

QUICK START SET-UP GUIDE



QK A021 - AIS Receiver Dongle with Auto-hopping



SET UP

In the box you should have:

- 1 x QK-A021 v.2.0
- 1 x SMA-BNC coaxial adapter
- 1 x USB extension cable
- 1 x CD with manuals and drivers



Location: Select where your QK-A021 is to be sited, it will need to be close to a device to plug into but it should also not be used close to generators or compressors (e.g. refrigerators) as they can generate substantial RF noise. It is designed to be used in a protected indoor environment and is NOT waterproof. Generally, a suitable placement of QK-A021 is together with other types of navigation equipment and the PC that will be used to display the output data. QK-A021 is designed to be ultra-portable and convenient but should only be used where it is well protected from humidity and water.

Antenna: QK-A021 is not supplied with a VHF antenna as the type of antenna and cable requirements differ from vessel to vessel. A suitable VHF antenna will need to be connected before the receiver will operate fully. AIS communication system frequencies are close to the duplex VHF channels used for marine communication, so the antenna should be separated as much as possible (ideally at least 3 meters) from the voice communication VHF antenna to avoid unnecessary adjacent channel interference. Best separation is achieved by installing the antennas over each other or on separate sides of the mast. If an existing VHF transmitting antenna is used to receive AIS signals, proper separation equipment (e.g., an active VHF antenna splitter) should be applied.



CONNECTIONS

QK-A021 has the following electrical connections/indicators:

- **AIS antenna connector.** Standard SMA female 50 Ohm connector. An active VHF antenna splitter is required if one VHF antenna is shared by QK-A021 and VHF voice radio. (We recommend separate antennas ideally.)
- **USB connector.** A USB connector outputs the AIS messages directly to the connected device. It can also be used for adjusting hopping parameters using the GUI Configuration software.
- **Check the LED lights.** QK-A021 features two LEDs fitted inside the case which indicate power (red) and AIS messages received (green).
 - The red LED indicates power and will flash, three seconds on, three seconds off, when powered.
 - The green LED indicates AIS reception and will flash for every valid AIS message received.

POWER UP

QK-A021 is designed to be powered through the USB connection.

CONFIGURATION

The module can be configured using the Quark-elec **GUI Configuration Application** (See below download link) which is free to download and very straightforward. This enables the operator to specify hopping intervals of 1s, 30s and .25s according to preference and need. Our patented algorithm is likely to pick up more messages, faster than the manual settings but there are certain environments and locations where manual setting may be desirable. An article is available explaining this is on our blog:

<https://www.quark-elec.com/blog/2017/12/20/latest-field-test-of-patented-autohopping-algorithm/>

The Configuration Software (GUI) can be used to adjust these settings, including baud rates and WiFi settings. You can download the software here:

https://quark-elec.com/doc/QE_MUX_configTool.zip

Detailed instructions on how to use the Configuration software are available here:

https://www.quark-elec.com/doc/QK-A0xx_GUI_application_note.pdf

ADDITIONAL INFORMATION AND SUPPORT

Full QK-A021 instructions and troubleshooting details can be found in the full QK-A021 Manual here: <https://www.quark-elec.com/product/qk-a021-ais-receiver-dongle/>

For additional technical information and other enquiries, please go to the Quark-elec forum at: <https://quark-elec.com/forum/> it's often the quickest way to get and answer as many questions have already been answered there.

For sales and purchasing information, please email us: info@quark-elec.com

SPECIFICATION

Item	Specification
Frequency bands	161.975MHz & 162.025MHz
Operating temperature	-25°C to +80°C
Storage temperature	-25°C to +85°C
Average supply current (typical quiescent)	<26mA@5.0V
AIS receiver sensitivity	-105dBm@30%PER

Limited warranty

Quark-elec warrants this product to be free from defects in materials and manufacture for one year from the date of purchase. Quark-elec will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labour. The customer is, however, responsible for any transportation costs incurred in returning the unit to Quark-elec. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. A returns number must be given before any unit is sent back for repair. This does not affect the statutory rights of the consumer.

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.

Quark-elec AIS receivers may be upgraded from time to time and future versions may therefore not correspond exactly with this manual. The manufacturer of this product disclaims any liability for consequences arising from omissions or inaccuracies in this manual and any other documentation provided with this product.

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