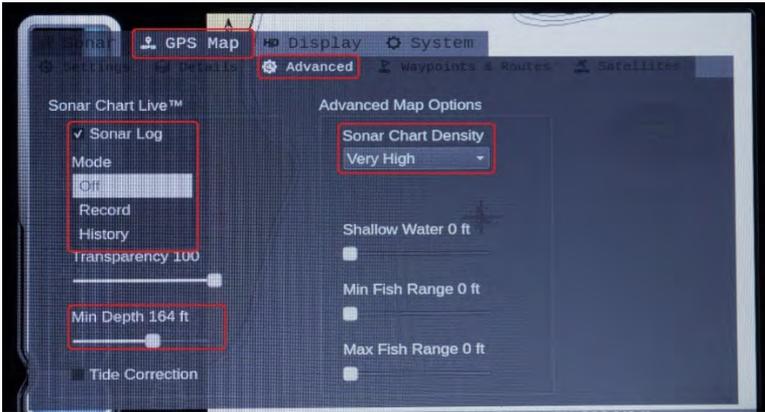
# Sonar Chart Live™ Settings

Getting your Sonar Chart Live turned on is an easy process.

1. Have your Navionics Chip inserted into the Micro SD slot of the MX-7GPS system.
2. Press the Menu button and select your GPS Map Settings menu.
  - a. Make sure you have the SonarChart checked and Depth Contours turned to all.
    - i. Having it set to all will provide you with the most contoured detailed map available on your chip.



3. Select your Advanced menu option under the GPS Map menu.
4. Select Sonar Log under the Sonar Chart Live™.
5. Select Mode and change to Record, Off to turn the record off and History to view what was recorded.
6. Color will show where you have recorded over your map on the chip.
7. Advanced Map Options select Very High to show 1ft Contour lines of what you have recorded.
8. Select Min Depth to desired scanning depth.



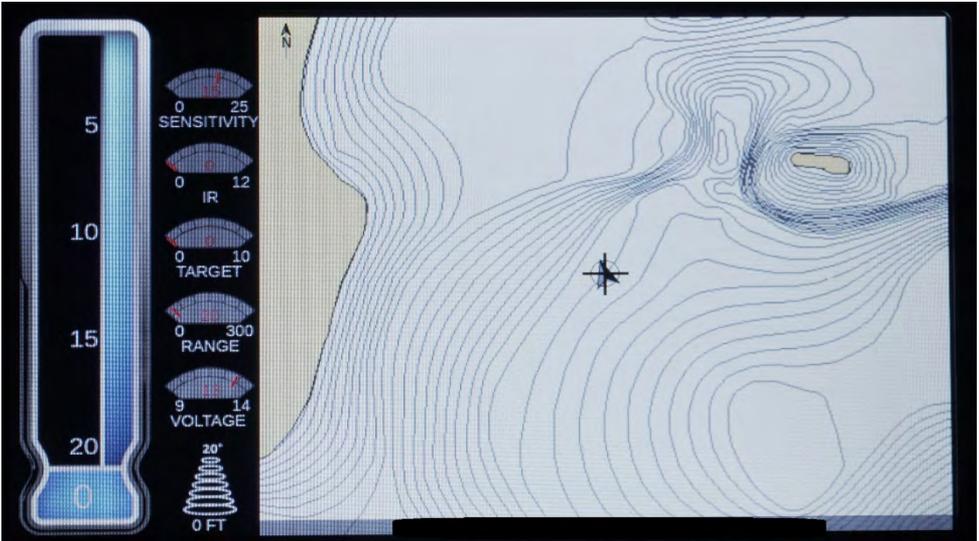
**Note:** If set to zero the system will record a contour map. It just will not display as you are recording. We recommend setting it to a depth deeper than what the lake is. Here we set it to 164ft. That way all contour lines up to that depth will display.

9. You can save your settings so that your sonar chart live is set to your preferences in your System menu. Then use record or history as needed.

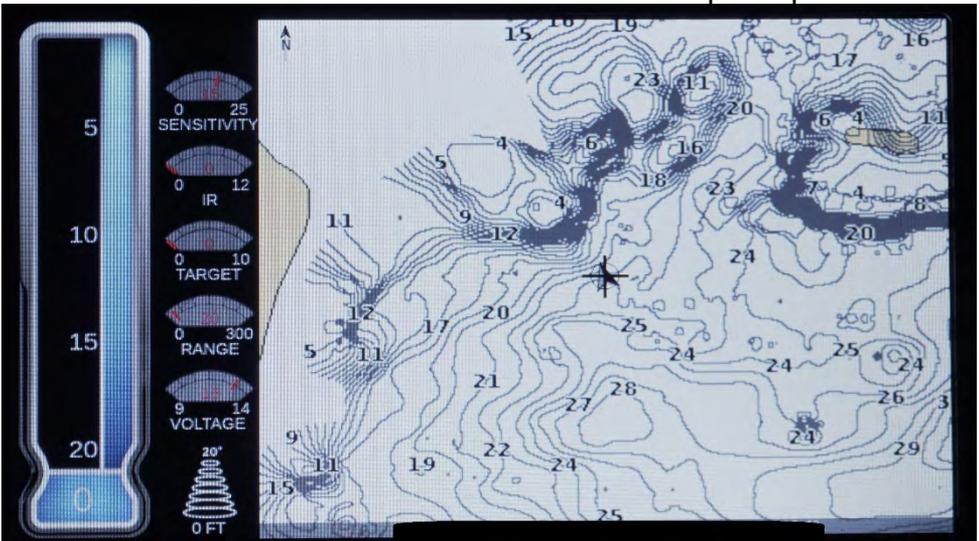
Here is an example of a before and after shot of the same lake.



Note: In this above image the GPS Map Setting had the SonarChart deselected and Navionics Hotmaps chip.



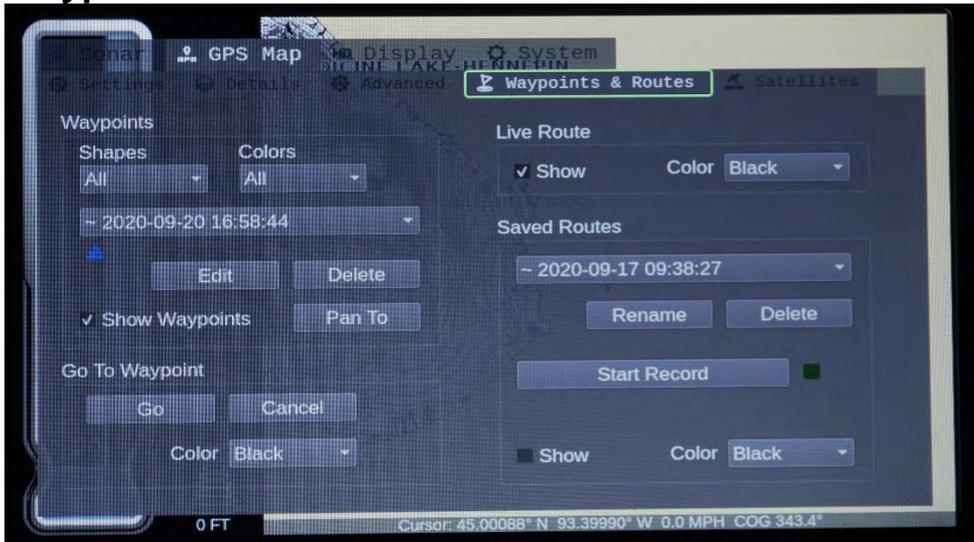
Note: In this above image the GPS Map Setting had the SonarChart selected and Navionics Hotmaps chip.



Note: In this above image the GPS Map Setting had the SonarChart selected and Navionics Hotmaps chip; with depth contours all changed to zero. Very High chart density and

Mode History selected in the Sonar Chart Live™ menu to view after turning the Record feature off

## Waypoints & Routes



**Waypoints:** You will be able to edit your dropped waypoints and change the name, shape of the waypoint along with the color of the waypoint. Selecting to show all your waypoints or not. Along with the ability to select a particular waypoint; and select pan to which will make your map go to that waypoint.

**Go To Waypoint:** If you have a selected waypoint and select the Go under the Go To Waypoint it will create a trail for you to follow to get to that coordinate.

**Live Route:** It will show your route you have taken when turned on.

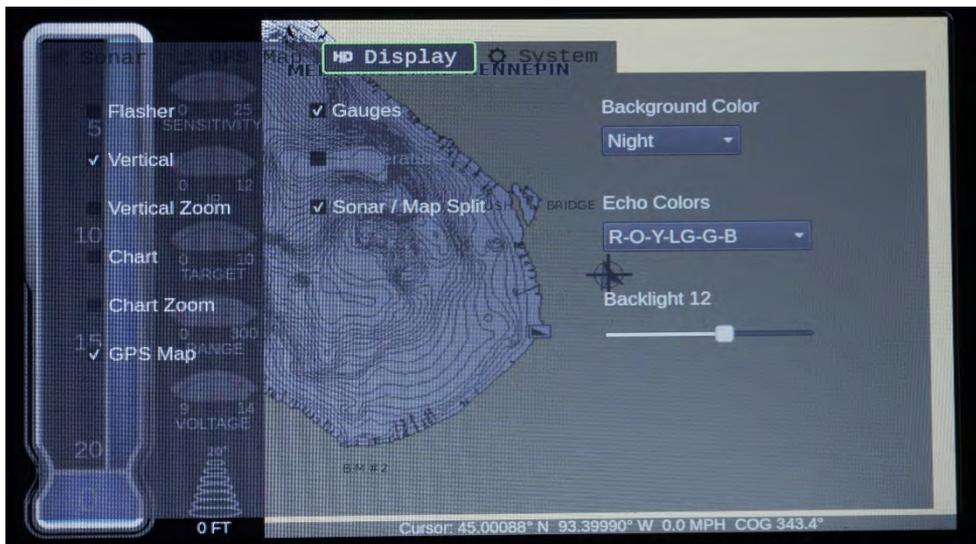
**Saved Routes:** Record your route, rename your route, or select a different route and display in on your map.

## Display Settings

With 5 different sonar displays, GPS, and Gauge options, it can be hard to decide on which one[s] to use. If you have used traditional

mechanical flashers in the past, you may like the familiarity of the MX-7GPS flasher display, but the other configurations are so easy to use you should really give them a try.

Be sure to experiment with different color palettes and backgrounds, too. All the panels can be displayed at once, but this will cause SONAR/MAP SPLIT to be over-riden. To keep the SONAR/MAP SPLIT screen and all the SONAR options, you will have to remove the FLASHER OPTION.



**Flasher:** This Sonar window will read much like a traditional flasher-style display. Signals are displayed as various colored lines on the dial, and the different colors represent different signal strengths.

**Vertical:** Sometimes referred to as a “Showdown” display, this one is very easy to interpret; top is the top, bottom is the bottom. Anything in between the top and bottom is weeds, fish, or your lure.

**Vertical Zoom:** Same as Vertical but allows for a magnified view of a selected portion of the water column. The ZOOM window can be adjusted by entering SONAR SETTINGS to change your preferences.

**Chart:** This is a scrolling graph display, and it shows not only what is happening below you in real time but will also enable the user to have a “history” of what has happened. All of the MarCum sonars with this feature stand apart from other graphs in that they display with ultra-fast “True-Time” sonar response – less than .02 seconds passes between the echo reaching the transducer and when the signal appears on the LCD screen. When used from a stationary position, such as ice fishing, the bottom will display as a thick, solid band, but other signals, like fish or your jig, will display as lines of varying thickness. Always remember that the thicker the band, the stronger the signal. A large fish is likely to display as a fairly thick band, while a small ice jig will show as a very fine line. When used from a moving boat in open water, the user will see signals displayed in classic “graph” fashion; the bottom will be a solid band, and fish or other objects display as “arches”.

**Chart Zoom:** This functions the same as the Graph display but allows for a magnified view of a selected portion of the water column. The ZOOM window can be adjusted by entering SONAR SETTINGS to change your preferences.

**GPS Map:** This function turns the GPS Map display on or off.

**Gauges:** A feature unique to the MarCum MX-7GPS is the ability to be able to constantly see your most critical settings. At a glance, you will be able to see what your sensitivity level is, what level of IR you are operating at, how high your Target Adjust is, your range, and battery status displayed in volts. The gauges can be turned on or off by highlighting GAUGES and use the PLUS/MINUS buttons. Where the gauges display will depend on which screen configuration you have selected.

**Temperature:** Your water temperature display may be turned on or off here. This feature will ONLY work if you are using your system with the optional “Universal Open Water Transducer”, designed for open water use.

**Sonar / Map Split:** When activated, this feature will split the screen in half between Sonar and Mapping. If deactivated and the GPS MAP is active, it will split the screen evenly with all the other DISPLAY options enabled.

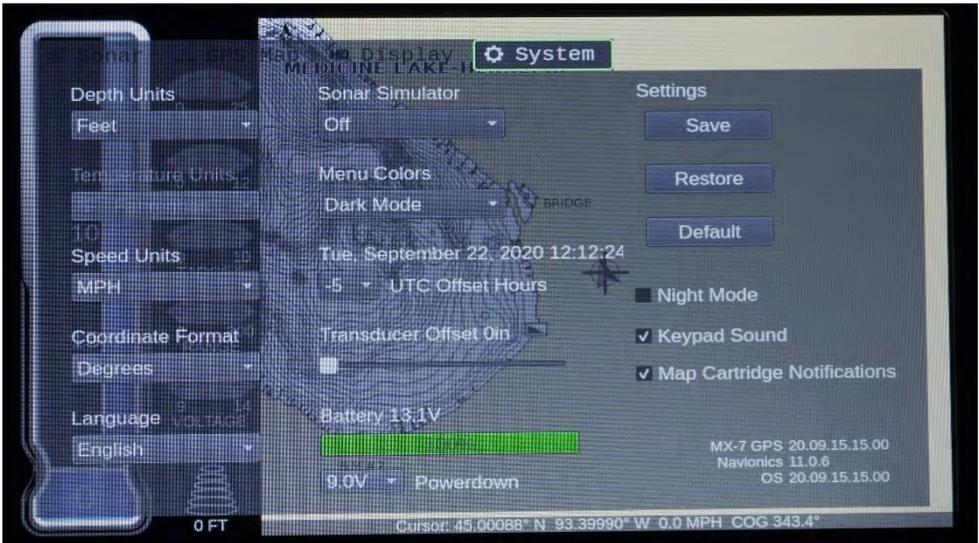
**Background Color:** There are four different backgrounds to choose from; Blue, Grey, Night, and White. The background you choose to use can have a dramatic effect on how easy the sonar signals are to see. A lot of us here prefer the Night background but be sure to experiment to see what works best for you.

**Echo Colors:** The six-color palette is the default, but there are other options to experiment with. If you experience excessive clutter, switching to a three-color palette may clear it up. If you any difficulty distinguishing the color options, try switching to Gray Scale.

**Backlight:** You can adjust the overall brightness level of the display here. The max brightness is 20. When using outside during bright conditions, you will want to have it set fairly high, at 10 or more. In low light or when using inside an ice shack, a setting of 10 or less is desirable.

**Tip:** The lower your backlight, the less power you are using and the longer your system will run.

## System Settings



**Depth Units:** Select between Feet and Meters here. Feet is selected as the default.

**Temperature Units:** Select between Fahrenheit and Celsius here. Fahrenheit is selected as the default. (Only available with Universal Open Water Transducer)

**Speed Units:** Change your units of speed while moving between Knots, km/h or mph.

**Language:** Select between English and French here. English is selected as the default.

**Sonar Simulator:** The MX-7GPS has two simulator modes that will portray a variety of different depths and signal returns. Activating this feature enables the user to experiment with the various settings without actually being on the water. This simulator can represent an

Open Water or Ice Fishing experience.

**Menu Colors:** There are two different backgrounds to choose from; Dark Mode and Light. This will only change the color of the Menu system and not the Sonar/GPS.

**UTC Offset Hours:** This drop-down menu is for adjusting your time on your MX-7GPS, it will come preset to the Central Time Zone.

**Transducer Offset:** Measured in inches, use this feature to offset the distance your transducer is below the water line to get a true depth reading. If the transducer is a half-foot below the water line, setting the Transducer Offset to “6” [1/2 foot] will compensate for the distance below the waterline.

**Battery Meter:** This gauge indicates the voltage currently being produced by your battery. If the voltage drops below 11 volts, you may see a decrease in performance. Recharging your battery after each use will maximize the life of your battery and will ensure that your MX-7GPS will run strong all day.

**Settings: Save** - If you find a screen and mapping configuration that you like, you can easily save them by highlighting this selection and pressing the center ENTER key.

**Settings: Restore** - If you have changed your settings and decide you want to revert to your previously saved set-up, highlight this section and press the center ENTER key.

**Settings: Default** - This is where you can restore factory settings. The factory settings are the most popular configuration, and if at any time of changing your selections you want to revert back to this screen, you may easily do so here.

**Night Mode:** This feature will put both the SONAR/GPS and the MENU screens into NIGHT MODE.

**Keypad Sound:** This feature will activate a “beep” sound anytime you press a button on the control panel.

**Map Cartridge Notifications:** When this is selected, and you have your Navionics chip inserted it will notify you when your chips subscription expires.

**Power down:** This menu feature allows you to select at what voltage your system will shut down at, to maximize or minimize your runtime based on battery voltage selection.

## **INTERPRETING SIGNALS**

### **DIGITAL DEPTH**

The digital depth display on the MarCum MX-7GPS provides a quick and easy way to determine depth. Digital Depth is always displayed in the center of the circular display, and on the bottom of the vertical displays. It will also show in the upper left corner of the chart in some configurations. This display can be used as a quick reference when checking depths through the ice or in a boat.

### **READING BOTTOM**

When interpreting your bottom signal, always read the leading edge (shallowest side) of the signal return. If you have a strong signal return (wide band) and it starts at 13 feet and ends at 16 feet, the correct depth is 13 feet or the shallowest leading edge of the return signal. Anything beyond the shallowest leading edge indicates the strength of the return signal.

The MarCum MX-7GPS can also be used to determine bottom composition. The thicker and bolder your bottom shows, the harder the bottom is. In some cases, hard bottom can be indicated by a “double” or second echo that will show on your display at approximately twice the water depth. Soft bottom (silt, mud, muck) will only register one bottom reading.

Using your Sonar in conjunction with an underwater viewing system is a great way to learn how to interpret your sonar signals.

## **READING FISH**

Fish will generally appear as separate targets from the bottom. Depending on the size of the fish and the location within the transmit beam they can show as any of the colors in the palette you are using. RED indicates the strongest signal on all the color palettes, and this generally indicates a fish directly below the transducer. Smaller fish or fish on the outside of the cone may appear orange, yellow, or even green or blue. Fish moving through the transmit beam may change color as the return signal strengthens or weakens reflecting their location.

Some fish, like walleyes, are notorious for cruising right on the bottom. The MarCum MX-7GPS has target separation fine enough that it will generally show bottom hugging fish as a separate signal. However, fish that are right on the bottom can appear as part of the bottom. The best indication of a fish sitting right on the bottom is that the leading edge of the bottom return signal is a thin band of a color other than red, possibly dithering or flickering. It is important that the sensitivity be kept to a minimum when displaying a strong bottom return. Having your sensitivity too high will flood out the ability to differentiate targets and clutter the display.

Utilizing the ZOOM feature can give you a magnified look at the bottom when this is happening, and help you better learn what is going on below you.

Schooling fish, like panfish, will sometimes group in large numbers suspended off the bottom. A big school of fish concentrated in one portion of the water column can show on your sonar as one large "blob", and it can be difficult to pick out individual targets. Zooming in on the zone with the most fish will give you better definition and switching to the 8-degree cone will eliminate signals from fish on the periphery of your area, improving your definition even more.

## **READING LURES AND JIGS**

The MarCum MX-7gps will pick up and display the smallest of lures and jigs, although some jigging spoons tend to “soar” off to the side. When your jig has reached the desired depth, you may elect to fine tune your signal by changing the Sensitivity level or Target Adjust level. It is not possible to make any recommendations on these settings due to the wildly differing situations that our systems are used in. Just make sure that your jig provides a steady signal that is easy to see, and don't overdo it with the sensitivity or the screen may become cluttered. When tuning the unit to display your lure, lower it to the desired depth and turn up the SENS until you see the lure or bait on the display.

It is important that the SENS be set so it displays the lure or bait as you raise or lower it. Once you have the SENS set where you want it, you can fine- tune your signals by using the TARGET ADJUST button.

**NOTE:** When tuning the unit to display lures or bait, make sure that the objects are in the center of the hole and therefore in the center of the transmit beam. If there is current (some lakes and all rivers have under water current or movement) and the lure doesn't weigh much, it may move to the outer edge of the signal or out of the transmit beam altogether.

The MarCum MX-7GPS has sensitivity that will enable it to display the smallest ice jigs, as well as sinkers and swivels. The target separation of the MX-7GPS is down to 1/2". This means that two objects that are more than 1/2" apart can show as two separate signals on your display. If you have a strike and fail to hook the fish, you can even determine if you still have bait on your jig, or if you have to reel up and re-bait based upon how the signal appears.

**Dead Zone** – All sonar units will have a dead zone in certain circumstances. This occurs on sharp drop-offs where the transmit beam (cone) hits the shallower edge of the drop-off and returns before the deeper edge returns. This in effect creates an unobservable area between the shallower and deeper water within the transmit beam. The 8-degree transducer option on the MX-7GPS will greatly reduce this effect.

## **HOW TO DECIDE WHICH CONFIGURATION TO USE**

With 5 different sonar windows, along with a plethora of other settings, it can be hard to decide on which one to display. If you have used traditional mechanical flashers in the past, you may like the familiarity of the MX-7GPS's flasher display. The flasher displayed with one or more of the vertical displays is likely to be how most anglers use the MX-7GPS, at least for starters. We get endless feedback on how well the scrolling graph display works for ice fishing, so be sure to give it a try. Be sure to experiment with different color palettes and backgrounds, too.

### **CIRCULAR [FLASHER] DISPLAY**

This sonar window will read much like a traditional flasher-style display. You can set the range manually or allow the Auto Range or Dynamic Depth interface to automatically lock into a RANGE that will optimize the use of the circular display. Signals are displayed as various colored lines on the dial with the depth and depth readout on the inside of the dial. The different colors represent different signal strengths depending on the color palette you have selected.

### **VERTICAL DISPLAYS**

These sonar windows are very easy to interpret— top is the top; bottom is the bottom. Anything in between the top and bottom is weeds, fish, or your lure. There are two different Vertical displays— one shows the entire water column, one shows your ZOOM window. On each one, signals are displayed as various colored lines on the column, and the different colors represent different signal strengths.

## **SCROLLING (CHART) DISPLAYS**

These windows will show not only what is happening below you in real time but will also enable the user to have a “history” of what has happened. While most used for open water, many anglers are discovering the benefits of using a chart on the ice. The MarCum MX-7GPS stands apart from other chart in that it displays with ultra-fast “True-Time” sonar response – less than .02 seconds between the echo reaching the transducer and when the signal appears on the LCD screen. Other charts experience a much longer response time. When used from a boat in open water, the user will see signals displayed in classic “chart” fashion; the bottom will be a solid band, and fish or other objects display as “arches” when you are moving.

When used from a stationary position, such as ice fishing, the bottom will display as a solid band, but other signals, like fish or your jig, will display as lines of varying thickness. Always remember that the thicker the band, the stronger the signal. A large fish is likely to display as a fairly thick band, while a small ice jig will show as a very fine line. The best way to learn how to interpret signals on the chart is to have it displayed along with the circular or vertical display. After using the chart along with one of the more familiar displays, you may find that you like fishing with the chart best of all. It is fascinating to watch the “trail” of your jigging motion, and fine tuning your presentation to exactly what the fish want has never been easier.

The MarCum MX-7GPS has the option of displaying a full water column chart, as well as an adjustable zoom chart. The interpretation of these signals improves with experience and use in the field.

## **CONE ANGLE INFO**

A feature unique to the MX-7GPS is the “Sonar Footprint” that displays the actual area being covered by your transducer while you are fishing. This data is displayed below the cone angle icon and represents the diameter of the base of the transducer cone.

This will keep you constantly updated how much area is being covered by your MX-7GPS and will help you decide which transducer angle best suits the conditions. When the MX-7GPS is first turned on, it will be transmitting utilizing the 20-degree setting.

When switching between cone angles and depths, the Sonar Footprint will change accordingly.

Conditions where the narrow beam will benefit you are:

- Fishing in deep water (over 40')
- Fishing along very steep drop-offs for bottom-hugging walleyes
- Fishing in big schools of fish, like suspended crappies
- Fishing in and around heavy weeds or standing timber
- When fishing in a crowd, the narrow beam will help reduce interference.

## **ZOOM INFO**

One of the best features to have in an ice fishing Sonar is a “Zoom”, and there is none better than that of the MarCum MX-7GPS. A Zoom feature enables you to have a magnified view of a selected portion of the water column. Note that when the ZOOM window is open, you can still view the entire water column on one of the other windows. Imagine that you are fishing for walleyes in 30 feet of water, and you are zoomed in on the bottom 5 feet. If a school of crappies comes through at 20 feet, you will be able to easily see them on one of the other windows, and quickly raise your bait to their level. The position of the ZOOM window is adjustable in one-foot increments and can be moved to focus on the bottom (for detecting bottom-hugging fish), or at any level above bottom for suspended fish.

The MarCum MX-7GPS also offers Auto Bottom Lock Zoom that

automatically zooms and locks onto the bottom, even when you change locations. This is especially useful for if you are hole-hopping for bottom hugging fish like walleyes and perch. To access the Auto Bottom Lock Zoom, under the SONAR sub menu, select the “Auto” box menu under the Zoom Depth. It is highly recommended that you learn how the Zoom works while in simulator mode.

Operating the Zoom is quite simple, and only requires the pressing of a few buttons to select the size and position of your Zoom window.

Begin from the factory default screen open (Flasher in center, Vertical Display on left, GPS Map on right). The area that is featured on the Zoom Display is indicated by the “Zoom Indicator Bar”, a light blue bar on the right side of the Vertical Display. When you highlight “Zoom Depth” under the Sonar Settings sub menu, this is where you set the uppermost limit of the Zoom Display by pressing the PLUS/MINUS buttons. When you have the desired depth highlighted, pressing “X” to close the menu or selecting other options will establish that depth as the top of your Zoom display.

You will notice that the Zoom Indicator Bar will move up or down as you make these adjustments. To set the size of what is shown in the Zoom Display, press MENU, and have Sonar setting highlighted; then highlight “Zoom Window”. You can now select which size zoom window you want using the PLUS/MINUS buttons to increase or decrease the size of the window. Going through this process several times before you go fishing is a great idea, as that will allow you to easily and quickly adjust right away once on the water.

For example, if you were fishing in 30 feet of water, and wanted to zoom in on the bottom 10 feet, press the Menu button and within the Sonar Settings submenu highlight Zoom Depth. Use the PLUS/MINUS to set the zoom depth for 20 feet (10 feet off bottom). Now using the arrow pad highlight the Zoom Window.

Using the PLUS/MINUS adjust to 10 feet. The 20 to 30-foot portion

of the water column is now displayed on the Zoom display. The entire water column is viewable on the Flasher, Vertical, Chart; while your zoomed in section is viewable in the Vertical Zoom or Chart Zoom

The MarCum MX-7GPS also features “Chart Zoom” which enables you to use a scrolling graph in Zoom mode. Activate the Chart Zoom in the Display Settings submenu. You set the zoom just as you would when using the other sonar options. When you press the ZOOM button to make a change, the Vertical Zoom window will automatically open. After adjustments have been made, you may turn the Vertical Zoom window off again in the Display Options of the menu.

## **SIMULATOR**

The MarCum MX-7GPS has two simulator modes that will portray a variety of different depths and signal returns (Ice Fishing and Open Water). Activating this feature enables the user to experiment with the various settings without being on the water. This simulator represents an open water or ice fishing experience, so the depths and signals will change as it goes through the simulation.

When using your MX-7GPS in open water [in a moving boat] it is typical to mark fish as a “hook” or “arch” shape. When stationary, as in ice fishing, your signals of both your jig and the fish will show as lines of varying thicknesses.

You may also experiment with settings by getting your MX-7GPS to get a bottom reading off any tile or cement floor in your house or garage. Note: This is a live sonar test so the simulator must be deactivated for this test. To work properly, your test site must be a bare tile or cement floor. Position your MX-7GPS with the transducer hanging motionless about 2-3 feet above the tile or cement floor and then turn the sensitivity up to the maximum (25) setting. If the transducer is 2-3 feet above the floor, you should get a bottom reading at about 8-10 feet (the system is calibrated to be accurate in water, not air as the signals travel differently out of water).

If you now raise and lower the transducer the bottom signal should

move in a corresponding manner.

You may find it is easier to learn the zoom and other functions while experimenting in this way with the “manual simulator”.

## **OPEN WATER APPLICATION**

The MarCum MX-7GPS is just at home on a boat as it is in your ice shack. The Universal Open Water Transducer (**Sold Separately**) is designed to be mounted right to your boat’s transom, or to the lower unit of a trolling motor. This design makes it easy for you to use your MX-7GPS for high speed scouting work, or for breaking down structure one piece at a time. You will be able to identify the presence of fish or weeds and be able to determine the bottom makeup. The Universal Open Water Transducer can transmit an 8 or 20-degree cone, and it also has a temperature sensor.

From an anchored or otherwise stationary position, you can use your MX-7GPS from a boat much like you would on the ice—you can see the fish and how they react to your jig on the screen. You may find that being double anchored is necessary to maintain a stationary position.

## **FIRMWARE UPDATES**

Your MarCum MX-7GPS can have the firm updated. We may come out with new firmware versions to add features or to improve performance. To see which version you have, press the MENU button, then select SYSTEM SETTINGS. The version will be displayed at the bottom right corner. The version will be listed with MX-7GPS followed by the number version.

To see if there are new versions available, check our website\_ [www.MarCumTech.com/support](http://www.MarCumTech.com/support). Compare the firmware version on your system with what we have available Online, and ensure your system has the newest numbered version.

For more information, be sure to go to our website, click on the support tab, then firmware updates for step-by-step instructions.

## **TWO YEAR WARRANTY**

MarCum warranties this product to be free from defects in materials and workmanship for two years from the date of purchase. This warranty applies to customers who properly complete the Online product registration form found on the MarCum Technologies Website: [www.MarCumTech.com/support](http://www.MarCumTech.com/support) .

MarCum Technologies will repair or replace any components at their discretion that fail in normal use. Failures due to abuse, misuse, unauthorized alteration, modification, or repair are not covered. The warranty is valid only for the original owner who purchases the system from an authorized dealer. An original sales receipt dated within the warranty period is required for all warranty claims.

## **HOW TO OBTAIN SERVICE**

If your system is malfunctioning, check the support section of our website. You may find that the solution to your problem is something you can resolve yourself. If you need to send it in, there is no need to contact our office. Getting repairs made is as simple as going to our website, MarCumTech.com clicking the support tab and then filling out the MarCum Warranty Claim.

If your system is under warranty, be sure to attach a picture/scan of your proof of purchase with date included. If your system is out of warranty, we have a flat rate fee that will cover the cost of repairs, including parts and labor. You will find the non-warranty claim on our support site.

Once you have completed and submitted a claim form, package the system as described on the website and ship it to us.

Some people are more comfortable calling for shipping instructions. During peak ice season, we sometimes receive a high volume of calls, making it impossible to get to all customers who phone in. For this reason, strongly consider using the on-line forms at

[www.MarCumTech.com/support](http://www.MarCumTech.com/support) or using the "Live Chat" option.

**OUR ADDRESS:  
MARCUM TECHNOLOGIES  
ATTN: SERVICE DEPT.  
3943 QUEBEC AVE NORTH  
MINNEAPOLIS, MN 55427**

**Please send your email inquiries to [service@MarCumTech.com](mailto:service@MarCumTech.com)**

If you are unable to use email or Internet,  
you may call us at 763-512-3987.

Our office hours are Monday – Friday, 8 – 4 Central Time.

International callers may use 888-778-1208.

The customer is responsible for shipping costs associated with returning the system to MarCum Technologies. MarCum will pay for shipping the repaired system back to the customer while it is still under warranty. All out of warranty services will be charged a fee for service and shipping which must be paid in advance. The system should be securely packed and shipped “prepaid freight” and insured to MarCum Technologies. It is the customer’s full responsibility to track their products sent out in the mail or other forms of delivery service. MarCum Technologies will not be liable for packages lost in route to us. Unless specified otherwise, do not include batteries or other accessories when returning the product for repair. MarCum Technologies will not be responsible for lost or damaged accessories. Turnaround time can vary; on average it is about 1 week.