RaceData2 User Guide

Expedition Navigation Software data on your phone

Overview

RaceData2 is a mobile application for phones and tablets that displays and graphs data from Expedition Navigation Software, while enabling remote control of Expedition functions.

Key Features:

- Clear, easy-to-read data in pre-set and custom layouts
- Graph data with moving average (MA) and exponential moving average (EMA) indicators
- Display minimum, mean, and maximum values
- Ping the start line and marks
- Set and control the race timer
- Ping new marks, advance or revert the active mark in a route
- Ping the Active Mark to the bow/gps
- Set up Windward/Leeward race courses
- Set a man overboard (MOB) trigger for Expedition

Note: The free version is limited to one data page. An annual subscription is required for full features including graphs and commands and can be purchased within the app.

Step 1: Install the App

1. Install RaceData2 from the Google Play Store or Apple App Store.
2. Ensure your device is connected to the same network as your Expedition PC.

Step 2: Set Up Expedition

3. In Expedition, go to Menu > Instruments and select a Network port.

Note: If you do not have a spare Network port, add one at Menu > Instruments > # Number of Network Connections

4. Configure your Network port with the following settings:
   a) **Instruments:** Expedition
   b) **Connection:**   UDP
   c) **Address:**   This is the IP address Expedition will transmit data to. Setting the last field to *.255 (e.g., 192.168.20.255) will broadcast data for any device on the network to listen to.
   d) **Port:** RaceData2 default port is 6011. Change the port here to 6011 or change the RaceData2 port to match.
5. Apply these changes and click Expedition Settings.
   Configure the following:
      a) **Exp Rx Filter:** Clear All, but select 'Receive Marks' for pinging marks
      b) **Exp Tx Filter:** Select the Expedition channels you wish to send to RaceData2
6. Apply these changes and verify in Raw Data that data is being transmitted.

Step 3: Configure RaceData2

Initial Setup

1. Ensure your phone or tablet is on the same network as Expedition.
2. Start RaceData2 and accept the permissions.
3. Tap the Settings gear icon at the bottom right.

Settings Options

Display Settings:

- **Screen always on:** Prevents your phone screen from turning off
- **Dim in Pocket:** Turns the screen off when your phone is stowed
- **Pin RaceData2 on top:** Prevents other apps from drawing over the top

Important: With the three settings above enabled, you will remain connected to Expedition and data will be stored for rendering graphs. If RaceData2 is not the 'on top' app, data reception will be paused. This is a limitation of the Android and iOS operating systems.

Data Settings:

- **Data Listening:** Enables/disables the display of data
- **Auto Start:** Starts listening to data when RaceData2 is launched
- **Demo Data:** Can be used to set up Display pages for testing

Network Settings

- Check your phone IP address against the Expedition computer IP address to verify they are in the same IP range
- Enter the IP address of the Expedition computer. You may ping to check the PC is detected. *This IP address is important for Expedition to receive commands from RaceData2*
- Set the UDP Tx and Rx ports (typically the same) to match Expedition
- If Expedition and RaceData2 are correctly configured, you will see raw data in the console when the Raw Data button is pressed

Data Pages

- Press the Pages icon to reveal a 2 x 4 data page
- Red dots indicate no data received
- Green dots will flash when receiving data
- Data font will turn GREY if data is stale (no change in value in 10 seconds)
- Data font will turn RED if no data for that channel received in 20 seconds
- Press any data field to see a list of available channels and select a data channel
- A Page Settings icon appears next to the Pages icon on the navigation bar

Page Settings Options:

- **Select Layou**t to change the current page layout
- **Lock Cells** prevents accidental touches from changing the data fields
- **Lock Page** makes the current page full screen and prevents accidental touches. When touched a small padlock appears. Press and hold this to **Unlock**
- Delete Page removes the current page if more than one page is available
- Add Data Page creates a new data field page
- Add Graph Page adds a new graph page
- Swipe left or right to change between data and graph pages

Graph Pages

To configure graphs, tap on the Graph Config icon on the navigation bar:

- Select the channels to graph
- Select the time span
- Select a trendline None, MA (moving average), or EMA (exponential moving average)
- **Shade** will shade between the live data and the MA or EMA
- The graphs show minimum, average, and maximum data over the time span

Command Page

Send RaceData2 commands to Expedition. ALL commands will display a second confirmation window. The command is sent on confirmation only.

Start Line Commands:

- **Ping P:** Pings port end of start line in Expedition
- **Ping S:** Pings starboard end of the start line in Expedition
- **Timer:** Sets start countdown timer in Expedition (standard timer options and custom set in mm:ss are available)
- **Sync:** Syncs Expedition start timer to the nearest minute
- **Kill:** Kills the start timer in Expedition

Mark Commands:

- **Set W/L Course:** Enter the course geometry and press Send
- **Ping New:** Pings a new mark (not active) in Expedition
- **Ping Active**: Moves the current active mark to the bow/gps (set in Expedition)
- **Previous:** Moves the active mark to the previous mark in the route
- **Next:** Moves the active mark forward to the next mark in the route
- Active Mark displays the name of the current active mark in Expedition

Man Overboard (MOB):

- Pressing the MOB button (red/white life ring) sends an MOB command to Expedition and requires secondary confirmation
- See Expedition help for more details. Typically, this sets an alarm on Expedition and creates an active MOB mark
- If other instruments are integrated (such as an NMEA2000 interface), the MOB alert can be broadcast to other systems

Troubleshooting

No Data Received

If you are not receiving data, verify the following:

- WiFi is connected on your device
- IP address and UDP port settings match between RaceData2 and Expedition
- Expedition Instruments > Raw Data is showing data streaming
- Use the 'ping' function in RaceData2 Settings to check if the Expedition IP address responds

Note: If there is no reply to the ping, check your network settings and ensure both devices are on the same subnet.