QUARK-ELEC

SET-UP GUIDE

QK-A027+ NMEA 2000 AIS+GPS RECEIVER

NMEA 2000/0183/WIFI/USB/ETHERNET OUTPUT
MULTIPLEXING SEATALK & NMEA 0183 INPUT WITH
SEATALK TO NMEA 0183 CONVERTER
## BUILT-IN NMEA 0183 TO NMEA 2000 CONVERTER

10. Standard WiFi Ad-hoc connection on your wireless device:

15 seconds after the A027+ has powered up, scan for a WiFi network with an SSID similar to 'QK-A027xxxx'. Connect to '**QK-A027xxxx**' with the default password: '**88888888**'.

Ad-hoc mode   Station mode   Standby mode

Chart software: in your chart software, set the protocol to '**TCP**', IP address to '**192.168.1.100**' and port number to '**2000**'
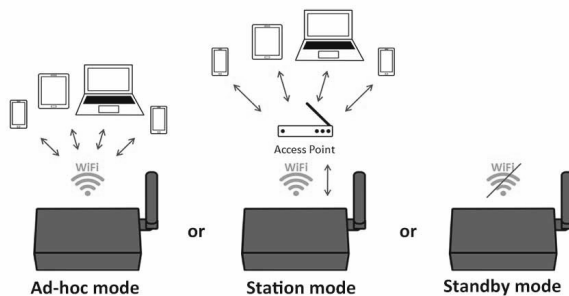
For station mode WiFi or to disable WiFi, use the configuration software (see below).

11. Follow your marine software/app instructions for adding input/output data sources. A general overview can be found in the A026+ manual.

USING THE CONFIGURATION SOFTWARE (WINDOWS):

Ad-hoc WiFi passwords can be changed for security and memorability.

WiFi can be changed from Ad-hoc (default) to station or standby mode.
Station mode is configured by inputting your router/access point details into the configuration software (once configured, the correct settings must be entered into your chart software).

Filtering: using the black list function
If desired, selected NMEA sentences can be blocked from chosen input/s, using the 'black list' field. Remove the '$' or '!' from the 5 digit NMEA talker and sentence identifier and insert separated by commas. For example to block '!AIVDM' and '$GPAAM' enter 'AIVDM,GPAAM' .
Up to 8 sentences types can be filtered from each input port. If blacklisting SeaTalk[1] data, block the corresponding NMEA message (see the manual for a full list of converted messages).

Routing your data
As a default, all data input (excluding any filtered data) is routed to all outputs . Data can be routed to limit the data flow to certain outputs by un-ticking the corresponding boxes in the configuration software. *Please be aware, with the current firmware version the USB and WiFi is only a one-way port, it doesn't output any data even the output box has been ticked.*

Monitor the data stream via USB
Use the 'display' tab on the configuration tool to monitor all input data including the data received through NMEA 2000 backbone (both PCDIN and NMEA 0183 format).

NMEA Default Baud rates can be adjusted as required. Default baud rates settings are:
• NMEA IN 4800bps, NMEA OUT: 38400bps. These can be adjusted as required.

LAN settings: IP, gateway address and subnet mask can be setup for ethernet usage.
Setup the output format of the NMEA 2000 messages. *Please be aware, with the current firmware version, the NMEA 2000 is only a one-way port, it doesn't output any data even the output format has been selected.*

Disclaimer: This product is designed to aid navigation and should be used to augment normal navigational procedures and practices. It is the user's responsibility to use this product prudently. Neither Quark-elec, nor their distributors or dealers accept responsibility or liability either to the product user or their estate for any accident, loss, injury or damage whatsoever arising out of the use or of liability to use this product.

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QK-A027-PLUS AISnet Receiver

NMEA 2000 AIS+GPS RECEIVER with Ethernet Port

Multiplexing Seatalk1 & NMEA 0183 Input

NMEA 2000/0183/WiFi/USB/Ethernet Output

Built-in NMEA 0183 to NMEA 2000 Converter
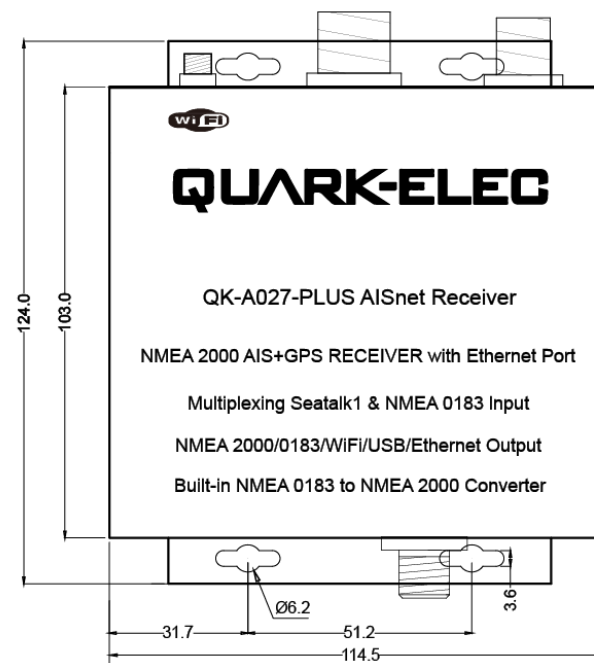
All products are CE, RoHS certified
www.quark-elec.com

Please recycle your packaging

This is an overview only. Familiarize yourself with the manual and the manuals of any connecting devices before installation. It is always recommended that electronic equipment be installed by an experienced installer.

BEFORE LEAVING HOME:

12V power required, the A027+ isn't powered by the NMEA 2000 backbone.

Configuration software is optional and only needed for specific features.
To use any of the following features, you will require the configuration software:

- Changing WiFi mode from Ad-hoc to station or standby mode.
- Setup IP and gateway address for ethernet (RJ45 port).
- Adjusting baud rates from their default settings (NMEA 0183 input as 4.8kbps, output as 38.4kbps).
- Filtering unwanted or excess data.
- Routing data away for certain output devices.
- Full diagnostics monitoring of the data streams.

Configuration software (Windows) will be required to adjust these settings (see back of this guide for more information). Driver may be required for older Windows PCs. This may install automatically to Windows 10 systems (if not, it is on the free CD and at quark-elec.com)
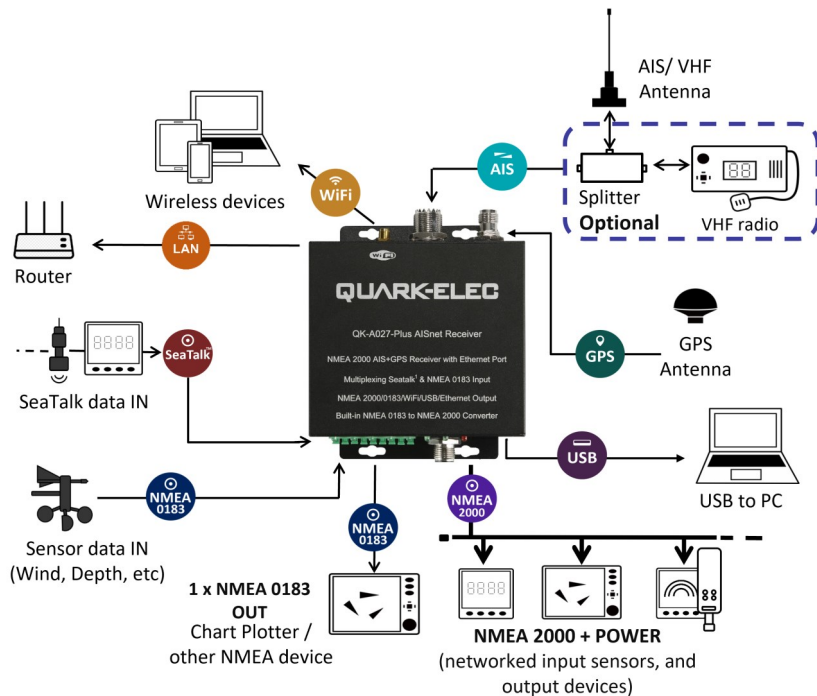
INSTALLATION

1. Mounting: Consider your location…

- Dry, sturdy location 0.5m from other WiFi/VHF equipment.
- Ensure you have the correct length of cables needed. If drilling holes for your cabling, seal around any holes to prevent damage to your vessel or equipment.

2. Disconnect power from NMEA 2000 backbone and disconnect power from all NMEA and SeaTalk[1] devices to be connected.

3. Connect your Antennas: VHF and GPS

- **Connect VHF:** If you want to use one VHF antenna for both the A027+ and a VHF radio (or other purposes), then you will need an active splitter. This splitter will protect the A027+ and other VHF equipment. If you do not use one, the two signals will significantly damage each device connected as well as reducing the signal.

If using two VHF antennas, place them as far away as possible from each other (min 3 metres).

- **Connect GPS if desired:** The GPS antenna should be located outside where the sky is visible for best results.

4. Connect any input/output devices.

- **NMEA 0183 input/output:** Connect the '+' and '-' terminals of the NMEA input/output on the A027+ to the '+' and '-' terminals of the output/input on the instrument.
- The A027+ uses NMEA 0183-RS422. If your connecting device uses the older NMEA 0183-RS232 and you are having issues with your NMEA connection, you may find swapping these terminals works for your device. Alternatively, connect it using a Protocol Bridge (QK-AS03).
- **SeaTalk input:** Take care to connect the '+', 'Data' and '-' correctly. Swapping any of these wires can <u>permanently damage</u> the A027+.

5. Connect the ethernet cable to the RJ45 port if LAN function is needed. A crossover cable will be required if connected to a computer directly, otherwise a straight cable will work for routers or switches.

6. Connect the A027+ to your <u>un-powered</u> NMEA 2000 backbone.

7. Connect the <u>un-powered</u> 12V cable to the A027+, then power up.

8. Re-connect power to your connected devices and NMEA 2000 backbone.

9. Check LED lights are working as expected.

- **SeaTalk[1]** and **NMEA IN LEDs** will flash for each valid message received on the respective device
- **GPS**: LED flashes every second while receiving a valid message.
- **AIS**: LED flashes for each valid AIS message received.
- **N2K**: LED will flash for each valid NMEA 2000 PGN sent out on 2000 port.
- **OUT**: LED will flash for each valid message sent out on the NMEA 0183 output.
- **WiFi**: LED will flash for each valid NMEA message sent to WiFi or Ethernet output.
- **PWR (Power)**: LED light is constantly lit in red when the device is powered.