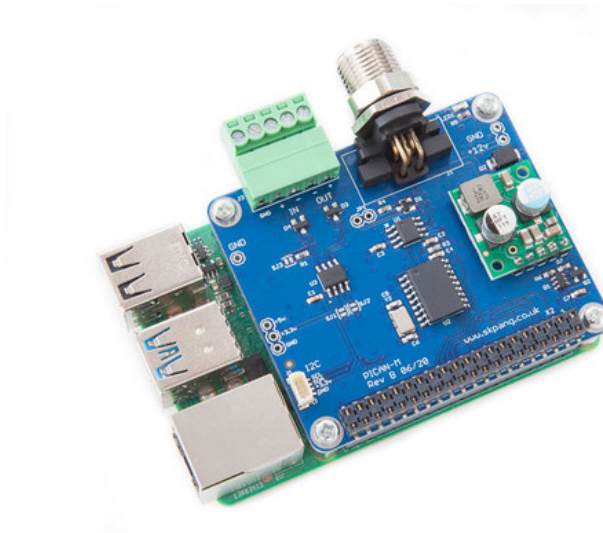




## NMEA 2000 Development and Prototyping Boards for Marine Applications



*Copperhill Technologies offers a line of Arduino-Compatible NMEA 2000 development and prototyping boards as well as an NMEA 0183/NMEA 2000 HAT for the Raspberry Pi. The Raspberry Pi HAT supports marine applications such as OpenCPN, OpenPlotter, Signal K, and CANBoat.*

**GREENFIELD, Mass. - Jan. 19, 2021 - [PRLog](#)** -- The NMEA 2000 standard defines a low-cost, modest capacity, bi-directional, multi-transmitter, multi-receiver instrument network. The hardware layer is based on [CAN \(Controller Area Network\)](#). Typical data on an NMEA 2000 network include position latitude and longitude, GPS status, steering commands to autopilots, waypoint lists, wind sensor data, engine sensor data, depth sounder sensor data, and battery status data.

The [PICAN-M](#) (M = Marine) is a Raspberry Pi HAT with NMEA 0183 and NMEA 2000 connection. The NMEA 0183 (RS422) port is accessible via a 5-way screw terminal. The NMEA 2000 port is accessible via a Micro-C connector. The board comes with a 3A SMPS (Switch Mode Power Supply), allowing to power the Raspberry Pi plus HAT from an onboard power source (12 VDC).

The PICAN-M HAT supports marine applications such as OpenCPN (Open Chart Plotter Navigator), a free software project to create a concise chart plotter and navigation software for use underway or as a planning tool. Signal K is a modern and open data format for marine use. Built on standard web technologies, including JSON, WebSockets, and HTTP, Signal K provides a method for sharing information in a way that is friendly to WiFi, cellphones, tablets, and the Internet. CANBoat represents a suite of command-line driven programs that work with a boat's NMEA 2000 (CAN Bus) networks.

The [Teensy 4.0 With NMEA 2000 Connector And 240 x 240 IPS LCD](#) is an Arduino-compatible microprocessor system that comes with a 240x240 pixels IPS LCD and a Micro C NMEA 2000 connector. The board receives power through the 12 VDC NEMA 2000 connector that feeds an onboard 5 VDC regulator. There is also a 4-way 1mm (Qwiic) IC2 connector for external sensors. The example code provided with the board reads data from an NMEA 2000 wind sensor and a temperature sensor and displays

the reading on the LCD.

The [Teensy 4.0 NMEA 2000 Board with 480x320 3.5" Touch LCD](#) comes with an NMEA 2000 connector, and it includes a 480x320 3.5" capacitive touch screen with ILI9488 LCD controller. The connection to the Teensy is established via SPI running at 60 MHz. The board can be powered through the Teensy's USB port or via an external 7 to 24 VDC supply connected to the onboard SMPS (Switch Mode Power Supply).

All boards and their corresponding interfaces are well documented (user manuals, schematics), and a vast library of programming samples supports the development and rapid prototyping of maritime applications.

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