



NAVDoctor

New Product Introduction

Part Number: ZDIGNAVDOC

UPC: 703791696192

NAVDoctor - NMEA 2000 Network Diagnostic Tool

www.digityacht.co.uk Availability: September 2020 SRP £300 EX VAT



NAVDoctor - Outline

Dear Partner

NMEA 2000 networks are used extensively for interfacing marine electronic products. It's based on a robust Canbus architecture, but one bad device, cable or termination can have a detrimental effect on performance. Fault finding can be time consuming and tricky.

NAVDoctor is a portable NMEA 2000 network diagnostic tool/tester which quickly allows you to check and diagnose the NMEA 2000 network. It combines the functionality of existing NMEA 2000 display programs and test equipment into a single, cost effective, simple plug 'n play box.

It's self powered from the network and creates a local wifi point for a mobile phone, tablet or PC to connect. Once connected, you simply access functions through a web browser so there's no complicated software to install.

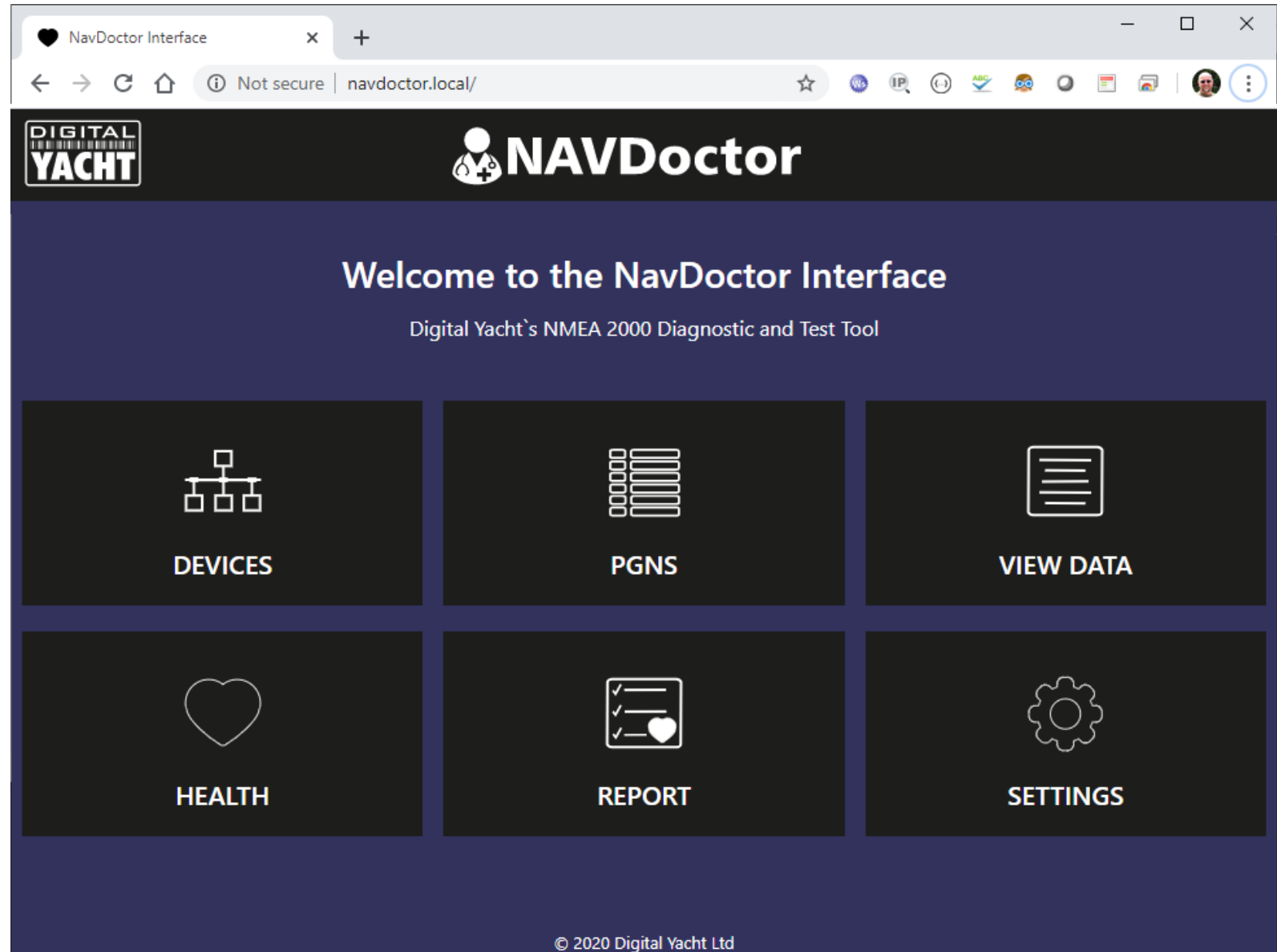
NAVDoctor is an essential tool for every marine electronics technician or installer and also offers the capability of printing a network health check certificate to validate an installation and improve customer service.

The Digital Yacht team

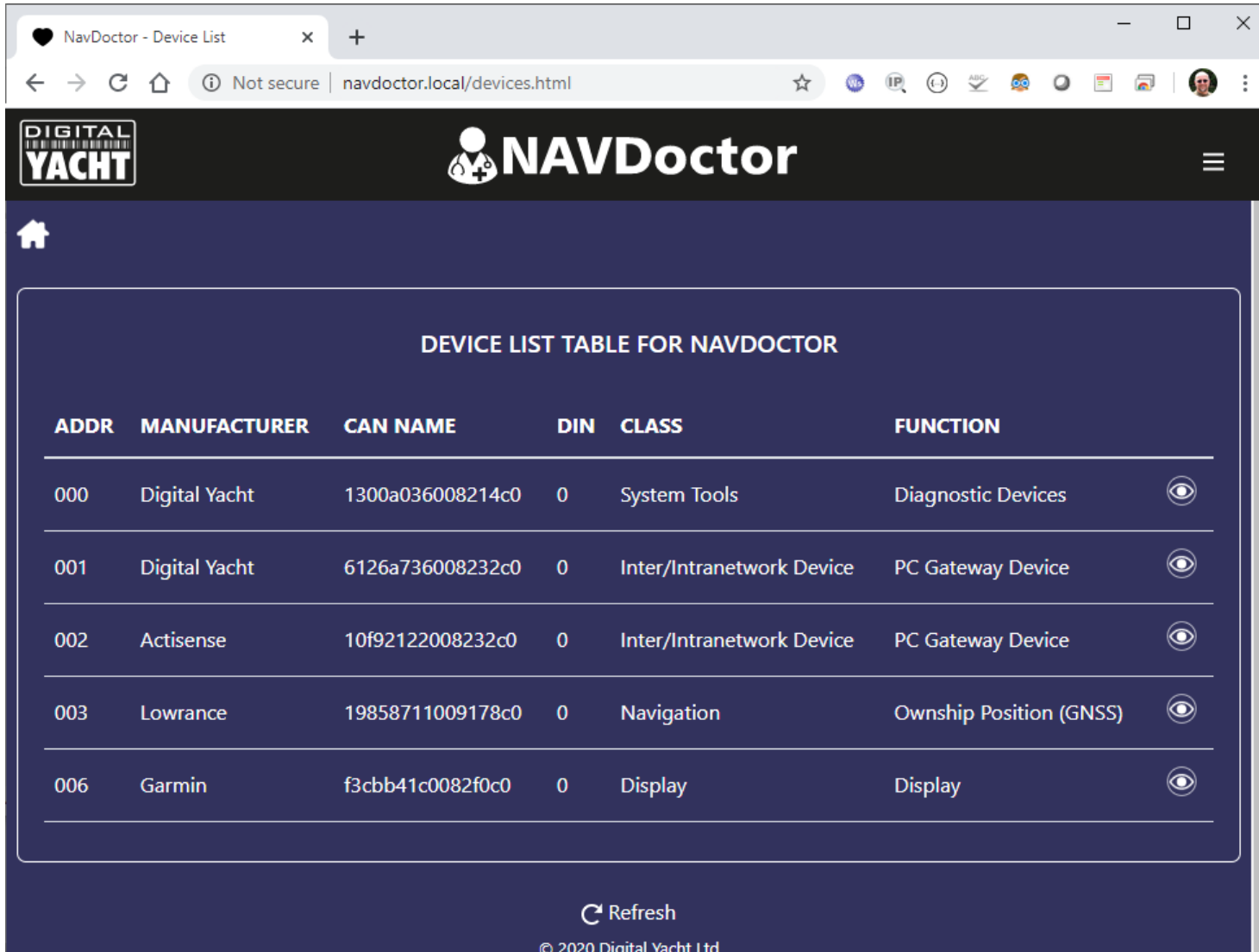


Key Features

- No special Apps or software required – built-in web interface
- Works on any mobile device; iOS, Android, Windows, Mac, etc
- Connect wirelessly and view data through a web browser
- Lists all devices on the network
- Displays all PGNs on the network
- Drill down into a particular PGN and decode/display its data
- Display and log the RAW NMEA 2000 data
- Check the network health, voltages, bus load, error frames, etc.

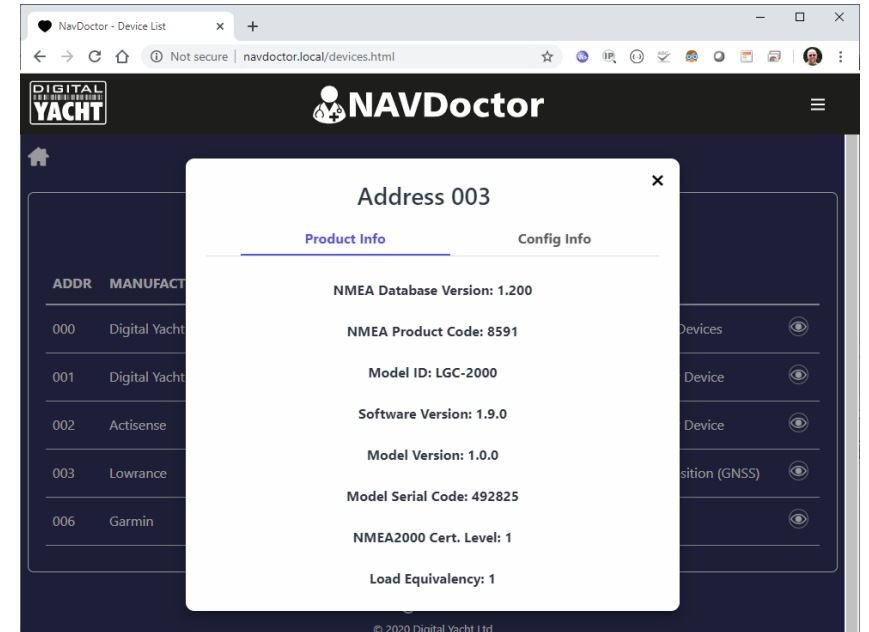


Typical Screen Displays – Device List



The screenshot shows the NAVDoctor web interface. At the top, there is a header with the "DIGITAL YACHT" logo and the "NAVDoctor" brand name. Below the header, a table titled "DEVICE LIST TABLE FOR NAVDOCTOR" is displayed. The table has six columns: ADDR, MANUFACTURER, CAN NAME, DIN, CLASS, and FUNCTION. Each row represents a device on the network. At the bottom of the page, there is a "Refresh" button and a copyright notice for Digital Yacht Ltd.

| ADDR | MANUFACTURER | CAN NAME | DIN | CLASS | FUNCTION |
|------|---------------|------------------|-----|---------------------------|-------------------------|
| 000 | Digital Yacht | 1300a036008214c0 | 0 | System Tools | Diagnostic Devices |
| 001 | Digital Yacht | 6126a736008232c0 | 0 | Inter/Intranetwork Device | PC Gateway Device |
| 002 | Actisense | 10f92122008232c0 | 0 | Inter/Intranetwork Device | PC Gateway Device |
| 003 | Lowrance | 19858711009178c0 | 0 | Navigation | Ownship Position (GNSS) |
| 006 | Garmin | f3cbb41c0082f0c0 | 0 | Display | Display |



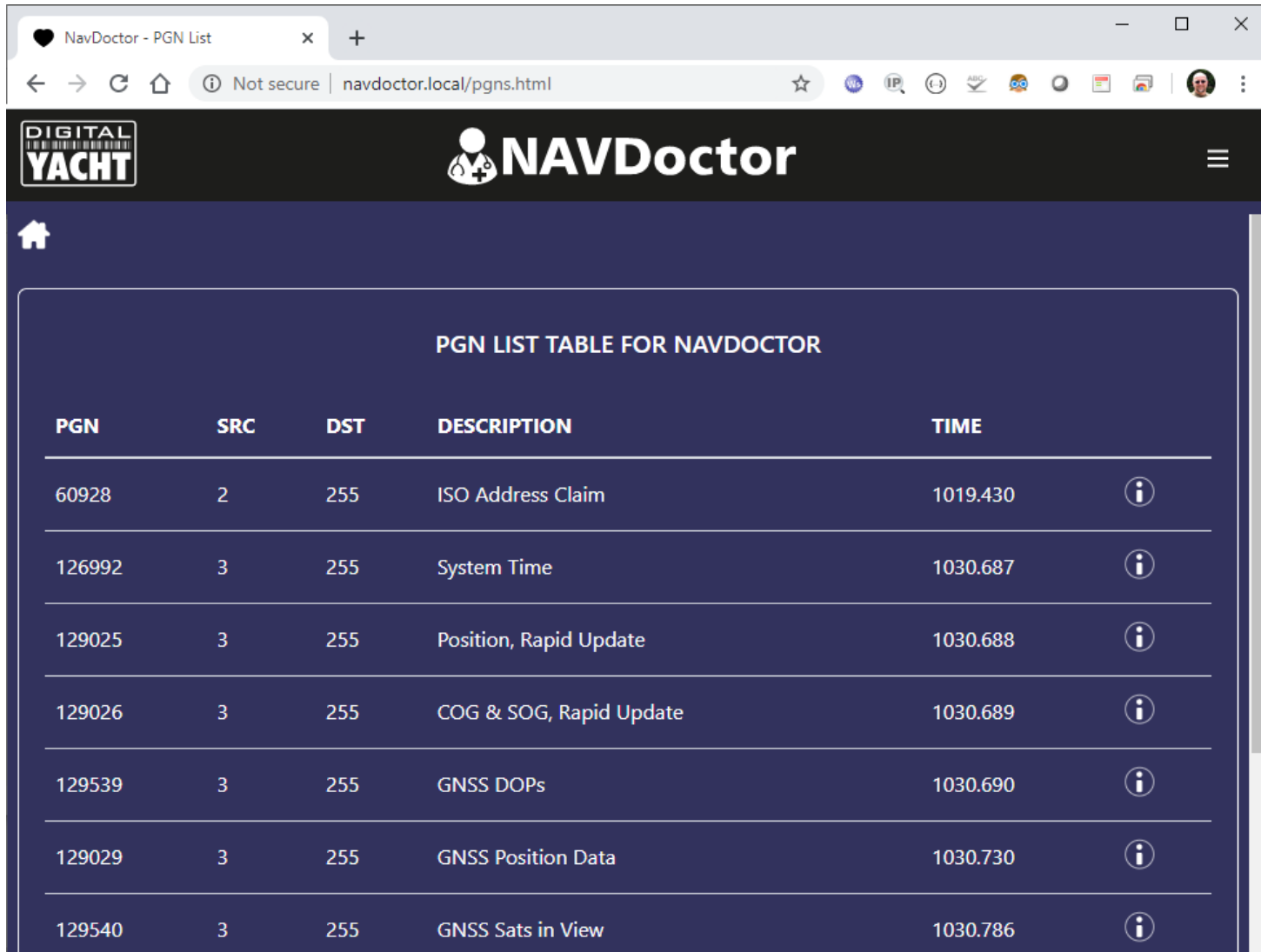
The screenshot shows the NAVDoctor web interface with a modal window open for "Address 003". The modal window has two tabs: "Product Info" (selected) and "Config Info". The "Product Info" tab displays the following information:

- NMEA Database Version: 1.200
- NMEA Product Code: 8591
- Model ID: LGC-2000
- Software Version: 1.9.0
- Model Version: 1.0.0
- Model Serial Code: 492825
- NMEA2000 Cert. Level: 1
- Load Equivalency: 1

The background shows a partial view of the device list table from the previous screenshot.

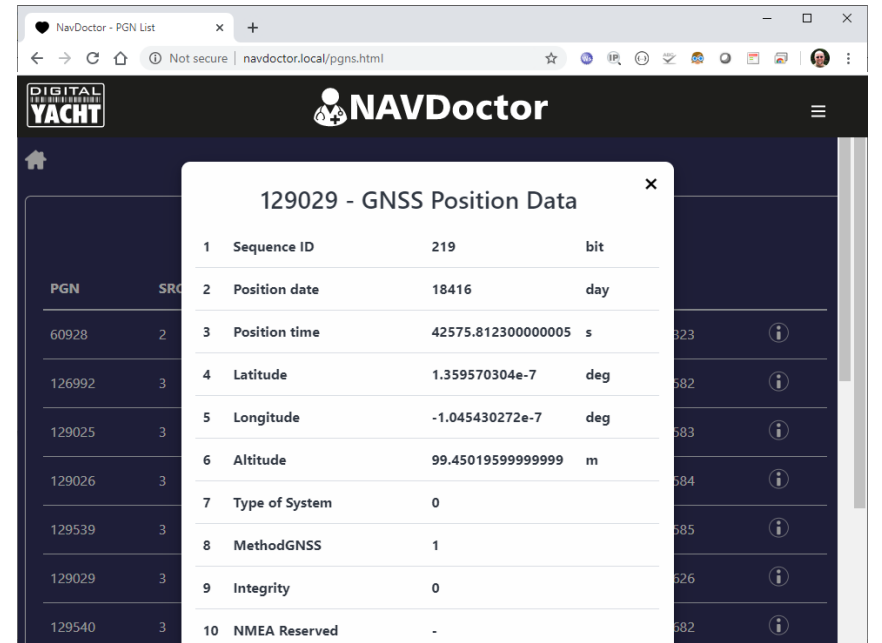
Device list shows all devices on the network with drill down providing extended information such as serial number, software version and NMEA certification and product ID

Typical Screen Displays – PGN List



The screenshot shows the NAVDoctor web interface. At the top, there is a header with the "DIGITAL YACHT" logo and the "NAVDoctor" name. Below the header is a table titled "PGN LIST TABLE FOR NAVDOCTOR". The table has five columns: PGN, SRC, DST, DESCRIPTION, and TIME. Each row represents a different PGN with its source, destination, description, and time. Information icons are visible to the right of each row.

| PGN | SRC | DST | DESCRIPTION | TIME |
|--------|-----|-----|-------------------------|----------|
| 60928 | 2 | 255 | ISO Address Claim | 1019.430 |
| 126992 | 3 | 255 | System Time | 1030.687 |
| 129025 | 3 | 255 | Position, Rapid Update | 1030.688 |
| 129026 | 3 | 255 | COG & SOG, Rapid Update | 1030.689 |
| 129539 | 3 | 255 | GNSS DOPs | 1030.690 |
| 129029 | 3 | 255 | GNSS Position Data | 1030.730 |
| 129540 | 3 | 255 | GNSS Sats in View | 1030.786 |

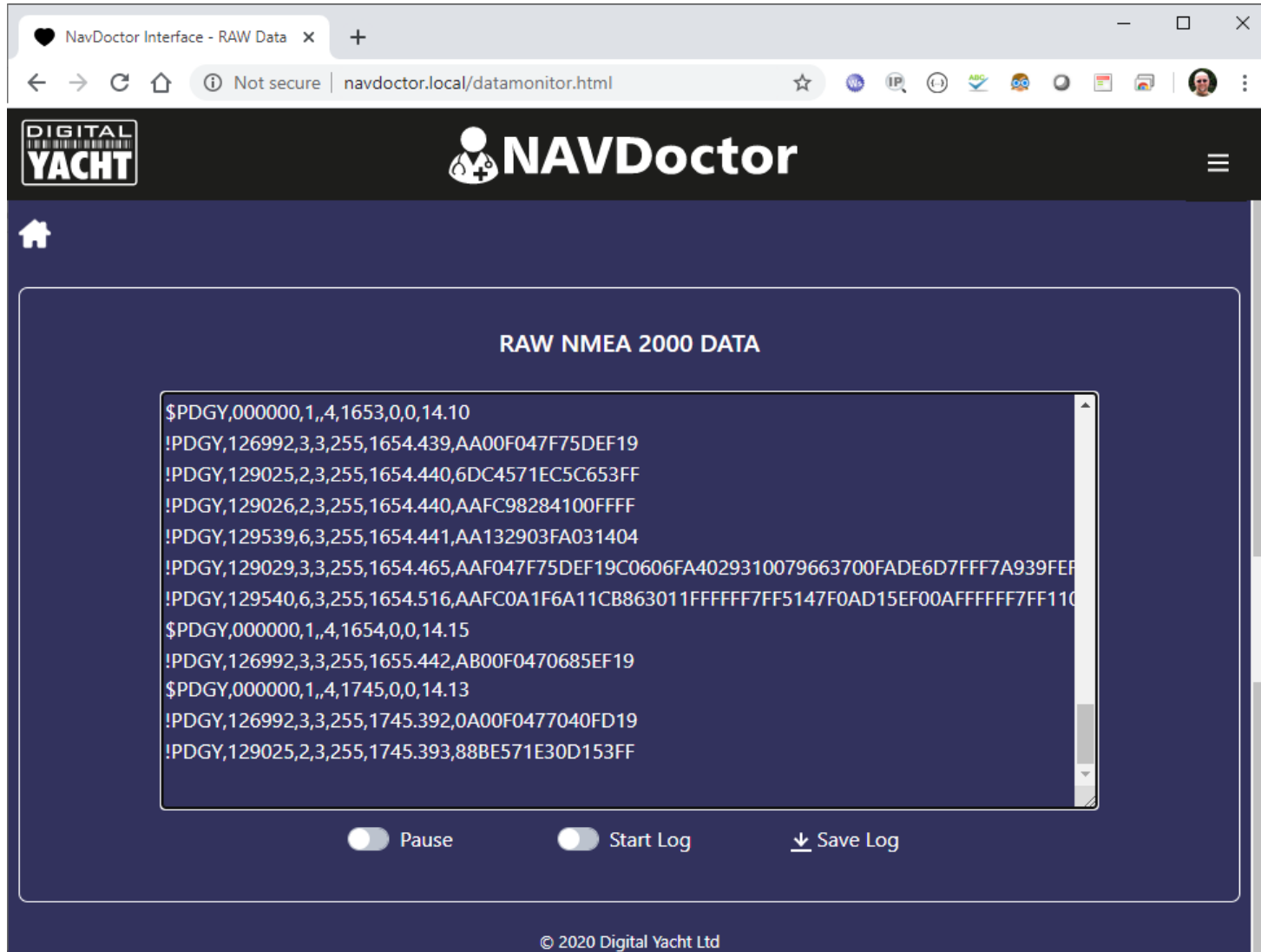


The screenshot shows the same NAVDoctor web interface, but with a modal window open for PGN 129029. The modal is titled "129029 - GNSS Position Data" and displays a list of 10 fields with their values and units. The background table is partially visible behind the modal.

| Sequence ID | Value | Unit |
|-------------|--------------------|------|
| 1 | 219 | bit |
| 2 | 18416 | day |
| 3 | 42575.812300000005 | s |
| 4 | 1.359570304e-7 | deg |
| 5 | -1.045430272e-7 | deg |
| 6 | 99.45019599999999 | m |
| 7 | 0 | |
| 8 | 1 | |
| 9 | 0 | |
| 10 | - | |

PGN list shows all data PGNs on network (including source and destination) with drill down and decoding

Typical Screen Displays – Raw Data & Log

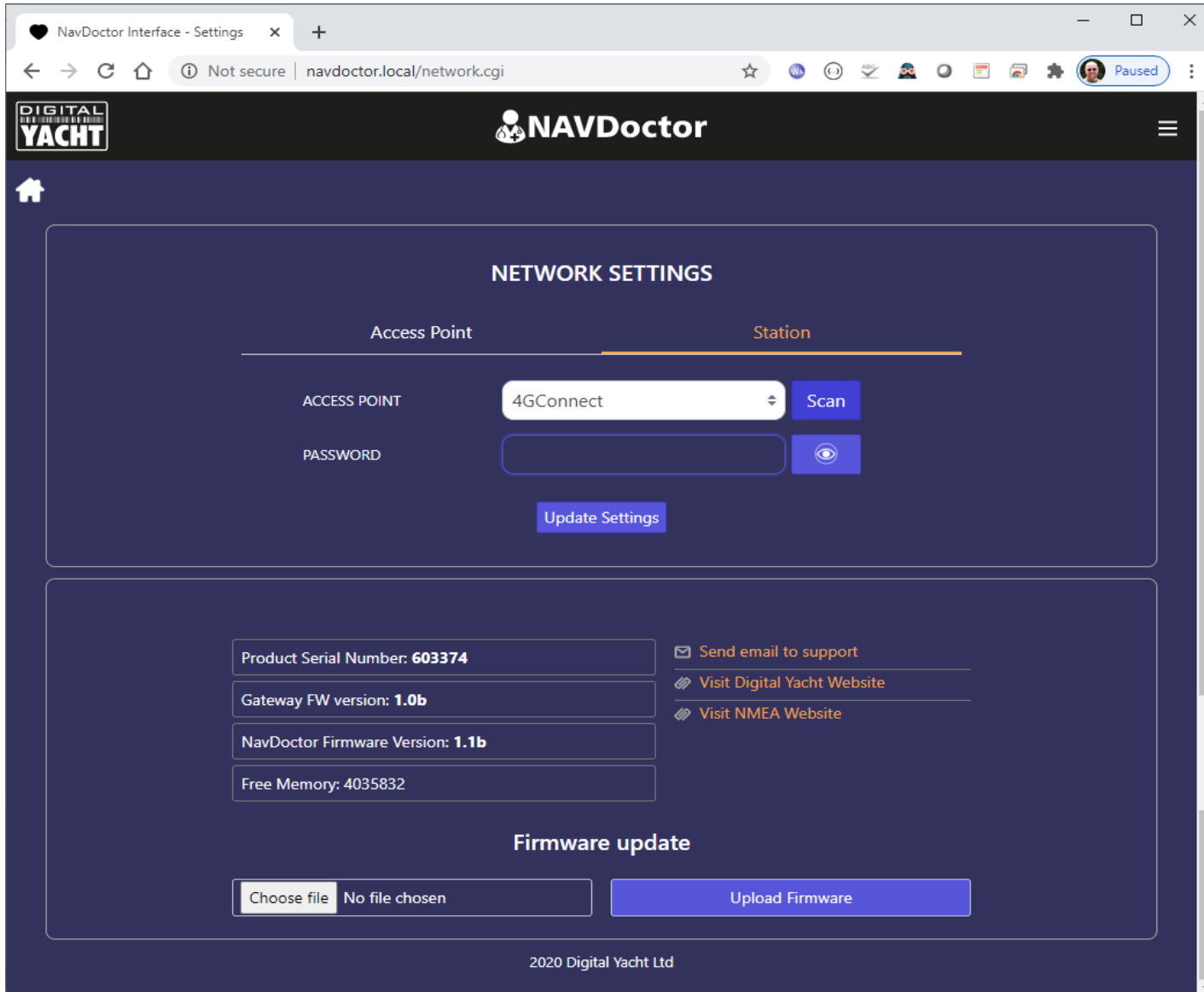


The screenshot shows a web browser window titled "NavDoctor Interface - RAW Data". The address bar shows "navdoctor.local/datamonitor.html". The page header includes the "DIGITAL YACHT" logo and the "NAVDoctor" logo. The main content area is titled "RAW NMEA 2000 DATA" and displays a list of NMEA messages in a scrollable text area. Below the text area are three controls: a "Pause" toggle switch (currently off), a "Start Log" toggle switch (currently on), and a "Save Log" button with a download icon. The footer of the page reads "© 2020 Digital Yacht Ltd".

```
$PDGY,000000,1,,4,1653,0,0,14.10
!PDGY,126992,3,3,255,1654.439,AA00F047F75DEF19
!PDGY,129025,2,3,255,1654.440,6DC4571EC5C653FF
!PDGY,129026,2,3,255,1654.440,AAF098284100FFFF
!PDGY,129539,6,3,255,1654.441,AA132903FA031404
!PDGY,129029,3,3,255,1654.465,AAF047F75DEF19C0606FA4029310079663700FADE6D7FFF7A939FEF
!PDGY,129540,6,3,255,1654.516,AAF0A1F6A11CB863011FFFFFF7FF5147F0AD15EF00AFFFFFFF7FF110
$PDGY,000000,1,,4,1654,0,0,14.15
!PDGY,126992,3,3,255,1655.442,AB00F0470685EF19
$PDGY,000000,1,,4,1745,0,0,14.13
!PDGY,126992,3,3,255,1745.392,0A00F0477040FD19
!PDGY,129025,2,3,255,1745.393,88BE571E30D153FF
```

Raw data log allows logging and saving of data for analysis (as a simple text file) as well as the ability to pause data display

Typical Screen Displays - Settings



The screenshot displays the NAVDoctor web interface in a browser window. The browser's address bar shows the URL `navdoctor.local/network.cgi`. The interface features a dark blue header with the "DIGITAL YACHT" logo and the "NAVDoctor" brand name. A home icon is visible in the top left corner.

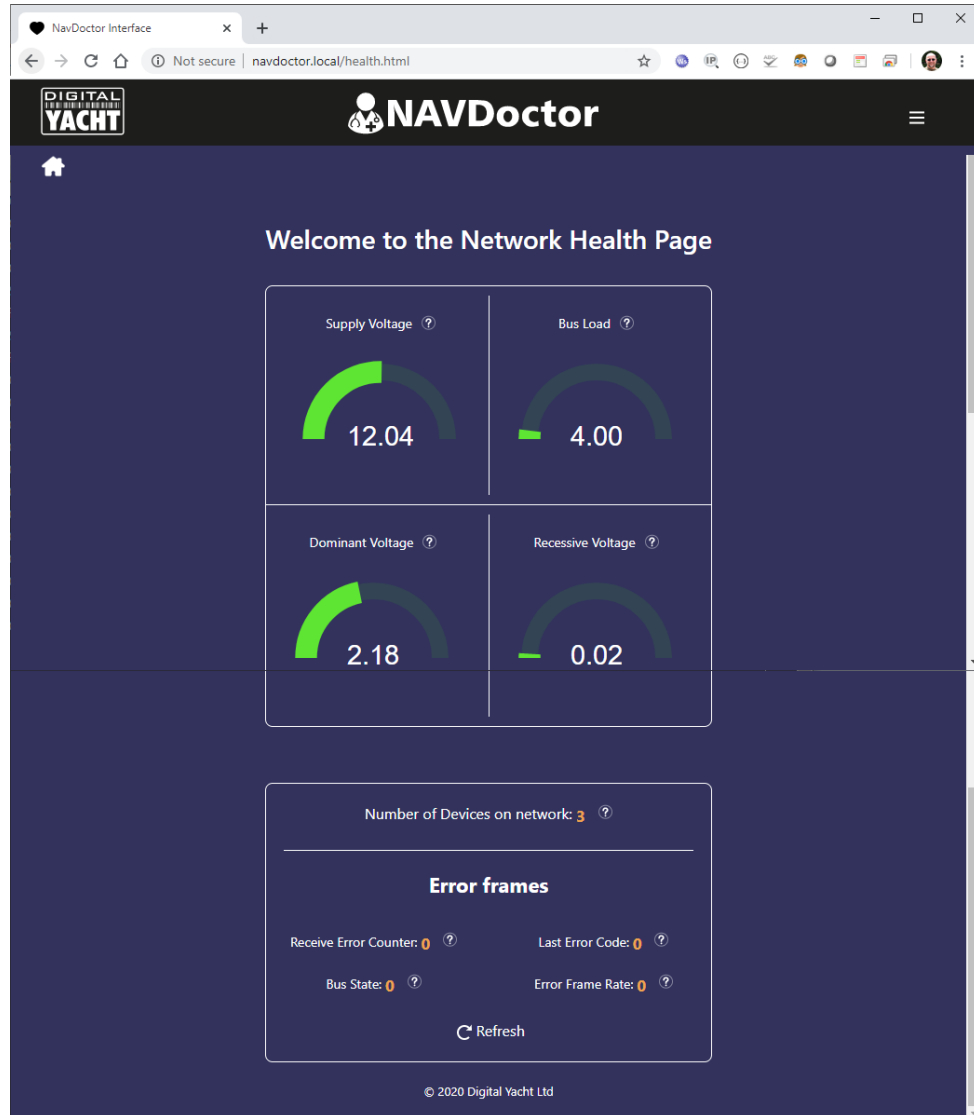
The main content area is divided into two sections:

- NETWORK SETTINGS:** This section has two tabs: "Access Point" (selected) and "Station". Under the "Access Point" tab, there are input fields for "ACCESS POINT" (containing "4GConnect") and "PASSWORD". A "Scan" button is next to the access point field, and a toggle icon is next to the password field. An "Update Settings" button is located below these fields.
- System Information:** This section displays several status boxes: "Product Serial Number: 603374", "Gateway FW version: 1.0b", "NavDoctor Firmware Version: 1.1b", and "Free Memory: 4035832". To the right of these boxes are three links: "Send email to support", "Visit Digital Yacht Website", and "Visit NMEA Website".

At the bottom of the interface, there is a "Firmware update" section with a file selection button labeled "Choose file" (showing "No file chosen") and an "Upload Firmware" button. The footer of the page reads "2020 Digital Yacht Ltd".

NAVDoctor creates its own wifi access point but can also join another wifi network if required. Firmware updates can be easily implemented through the browser interface

Typical Screen Displays – Network Health



NAVDoctor also checks the physical status of the network and shows supply voltage, bus load, dominant and recessive voltage and error frame rate

Typical Screen Displays – Network Test Report

The screenshot displays the NAVDoctor Network Test Report interface. At the top, there is a header with the Digital Yacht logo and the NAVDoctor brand name. Below the header, the title "NavDoctor Network Test Report" is centered. The main content area is divided into two sections. The first section is a table listing devices on the network. The second section is a summary of test results, including a list of metrics with their values and a status indicator (green checkmark for success, red X for failure). At the bottom, there are buttons for "Refresh" and "Print", and a copyright notice for Digital Yacht Ltd.

| ADDR | MANUFACTURER | CAN NAME | DIN | CLASS | FUNCTION |
|------|---------------|------------------|-----|---------------|--------------------|
| 000 | Digital Yacht | 1300a036008214c0 | 0 | System Tools | Diagnostic Devices |
| 002 | Garmin | 15cbac1c0082f0c0 | 0 | Display | Display |
| 043 | Digital Yacht | d7d1bc36008c8cc0 | 0 | Communication | AIS |

| | | | |
|---|----------------------------------|---|----------------------|
| ✓ | Number of Devices on the Network | = | 3 |
| ✓ | Bus Load | = | 4 |
| ✓ | Bus Supply Voltage | = | 12.04 |
| ✓ | Bus Dominant Voltage | = | 2.19 |
| ✓ | Bus Recessive Voltage | = | 0.02 |
| ✓ | Error Frame | = | 0 |
| ✗ | Boat Name | | <input type="text"/> |
| ✗ | Tested By | | <input type="text"/> |
| | Date / Time | | 14:23 05/05/20 |

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NAVDoctor can generate a printable network summary test report which is ideal for technicians to offer customers as a validation of the installation.