

POWR SUPPLY

The R041 can be powered from a 12V to 35V DC power supply. Power (V+) and GND(V-) are clearly indicated on the side terminal block. Ensure these are connected correctly. The R041 is equipped with reverse polarity protection to protect the device in case of improper installation.

4G SIM CARD

To get Internet connection via a 3G/4G mobile network, the R041 should have a 3G/4G data SIM inserted, which is registered to a valid mobile operator account.

To insert a SIM card into the router, unscrew the two screws and remove the small cover as shown on the image and insert the SIM card into the SIM card slot. For nano and micro-SIM cards a card adaptor is required (not included with the router, normally comes with the SIM card).

When inserting a SIM card, ensure the SIM card has the correct orientation. Do NOT insert the SIM card at an angle or use force. There is also an SD card slot next to the SIM card slot, the use of this is not currently supported by the firmware.

After inserting the SIM card, power on the R041 to ensure the SIM card works well before replacing the cover. The router will automatically connect to the mobile network, the first LED is the 4G indicator, it will stay on showing that the router is connected to the Internet. The other three are signal strength indicators will turn on if the strength arrive relative level. If the 4G indicator doesn't come on, login to the configuration interface to check if the Access Point Name (APN) needs to be modified.

Please switch off the router before inserting or removing the SIM card.

INDICATION LEDs

The R041 features indicator LEDs which show power, system, WiFi and 4G/3G network strength status. There is also another LED on the front panel, which can be customized as required by the operator.

- * Power: LED light is constantly lit in red when the device is powered on.
- * System: LED light flashes once every second, when the router is working properly.
- * WiFi: LED will flash for each data transaction via WiFi. It will keep steady on when idle.
- * Reserved: This LED can be assigned to a specific status or event by using the configuration interface.
- * 4G/3G signal strength: There are four LED lights: the left LED shows the current network type. Red indicates 2G, green indicates 3G(UMTS) and the orange (mixed green and red) indicates 4G(LTE). The other three LEDs represent the current signal strength. More lit up LEDs mean stronger signal.



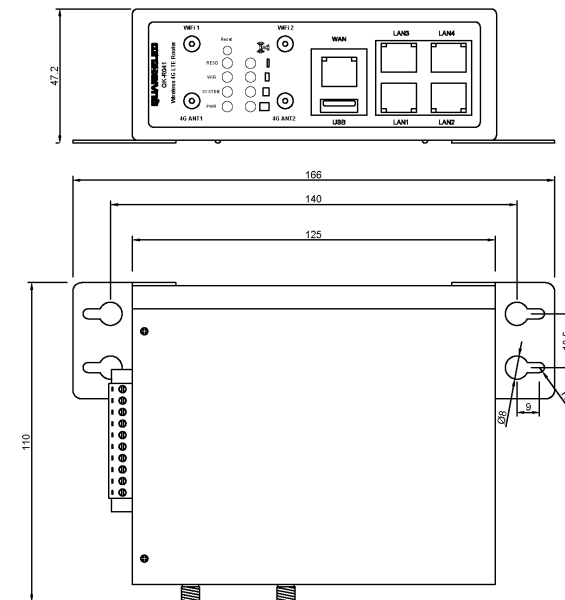
QK-R041 WIRELESS 4G LTE ROUTER

**FAST & LONG RANGE INTERNET ACCESS ON BOAT
MIMO TECHNOLOGY WITH DIVERSITY 4G ANTENNAS**

FAILOVER BETWEEN 4G AND 3G

SERIAL PORT SUPPORTS NMEA 0183 PROTOCOL

SUPPORT UP TO 32 TERMINALS



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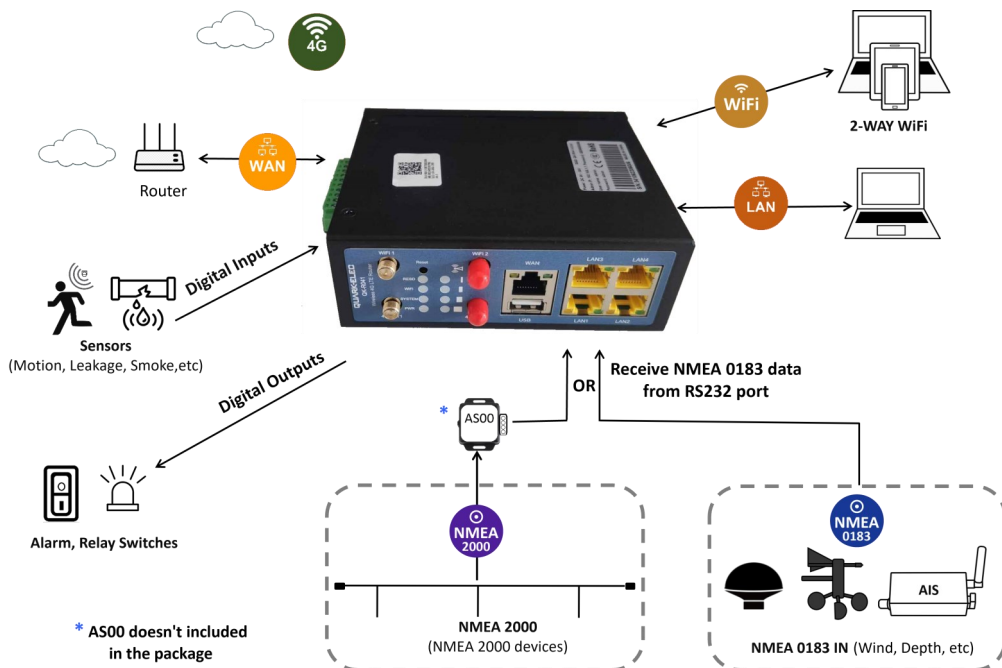
This is an overview only. Familiarize yourself with the manual and the manuals of any connecting devices before installation. It is always recommended that electronic equipment be installed by an experienced installer.

BEFORE YOU START:

The default R041 settings have been carefully selected to work well in most situations. We suggest you not to change at the first time except the following two settings.

- 1) The APN settings for the mobile network of the Data SIM— these must be set to enable the mobile Internet connection.
- 2) The default WiFi settings (SSID and Password) were recommended changing to your preferred name and password. This ensures that only the users who know the login details will be able to connect to the router.

The R041 is configured and controlled via its built-in web interface. In order to access this, you will need a wireless device such as a PC, Mac, tablet or smart phone running a web browser such as Chrome, Safari, Edge or Firefox. Connect your mobile device or desktop to the router's WiFi network. The default SSID is similar to 'QK-R041-xxxx' and the default password is 'QE88888888'. Input '192.168.1.1' into the address bar and press 'Enter'. You will be asked the login ID and password, both of which are 'admin'. Click 'Login', you will be lead to the configuration webpage.



MOUNTING

1. The R041 is not fully waterproof, so it needs to be mounted in a dry place such as behind the instrument panel or a rack. When choosing the right place for it, the most important factor is the quality of the 3G/4G reception. A mobile phone with a signal strength measuring application can be used (e.g., Signal Strength on Google Play store) to test various places inside the boat to see where strong and reliable mobile signal can be received, usually close to a port hole, hatch, or window. The suggested signal strength is at least 3 bars (-90dBm) shown on the phone. On vessels with a fibreglass hull, it should be easy to find a place with good mobile network reception, but if this is not achievable or the vessel has a wooden, carbon fibre or steel hull, then the installation of external fiberglass antennas are recommended. This will allow the R041 to have the best possible receiver range.

2. Apart from the mobile signal strength, WiFi reception and cable runs also need to be considered to find the best possible place for the router. **Please allow a minimum of 0.5m between the R041 and other WiFi devices.** This will help avoid interference problems.

3. The R041 can be mounted in any orientation, as the antennas can be rotated and bent for best reception, although we recommend mounting the R041 on a flat surface with the antennas pointing upwards, in a position to avoid stress on the cables and to ensure condensation doesn't get into the connectors.

4G ANTENNAS

The R041 comes with two SMA 5dBi external indoor 4G/3G antennas. Both antennas have a magnetic base so they can be attached to various ferrous surfaces. The two 4G antennas should be placed at a minimum distance of 20 inches (50cm) from each other to maximise the positive effect of the MIMO technology. There is no need to place the two antennas further apart, since the field tests show that the signal quality cannot be significantly improved by increasing the distance. The 4G antennas should not be mounted near metal objects or close to other high-power transmitting antennas like VHF, HF and SSB antennas. It is recommended to place the 4G antennas at a minimum distance of 40 inches (1.0 meter) away from these high-power transmitting antennas on the boat.

For low power antennas or not near frequency band antennas (e.g. WiFi, GPS, TV), it is recommend to keep a minimum distance of 20 inches (50cm) between antennas.

To have better 4G network reception external 4G fiberglass antennas can be used. The following image shows a wiring example. If longer cables are used to connect the antenna to the router, it must be a high-quality, low loss cable. The cable and any connectors used should have 50 Ohms impedance.

