

N2K Toolbox — User Manual

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The N2K Toolbox is a handheld NMEA 2000 / 0183 tester and simulator. It has three operating modes, switchable from the touchscreen or a paired web UI on the same WiFi.

1. Simulator mode

Generates N2K traffic on the real CAN bus. Pick a boat-state scenario (GPS, engine, wind, depth, AIS) and the device emits the correct PGNs at the correct rates with a proper address claim. Use it to bench-test a freshly wired backbone, validate how a chartplotter handles specific PGNs, or demo a full system without a live boat.

2. Tester mode

A passive bus analyzer. It discovers devices on the backbone and reports each PGN's frequency, the overall frames-per-second, and bus error counters — so you can confirm a boat's NMEA 2000 network is healthy before handing it back to the customer.

3. WiFi Simulator mode

Runs the same scenario engine as Simulator mode, but outputs **NMEA 0183 + N2K Actisense ASCII over TCP and UDP** on the WiFi network — no CAN wiring required. Point OpenCPN, Navionics, or any compatible app at the device to test it from the bench.

Control surfaces

- **Touch** — the on-device colour touchscreen.
- **Web** — the paired web UI on the same WiFi, for editing long lists of values.

Connecting

For Simulator and Tester modes, connect the device to the NMEA 2000 backbone via its CAN terminals. For WiFi Simulator mode, join the device's WiFi network and connect your app to the advertised TCP/UDP endpoint.

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