Raymarine®

A FLIR COMPANY

**Dual Maxi Display
User Guide**

EMC Conformance

All Raymarine equipment is designed to the best industry standards for use in the recreational marine environment. The design and manufacture of Raymarine equipment conforms to the appropriate Electromagnetic Compatibility (EMC) standards. Correct installation is required to ensure that performance is not compromised.

Important

Suitability

Due to the wireless communication systems used in Micronet instruments they are only recommended for use on boats up to 18 metres (60 ft.) *Before installing to a boat of aluminium, steel or Carbon Fibre construction, please consult www.raymarine.com.*

Aid to Navigation

Like any other electronic instruments your Micronet system is designed to serve only as an aid to navigation and it remains the skippers responsibility to maintain a permanent watch and be aware of developing situations.

Dismantling the product

Any attempt to take a Micronet product apart will invalidate the warranty. The battery may only be replaced by a person trained and approved for this purpose.

Safety and Disposal

Your Maxi Display contains Manganese Lithium Dioxide batteries which should be disposed of correctly. Do not dispose of any instrument in domestic waste. Refer to regulations in force in your country.

If in doubt return the instrument to Raymarine for correct disposal.

1 Key Features

Simple to Install

Solar Powered: your Dual Maxi Display is powered for life by the Sun. The innovative technology uses so little current and the power supply is so efficient, that the display is independent from your boat's batteries.

Wireless: your Tactick displays communicate by wireless, they can be sited anywhere on your boat without disruption or cables.

Dedicated to Performance

Optimise your start: the Dual Maxi Display's powerful functions for Distance and Speed-Trim to the line, Line Bias and Race Timer help you get the best possible start.

Enhance your performance with the built-in functions for Wind Shift, Velocity Made Good and Tack Course

Simplify your tidal navigation with the Dual Maxi Display's Set, Drift, Turn and Course to Steer functions.

Easy to Manage

Automatic data selection: the innovative Auto Leg function allows the display to automatically show the information you need for each leg of the course.

Page Hiding means you can avoid data duplication on different displays, minimising the time to select the pages you really need.

Wireless Remote control: your Dual Maxi display can be controlled and configured from anywhere in the boat using a Raymarine Remote display.

Excellent visibility

The large, high contrast LCD gives the Dual Maxi Display a wide angle of view and ensures excellent visibility from anywhere on your boat.

Two panes with 35mm digits maximise the information available.

The black background minimises disturbance to your night vision, and the red/amber option allows you to choose the backlight colour of your display at night.

2 System Overview

⚠️ *Ensure that the "Auto Network" procedure described on the yellow instruction sheet and full Setup and Calibration has been performed correctly before attempting to use your Micronet system.*

2.1 Display Features

Upper Pane

Lower Pane

Battery Status

Battery Charge

Solar Panel

Control Button
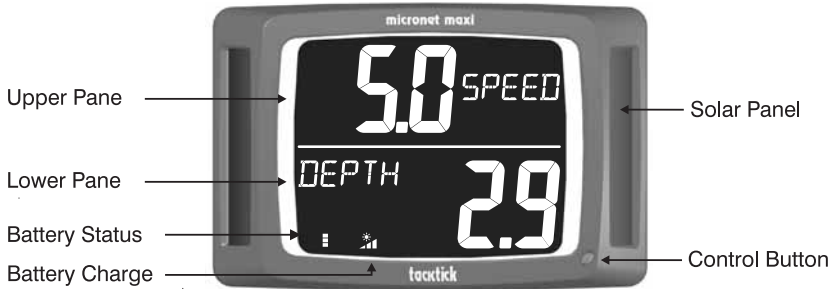
2.2 Remote Control

Your Dual Maxi Display is designed to be controlled and configured using a Raymarine Remote Display. See the user guide supplied with the Remote Display for details of using the Remote Display in remote control mode. All references in this user guide to the ⬇, ⬤, ◀ or ▶ buttons refer to the appropriate button on the Remote Display.

Upper and Lower Panes

The upper and lower panes of the Dual Maxi Display function independently; each pane acts as a separate display and can be configured separately.

When a Dual Maxi Display is selected using the `remote` button of the Remote Display, the upper pane of the Dual Maxi will flash, indicating that it is selected for remote control. A further press of the `remote` button will cause the lower pane of the Dual Maxi to flash, indicating that this pane is now selected for remote control.

ℹ️ *If a Remote Display is not available, the single control button provides a limited control capability, see page 15 for details.*

ℹ️ *For configuration of the Dual Maxi Display a Remote Display is required.*

See page 16 for details of configuring your Dual Maxi Display.

2.3 Switching the System On and Off

To switch your Micronet system on or off select any display and press the ▼ button for 2 seconds. See page 15 for use of the Dual Maxi Display control button.

## 2.4 Chapter and Page operation

Data is shown on the panes of the Dual Maxi Display in Chapters, each containing several pages of related data. The diagram on page 12 shows the full set of chapters and data pages available.

For a detailed description of individual data items supported on the Micronet network, see the Micronet Data user guide on your product CD or on the Raymarine web site.

Selecting Chapters and Pages:

Use ▼ to scroll through the chapters and ◀ and ▶ to move between the pages within a chapter.

Pressing ▼ at any time will move on to the next Chapter and on scrolling through the Chapters the page last selected in that Chapter will be displayed. Both Chapter and Page selection will scroll back to the first page once a cycle has been completed.

Pages for which no data is available are displayed as dashes (- - -)

2.5 Power Management and Battery Life

What makes your Dual Maxi display possible is Raymarine's revolutionary approach to power management. By reducing the amount of power being used by the electronics and dual Maximizing the potential of the sun to provide power, the Dual Maxi display becomes a virtually perpetual device.

Power status is indicated by two icons on the display:

Battery Level 📱 and ☀ Charge Rate

Used together these icons will show the condition of the power supply.

(i) If the internal battery is fully charged then it does not matter how much the display is subjected to bright sunlight no further charging is required and the Charge Rate Indicator will remain low.

If the displays are to be stored for a long period of time before next use (Over Winter) ensure that the batteries are fully charged before storage.

⚠ Artificial light WILL NOT recharge the battery. Placing your Dual Maxi Display close to an artificial light will seriously damage the display. Only recharge in natural daylight.

Bright Sunny Day	☀	Battery is charged and being topped up by the sun. (see Note)
	☀	Battery is low and being charged by the sun.
Overcast Day	☀	Battery is charged and requires no further charging.
	☀	Battery is low but maintaining it's level.
Night	☀	Battery is charged but is not charging.
	☀	Battery is low with no charging.
Low Power	☀	It is recommended that the instrument be left in daylight for some time for the battery to recover. A fully discharged battery will recharge in approximately 12 hours of direct bright sunlight.

2.6 Backlighting

At any stage of the display's operation press and hold ⏩ for two seconds to access the lighting control.

LIGHT

Pressing ◀ and ▶ will scroll through setting OFF, 1, 2 and 3 whilst changing the backlighting.

If using the displays at night, power usage can be reduced dramatically by switching the Backlighting to level 1 or 2. To save power, it is recommended that backlighting Level 3 is used only in dusk conditions.

The Dual Maxi Display can be configured to use either red or amber backlighting (see page 21). Raymarine recommend that red backlighting is used whenever possible as this uses less battery power.

Backlighting is automatically switched off in daylight as part of the display's power saving feature and will not operate in daylight.

2.7 Sleep Mode

If there is no boat speed or change in heading registered on the system for a period of 12 hours your Dual Maxi display will switch off to conserve power. A "POWER SAVE" alarm will sound before the system switches off. Pressing any button within 10 seconds of the alarm sounding will allow the system to remain switched on.

3   Performance Functions

3.1   Automatic Pages

You probably want different pages shown on your Dual Maxi Display for each leg of the course.

The Dual Maxi display makes this easy by providing a special page: the AUTO LEG page. Using this feature, you can programme your Dual Maxi to show exactly the information you require for each leg of the course without the need to manually change pages at each mark rounding.

For example, consider a boat with two Dual Maxi Displays on a mast bracket. It may be decided that during the start the data required is **Boat Speed**, **Depart, Line Bias and Race Timer**; for the windward leg **Boat Speed, Heading, VMG to Windward and Wind Shift**; and downwind **Boat Speed, Heading, VMG to Waypoint and True Wind Direction**.
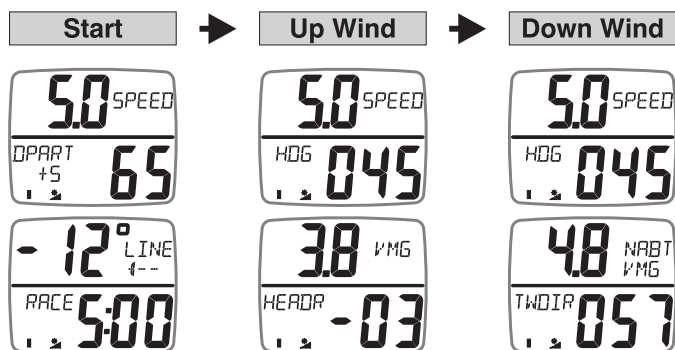
Programming these pages into the Autoleg Page prior to the race would automatically show these pages for the appropriate leg of the course; leaving the tactician free to concentrate on the race, not on configuring his instruments.

The legs and the pages displayed can be configured in setup to meet your specific needs, see page 18.

Similarly, using the Page Hiding function to eliminate duplicate pages across the three displays reduces the time and key presses required if a manual reconfiguration of the data displayed becomes necessary.

(i) It is a good idea to programme the remote control display list of your Remote Display to show your displays in the same order as their physical location on the boat. See the Remote Display user guide.

3.2   Optimising your start

The Dual Maxi display has three functions to help you get a great start:

The **Depart** page shows your distance from the start line and how much faster (or slower) you must sail to hit the line at the start signal.

The **Race Timer** gives you a visual and audible count down.

The **Line Bias** page helps you choose the best position on the line.

Using the Depart page

Approaching the start, it is vital to know your distance from the line and whether you will arrive before or after the signal.

The large digits show your distance from the nearest point on the line in distance units or boat-lengths (see page 20).

A negative distance shows that the boat is to windward of the start line, not that the boat is on the course side of the line; i.e. for a downwind start, a negative distance shows you are approaching the line correctly.

The small digits show the change in speed required for you to arrive at the line at the signal; a negative value means that you must decrease your speed to avoid arriving early.

These calculations rely on GPS data, so they are subject to error, particularly as the distance from the line becomes small. Do not rely on this information to determine if you are over the line at the start. Rather, you should use the data to help optimise your approach to the line.

Before using the Depart function, you must configure the Boat Length and GPS Bow parameters in setup; see page 20.

Initialising the Depart page

With the depart page displayed, approach one end of the start line as if starting; press ⬭ when the bow touches the line. A popup page shows that the first line position has been captured. Repeat at the other end of the line. The popup shows the second line position has been captured.
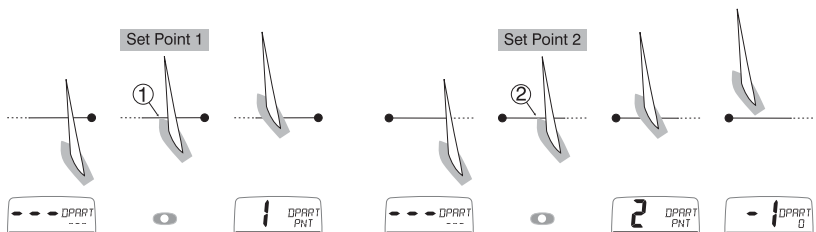
The line for Depart calculations is between the positions you set. Set your points as close to the ends of the actual start line as possible.

Modifying the start line points

If it is necessary to modify one of the points, press ⬤ while at the correct location; the popup will show that position 1 has been captured. Pressing ◀ or ▶ while the popup is visible will allow you to set the captured location to position 2. or to discard it (-).

The position is captured at the moment ⬤ is pressed.

Starting and Start Line Bias

When the starting line is laid at exactly right angles to the wind, the distance sailed to the windward mark is the same wherever the boat starts on the start line. In real racing there is often a favoured end to the line. If you start at the favoured end, you are upwind and therefore ahead of a boat starting at the other end of the line. The larger the Line Bias angle, the more you can gain from starting at the favoured end of the line. The diagram shows how this works in practice.
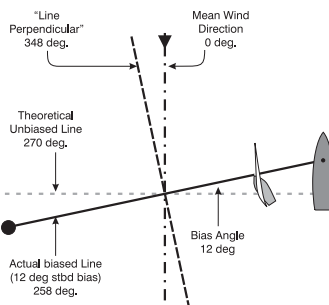
Your Dual Maxi Display can calculate and display the Line Bias angle and the favoured end of the line.

To initialise the line bias display

Go to the **Line Bias** page, Sail directly along the start line, then press ⬤. The Line Bias angle and the favoured end of the start line are displayed.

The line bias display is continually updated taking account of wind shifts that may occur during the pre-start period.

Using the Start Timer

The most convenient way to operate the race timer is to use the Timer Page of the Remote Display. Once started the countdown is available on all displays.

See the Remote Display user guide for details of operating the race timer.

3.3   During the Race

Sailing upwind.

VMG to Windward

3.8 *VMG*

To get to the windward mark as quickly as possible it is necessary to balance pointing angle against boat speed to maximise the speed directly towards the wind (this speed is called the Velocity Made Good to Windward).

The Dual Maxi Display automatically calculates your VMG to windward.

Wind Shift

-03° *HEADR*

Like most things in sailing, the wind does not remain constant in either strength or direction. Every shift in the wind requires the boat to alter its heading in order to maintain a close hauled course.

A shift that allows the boat to change its heading closer to the Mean Wind Direction is called a "lift"; a shift that forces the boat to change course away from the Mean Wind Direction is known as a "header".

In an **oscillating wind**, a boat that regularly tacks when headed will spend more of its time sailing a lifted course and will sail a shorter distance to the windward mark than a boat that regularly sails a headed course. This gives the boat sailing in the lifts a considerable advantage.

In the diagram, the boat on the right sails a shorter course by tacking when headed and thereby sailing mostly in lifts.

The system automatically calculates the mean wind direction by averaging the true wind direction over a period of time.

Mean wind direction

Wind backs

Wind backs

Wind veers

Wind veers

Wind backs

Wind backs

without ⌂tacktick®   with ⌂tacktick®

Sail your boat for dual Maximum speed and use the Dual Maxi Display to identify the headers and lifts to help you decide when to tack or gybe.

Permanent wind shifts can be recognised as a constant header on one tack, and a constant lift on the other tack. In this situation, you can reset the mean wind direction as follows:
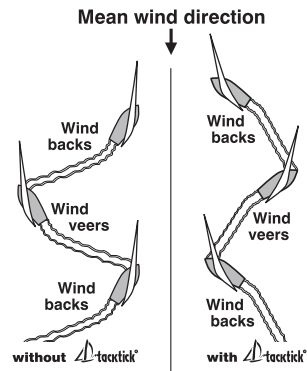
1. Go to the **Wind Shift** page
2. Press ⬭, the mean wind direction is reset to the current True Wind Direction.
3. The new value is displayed; if required, it may be adjusted using ⬤ and ⬤.

ⓘ *Resetting the mean wind direction manually disables averaging until the system is switched off.*

Sailing Downwind

Sailing downwind, it is rarely fastest to aim directly for the mark. Usually it is better to sail at a higher angle to increase boat speed and gybe as necessary to reach the mark. The increase in speed can more than compensate for the additional distance sailed. In technical terms, you aim to dual Maximise your VMG (Velocity Made Good) towards the mark.

Use **VMG-WP** (VMG to Waypoint) together with the True Wind Angle to optimise your VMG to the downwind mark

Use the **SHIFT** page to help you time your gybes. Aim to gybe on lifts, to keep sailing on the headed tack.

Sailing in Tidal Waters

When you are sailing in tidal conditions, your boat's actual Course Over the Ground (COG) and Speed Over the Ground (SOG) may differ considerably from the heading of the boat and the speed through the water shown by the speed sensor.

The Dual Maxi Display provides the following functions to make your tidal navigation easier.

Turn

When steering towards a waypoint in tidal conditions, it is often difficult to assess the course to steer to keep on the direct track to the mark.

Your Dual Maxi Display automatically indicates when the course you are steering is taking you off the direct track to your waypoint. The direction and required angle of turn is displayed.

Course

Used in similar circumstances to the Turn page, the Course page shows the course to steer to track directly to the waypoint.

Drift and Set

Because the boat is not always moving directly in the direction of its compass heading you need to know the direction (SET) and the speed (DRIFT) by which the boat is being pushed off course. Tactically this is important when assessing when to tack or gybe to round a mark or clear an obstruction or headland.

Your Dual Maxi Display automatically calculates this information using information from your GPS, boat speed and compass. The calculated set angle is rounded to the nearest ten degrees.

Set and Drift as calculated includes the effect of both tide and leeway. Therefore the value will be different on opposite tacks, depending on whether the boat is sailing into or against the tide. This will be especially noticeable when the tidal effect is small.

In conditions of little tide, this calculation is very sensitive to inaccuracies in the calibration of your speed and compass transducers. It is not recommended that you rely on the accuracy of this calculation in situations where the tide speed is less than one Knot

A flashing indicator will alert you if the calculated values are uncertain.

See the Calibration guide for information on how to maximise the accuracy of the calibration of your speed and heading transducers.
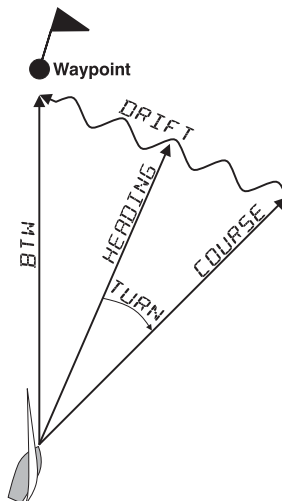
4 Operation

4.1 Data Chapters and Pages

CHAPTER	PAGES

Speed

Boat Speed → VMG to Windward → VMG to Waypoint → Log Distance → Trip Distance → Maximum Speed

Pages hidden by default

Average Speed

Depth

Depth → Minimum Depth → Maximum Depth

Wind

Apparent Wind Speed → Apparent Wind Angle → True Wind Speed → True Wind Angle → True Wind Direction → Beaufort Wind Force

Maximum True Wind ← Wind Shift

Navigation

Heading → Tack Course → Speed over Ground → Course over Ground → Drift and Set

Waypoint

Bearing to Waypoint → Turn → Course to Waypoint → Distance to Waypoint → Cross Track Error → Time to Go to Waypoint

Environment

Sea Temperature → Time → Date → Power

Race

Timer → Line Bias → Line Distance and Speed → Auto Leg Page

4.2   Audible Signals and Alarms

At stages during its operation your Dual Maxi Display will beep to indicate alarms or moments of importance.

Power-up   The display will beep once as it switches on.

Button Press   The display will beep once each time a button is pressed. A second beep is issued after a 2 second hold down of the ⬤ button.

Timer   The display will beep once at each minute of the countdown.

With 1 minute left to go a beep will sound every 10 seconds.

With 10 seconds to go a beep will sound every second.

Countdown complete will be indicated by a single burst of three beeps.

Alarm   Continuous bursts of three beeps will indicate an alarm.

The alarm activated will be indicated on the display, accompanied by the flashing (BELL) symbol.

Pressing any button will silence the alarm. See fault finding section, page 26.

The Alarms below will be indicated on the Dual Maxi Display, however they must be configured using another Raymarine Micronet display connected to the network. See the appropriate display user guide for details of configuring alarms.

Depth Shallow Alarm

The water depth has fallen below the preset alarm level.

This alarm does not sound as the depth increases above the preset alarm level.

Depth Deep Alarm

The water depth has increased above or fallen below the preset alarm level.

Wind High Alarm

The wind speed has increased beyond the preset alarm level.

Cross Track Error Large Alarm

LARGE
XTE

A large cross track error has been alerted by the GPS.

Waypoint Arrival Alarm

WP   NRBT

A waypoint arrival signal has been received from the GPS. The waypoint name is shown on the top line of the display.

4.3   Page Hiding

When shipped from the factory a number of the less commonly used pages are hidden by default; they do not appear when you scroll through the chapters and pages. You may hide additional pages, or unhide those already hidden to set up your Dual Maxi Display for your individual requirements. The diagram on page 12 shows the pages that are hidden by default.

To hide unwanted pages:

PAGE

HID-
ING   OFF
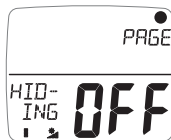
Press and hold ⬤ to enter set up

Press ▼ to reach the OPTIONS chapter

Press ▶ to reach the Page Hiding page

Press ⬤ to activate page hiding for 5 minutes

Press and hold ⬤ to exit setup.

Once page hiding is activated:

Use the (remote) button to select the pane and ▼, ◀ and ▶ to navigate to the page to be hidden

Press ◀ for 2 seconds to hide the page.

A period of 5 minutes is allowed to select pages to hide.

To clear Page Hiding and return to all pages visible:

PAGES

HID-
DEN   11
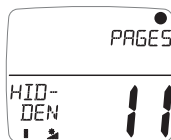
Press and hold ⬤ to enter set up

Press ▼ to reach the OPTIONS chapter

Press ▶ to reach the Pages Hidden page; the display shows the total number of pages hidden

Press ⬤ to return to all pages visible

Press and hold ⬤ to exit setup.

i *The factory reset function in setup will return page hiding to the default setting.*

4.4   Operating the Dual Maxi Display using the control button

The Dual Maxi Display is designed to be operated and configured using a Raymarine Remote Display; however for emergency use, there is a limited control function available via the single control button.

To switch on the system press the button for two seconds.

Once switched on, the display has a cycle of four states, pressing the button for two seconds moves the display to the next state in the cycle.

The display starts up in **Upper Pane Chapter Mode**; quick presses of the button scroll through the available chapters. Each chapter title is briefly shown, then the data page most recently accessed in each chapter is displayed.

Pressing the button for two seconds changes the state to **Upper Pane Page Mode** (the legend PAGE is shown briefly in the upper pane). Quick presses of the button scrolls the upper pane through the available pages in the chapter.

The next two second press of the button changes the state to **Lower Pane Chapter Mode** (the legend CHAP-TER is briefly displayed in the lower pane). Quick presses of the button scroll through the available chapters.

The next two second press of the button changes the state to **Lower Pane Page Mode** (the legend PAGE is shown briefly in the lower pane). Quick presses of the button scrolls the lower pane through the available pages in the chapter.

A further two second press of the button returns to the beginning of the cycle, i.e. **Upper Pane Chapter Mode** (the legend CHAP-TER is briefly displayed in the upper pane).

To switch off the system press the button for four seconds

Lighting any press of the button will set backlighting for the display to level 1 unless it is already set to a higher level. The lighting will be auto dimmed in daylight.

It is not possible to configure the Dual Maxi Display using its control button. This must be carried out using a Raymarine Remote Display.

5 Setup and Calibration

5.1 Setup and Calibration Organisation

Setup is organised into Chapters, each comprising a number of Pages. Setup pages use both panes of the display.

The Dual Maxi Display is designed for remote control; the built in setup mode only provides settings for functions that are local to the Dual Maxi Display. These settings are configured by operating the setup function in remote contol mode using a Raymarine Remote Display. See the Remote Display user guide for details of remote control mode.

The diagram below shows the layout of the available setup chapters and pages on the Dual Maxi Display. For a full description of each setup page refer to section 5.4.

Generic system setup and configuration is carried out directly from the Remote Display. See the Remote Display user guide for details.
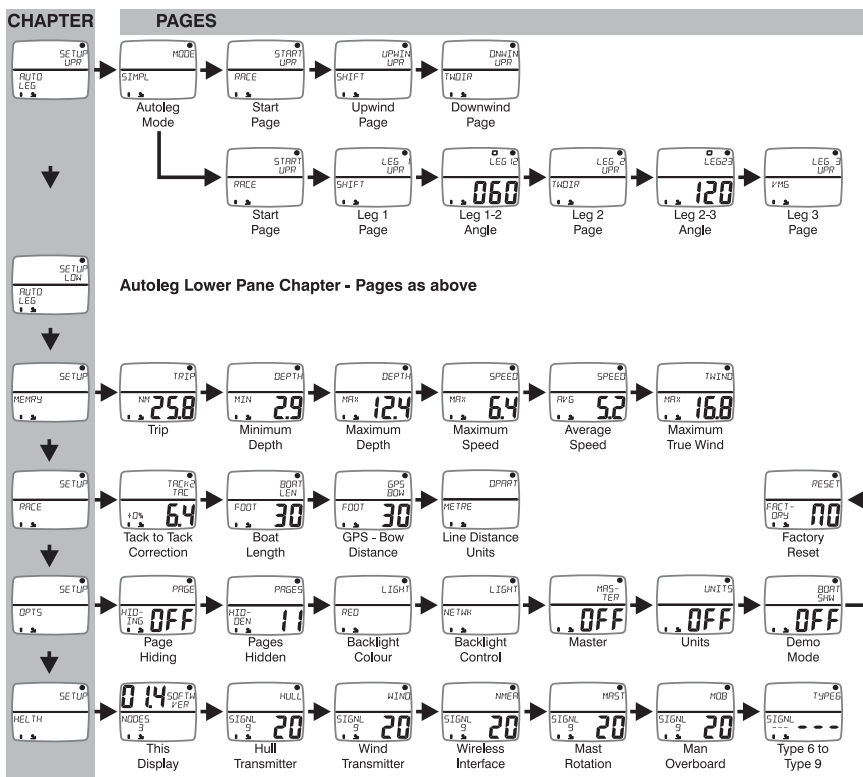
5.2   Setup and Calibration Operation

Setup can be entered from either pane.

To enter Setup

(i) *It is not possible to enter setup mode while the Race Timer page is currently visible. Scroll to a different page in order to enter setup*

Press and hold ⬤, the first chapter title page is displayed.

To change the active chapter

Press ⬇ repeatedly until the desired chapter title page is displayed.

At the end of the chapter cycle, the display returns to the first chapter title page.

If you are currently on a chapter parameter page, you must return to the chapter title page before you can move to a new chapter.

To access the setup pages

Use ➡ to scroll through the pages, ⬅ returns to the previous page.

5.3   Editing Setup Data

Parameter values may be one of three types:

A user editable numeric value (for example, the Autoleg 1-2 parameter).

To edit a numeric parameter value:

Press ⬤. The value data will begin to flash.

Use ⬅ and ➡ to adjust the value.

Press ⬤ again to set the new value.

A list of options (for example, the Autoleg Start parameter).

To select a parameter option from a list:

Press ⬤.The parameter option will begin to flash.

Use ⬅ and ➡ to select the option required.

Press ⬤ again to set the new option.

A toggle between two alternative options (for example the Auto Leg Mode parameter).

To toggle between alternate parameter settings:

Press ⬤. The setting will toggle between the options.

5.4 Setup Page Descriptions

Autoleg Chapter - Upper Pane

Configures the Auto Leg pages for the upper pane

(i) The values set for Autoleg Mode, Leg 1-2 Angle and Leg 2-3 Angle apply to all Maxi and Dual Maxi displays on the network. Changes to these settings made on any display affect all the displays.

Autoleg Mode
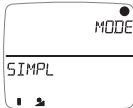
There are two modes available, SIMPL and ADVANCED. Depending on the mode selected, the configuration pages available are as below:

Simple Mode configuration pages
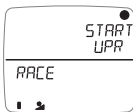
Start

Sets the Autoleg page to be displayed while the Race Timer is counting down to the start. The default is **Race Timer**.
Pages can be selected from any currently unhidden page.

Upwind
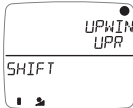
Sets the autoleg page to be displayed while the apparent wind angle is between head to wind and 90 degrees. The default is **Wind Shift**.
Pages can be selected from any currently unhidden page.

Downwind

Sets the autoleg page to be displayed while the apparent wind angle is between 90 and 180 degrees. The default is **True Wind Direction**.
Pages can be selected from any currently unhidden page.

Advanced Mode configuration pages
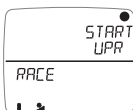
Start

Sets the Autoleg page to be displayed while the Race Timer is counting down to the start. The default is **Race Timer**.
Pages can be selected from any currently unhidden page.
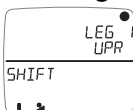
Leg 1

Sets the autoleg page to be displayed while the apparent wind angle is between head to wind and the leg1-2 changeover angle. The default is **Wind Shift**.
Pages can be selected from any currently unhidden page.

Leg 1-2 Angle

The angle at which the auto leg page switches from the Leg1 page to the Leg 2 page. The default is **60 degrees**.

Leg 2

Sets the autoleg page to be displayed while the apparent wind angle is between the leg 1-2 changeover angle and the leg 2-3 changeover angle. The default is **True Wind Direction**.
Pages can be selected from any currently unhidden page.

Leg 2-3 Angle

The angle at which the auto leg page switches from the Leg2 page to the Leg 3 page. The default is **120 degrees**

Leg 3
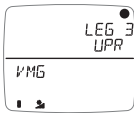
Sets the autoleg page to be displayed while the apparent wind angle is between the leg 2-3 changeover angle and 180 degrees. The default is **VMG to Windward**.
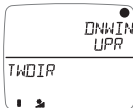Pages can be selected from any currently unhidden page.

Autoleg Chapter - Lower Pane

Configures the Auto Leg pages for the lower pane. The same functions are available as in the Autoleg Chapter - Upper Pane.

Memories Chapter

Note: all memories are cleared when the system is powered on.

Trip
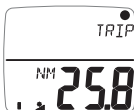
Clears the trip memory, resets to 0.0.

Minimum Depth

Resets the Minimum Depth memory; resets to the current depth.

Maximum Depth

Resets the Dual Maximum Depth memory; resets to the current depth.

Maximum Speed
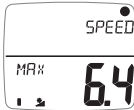
Clears the Maximum Speed memory; resets to the current speed.

Average Speed
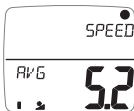
Clears the Average Speed memory; resets to the current speed.

Maximum True Wind Speed

Resets the Dual Maximum True Wind Speed memory; resets to the current true wind speed.

Race Chapter

Tack to Tack Correction

A value that corrects the speed displayed when the boat is on starboard tack, to take account of inherent differences of the measured speed on opposite tacks, e.g caused by off-centre installation of the transducer.

By default the correction is **zero**,

Boat Length
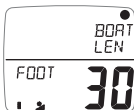
Sets the length of the boat in feet.
The default is **30 Feet**.

GPS Bow
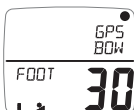
Sets the distance in feet of the GPS antenna from the bow of the boat. The default is **30 Feet**.

Depart (Line Distance Units)

Sets the units to be used for showing the distance to the start line, the options are Feet, **Metres**, Yards or Boat Lengths (see Boat Length parameter above)

Options Chapter

Page Hiding

Enables the user to hide pages.
See page 14 for the page hiding process.

(i) *Less commonly used pages are hidden by default; see page 12 for details of these pre-hidden pages.*

Pages Hidden
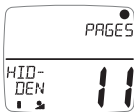
Displays the number of hidden pages and permits Page Hiding to be cleared, returning to all pages visible.
See page 14 for the page unhiding process.

Backlight Colour
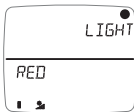
Selects the backlight colour for the display.
The options are **RED** or AMBER.

(i) *Raymarine recommend that, to save power, RED backlighting is used whenever possible.*

Backlight Control
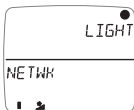
Configures the display to control the system backlighting or just its own backlighting.
The options are: **Network (NETWK)**/Local

Master

Sets the capability for the Display to aquire network mastership. When set to ON the current display will seize network mastership if mastership is available.
When OFF, the current display may be assigned mastership by the unit that is giving up mastership. The default is **OFF**.
Raymarine recommend you leave this setting at OFF unless advised by www.raymarine.com.

Units

Configures the display to show the units of displayed values. By default this is set to **OFF** and no units are displayed.

Demonstration Mode

Allows the display to show information when NOT installed as part of a Micronet system for demonstration purposes only.

Displays will return to **default OFF** on power down.

Factory Reset
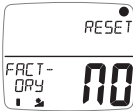
Returns all the calibration settings to the factory default values.

Health Chapter

Software Version/Network Nodes
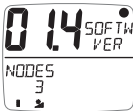
Displays the software version, battery level and charge rate to assist in troubleshooting and fault finding.

If the display is the "Master" (the one used to switch on the system) then the number of items (nodes) in the system will be shown. If the display is a "Slave" (was switched on by the system) then the signal strength to the "Master" will be shown in place of the number of nodes.

Hull Transmitter Signal Strength

Shows the software version (large digits), signal strength and battery condition (level and charge rate) of the Hull Transmitter to assist in trouble shooting and fault finding

Similar information pages are available for other transmitters if they areconnected to the micronet network, for example:

Wind Transmitter (identified as WIND)

Wireless (NMEA) Interface (NMEA)

Mast Rotation Transmitter (MAST)

Man Overboard Transmitter (MOB)

6   Seatrial and Calibration

Once a Raymarine Micronet system has been installed on the vessel and Auto Networking has been completed it is necessary to carry out Calibration.

It is not safe to use the displays for navigational purposes until Calibration has been carried out correctly.

Accurate calibration is essential for successful use of the Dual Maxi Display's advanced functions. In particular, the calculation of Set and Drift is sensitive to errors in the measured boat speed and the compass heading and deviation. To ensure the maximum accuracy, calibration must be carried out with great care.

System calibration cannot be carried out using the Dual Maxi Display, use a Remote Display for this purpose. Refer to the Remote Display user guide for the system calibration procedure.

For full calibration information see the Calibration Guide.

7   Installation

Your Dual Maxi Display may be mounted on a Raymarine Mast Bracket or directly onto a bulkhead.

7.1   Bracket mounting

Raymarine recommend the use of a Raymarine supplied bracket, which is designed to optimise the radio reception of the Dual Maxi Display. Please refer to the installation instructions provided with the bracket.

If using a customised bracket, you should avoid the use of conducting material (e.g Aluminium, Carbon Fibre, etc). If this is not possible, you must provide the maximum cut-out area behind each Dual Maxi Display to allow free circulation around the antenna. See the mounting template for details of the cutout required. If in doubt, refer to www.raymarine.com.

7.2   Bulkhead mounting

If installing your Dual Maxi Display on a carbon fibre or metal bulkhead, it may be necessary to make a cutout to ensure adequate radio circulation around the antenna. Refer to the mounting template for details of the cutout required. If in doubt, refer to www.raymarine.com.

Use the template provided to select a suitable position for mounting.

Ensure the mounting surface is flat.

Leave space between displays for sun covers.

Avoid areas where damage may occur (winch handles, feet, warps etc.)

Check for clarity of vision and ease of access to the control button.

Where there is no access to the rear of the mounting surface

Only use the screws provided with the display and take care not to over tighten the screws. Incorrect or overtightened screws may cause the moulding to crack; this will invalidate your warranty.

Position the supplied Template carefully before starting.

1. Drill four 2.5mm holes as marked on the template.
2. Refer to the diagram below. Using your fingers, carefully snap the facia of the display off the main body by pulling in the direction of the arrows.

Take care not to drop the button pad.

3. Remove the four captive M4 nuts from the plastic moulding and attach the display to the mounting surface using the four self tapping screws provided.

4. Check the display is perfectly level; carefully position the button insert into the slot and snap the facia back into position.
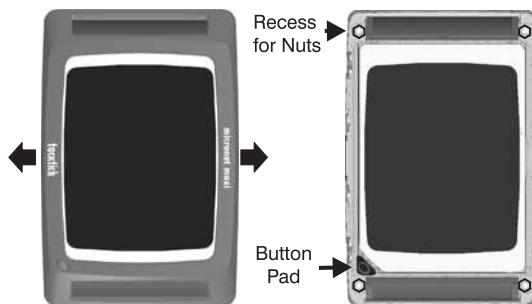
Where access is available to the rear of the mounting surface

do not bolt through from the front or replace the plastic nuts with metal nuts. This may cause the moulding to crack and will invalidate your warranty.

This method allows for maximum security of a permanently mounted display. Position the supplied template carefully before starting. Use bolts of a suitable length inserted from the rear. The internally fitted plastic nuts will prevent overtightening.

If the internal plastic nuts are displaced or become damaged, remove the bezel as described above and replace with the spare nuts provided.

Take care not to drop the button pad.

8   Maintenance and Fault Finding

8.1   Care and Maintenance

All Micronet products are totally sealed against water and are not serviceable. Any attempt to take a Micronet product apart will invalidate the warranty.

To clean, use only a damp, soft cloth. No detergents, solvents or abrasives should be used. To avoid damaging a Micronet display unit we recommend storing in the supplied soft pack when not in use.

If the displays are to be stored for a long period (e.g. over winter) ensure that the batteries are fully charged before storage.

8.2   Fault Finding and Technical Support

My Dual Maxi Display does not start when I switch on the system

Check that you have correctly carried out auto-networking to connect your Dual Maxi Display to the network. See the yellow Auto Networking sheet.

My Remote Display does not go into Remote Control mode

a) Remote control mode is not available for 30 seconds after the system is switched on. Wait 30 seconds and try again.

b) Remote control was not supported on displays manufactured before 2006. Ensure that you switch on the system using a display manufactured after 2006, the Remote Display or a Dual Maxi Display.

My Remote display does not find my Dual Maxi Display

Use the Remote Display setup function to reset the remote control list, see the Remote Display user guide for details. Wait 30 seconds and try remote control mode again.

The DRIFT display is showing erratic errors

Your Compass and Speed transducers require calibration. Refer to the Calibration guide for details.

Power No Volts alarm sounds

The Hull Transmitter and Wireless (NMEA) Interface must be connected to external power supplies. If this connection is not made, then you will see this alarm 10 seconds after powering up your system. Any DC voltage between 9 and 30V is sufficient to power the Hull Transmitter and Wireless (NMEA) Interface.

Power Save Alarm sounds

There has been no significant data activity on the network. The alarm sounds to indicate that the display system will turn itself off. To continue using the system press any button to cancel the alarm.

Lost Network Alarm sounds

This indicates that one or more displays have lost communication with the Master*. Either there is a problem with the Master* display or the displays in question have been moved out of effective range. The displays will switch off after sounding the alarm to save power.

(i) *The "Master" display" is the display used to power up the entire system. This may be different each time the system is used. If you are uncertain which display is the master, switch off the system and switch on again. The display which you switched on is now the Master.*

A single display flashes the battery symbol and then switches off

The battery level is low on the particular display affected. Connect to a 9 to 30V DC power source or leave in bright sunlight for 12 hours minimum to recharge the display's internal battery. If the particular display is the system Master* then the other displays will sound the "Lost Network" alarm. To continue using the rest of the system power down and restart the system from another display.

Low Battery Alarm sounds

The power level is low in the Hull Transmitter, Wireless (NMEA) Interface or Wind Transmitter. Enter Setup mode on the Remote Display and scroll to the Health Chapter. Check the battery levels of the Transmitters and Interface Box. The battery level icon should show 1, 2 or 3 bars to ensure correct operation. Connect the Hull Transmitter or Wireless (NMEA) Interface to a 9 to 30V DC power source for 12 hours minimum to recharge the internal battery. Leave the Wind Transmitter in bright sunlight for 12 hours minimum to recharge its internal battery.

Data is shown as dashes

The information is not being transmitted to the displays. There may be lost communication between the Wind Transmitter or Hull Transmitter and the displays. Enter Setup mode on the Remote Display and scroll to the Health Chapter. Check the signal levels of the Hull and Wind Transmitters. The signal level should show a value greater than 3 to ensure correct operation.

Boat Speed reads 0

Information being transmitted from the Hull Transmitter is being received with a zero value. Check the paddle wheel for fouling, clean it and make sure it turns easily.

Wind Speed reads 0

Information being transmitted from the Wind Transmitter is being received with a zero value. If the anemometer cups at the top of the mast are turning and the wind speed reads zero then there is a problem with your Wind Transmitter.

No NMEA data showing on external displays

Enter Setup mode on the remote display and scroll to the Health Chapter. Check the signal level and battery status of the Wireless (NMEA) Interface. If the signal level shows a value greater than 3 then check the data connections and the settings of the NMEA equipment to ensure that NMEA 0183 is being transmitted correctly.

The Depth Alarm does not sound

If the actual water depth is shallow and the alarm has not sounded it is most likely that the alarm is switched off. Enter Setup mode on the Remote Display and scroll to the Depth Chapter. Ensure the Depth Alarm settings are correct.

Compass information displayed on the system does not agree with the main steering compass.

Ensure that the main steering compass has been swung correctly and is showing correct information. Ensure that the Compass Calibration procedure has been correctly completed (see the Remote Display user guide). If there are still differences, look for magnetic objects (loud speakers, pumps and motors, etc.) close to the Compass Transducer and try mounting the transducer in an alternative location. After changing position of nearby equipment or the Compass Transducer it will be necessary to re-calibrate the compass.

9   Specifications

Height of main digits: 35 mm (2")

Backlighting: 3 levels (optional red or amber) with daylight shutoff

System-wide or local control

Power: Solar Powered

300 hrs autonomy by day, 7 nights at brightest backlighting,

20 nights at   economy backlighting without charge

Units of display: Boat Speed (knots, km per hour, statute miles per hour)

Distance (nautical miles, statute miles, kilometres)

Depth (metres, feet, fathoms)

Wind Speed (knots, metres per second, Beaufort)

Alarm: Audible Alarms for Depth, Wind, Cross Track Error, Waypoint Arrival

Weight: 365g (0.8lbs)

Operating Temp: -10° to +60°C (14° to 140°F)

Frequency: 868 MHz or 916 MHz

10   Warranty

For warranty details for this product see the Raymarine website at www.raymarine.com/warranty.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference's that may cause undesirable operation.
Note: the manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Raymarine Ltd hereby declare that the Micronet Dual Maxi Display is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

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