

QUARK-ELEC QK-A015-TX Active VHF/AIS Antenna Splitter Instruction Manual

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QUARK-ELEC

QK-A015-TX Manual
Active VHF/AIS Antenna Splitter



Designed in UK



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Features

- 12V-24V powered, low power consumption
- Allows use of a single VHF antenna installation shared between AIS transponder, VHF radio telephone and FM/AM radio VHF failsafe function – VHF radio has full priority and will remain functional, even in the unlikely case that the Splitter would fail or lose power
- Built-in preamplifier provides AIS signal gain (12dB), maximizing the AIS reception range.
- Automatic routing of AIS and VHF transmission
- Uses standard SO239 connector for VHF, AIS, and antenna connections
- LED power and status indicator
- Compact & easy to install. No configuration required

Introduction

The QK-A015-TX splitter allows one VHF antenna to be shared between,

- VHF radio
- AIS transponder and
- AM/FM radio

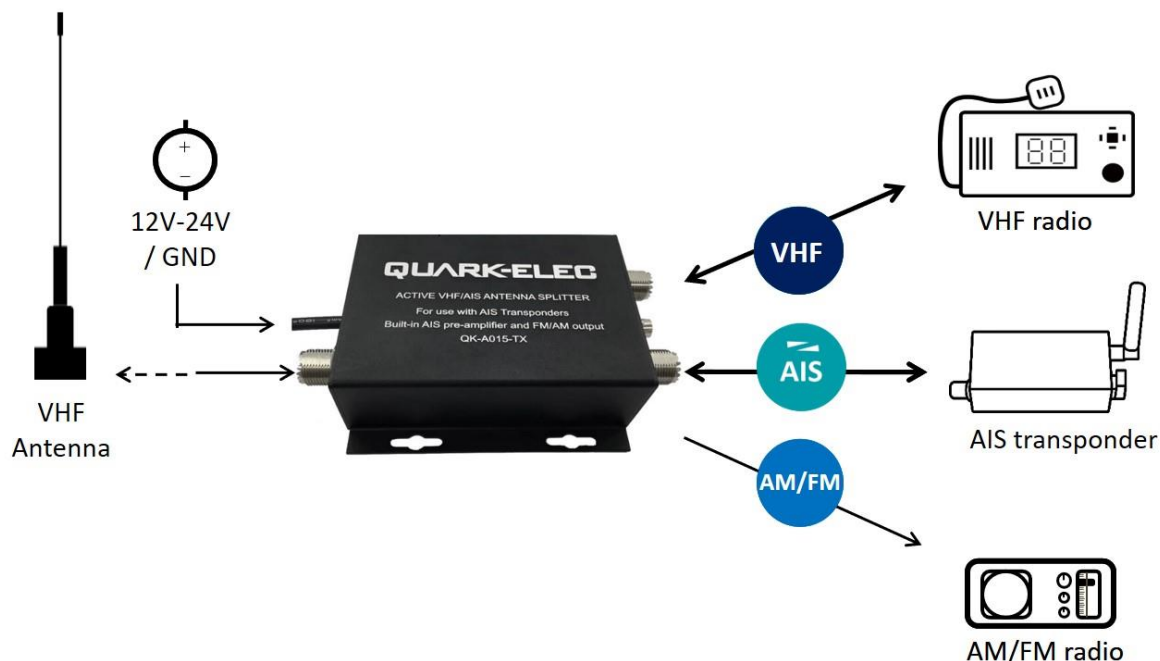
The A015-TX allows the one VHF antenna to provide the following functions:

- Reception of VHF radio, AIS messages, and AM/FM radio.
- Transmission from VHF radio and AIS transponder
- Straight forward connection to all relevant devices, with no configuration required.
- VHF radio always has priority and can always transmit in the case that the power to the splitter fails
- Low power consumption.

The A015-TX is an active splitter. This is an important feature, as, unlike many splitters that cause signal loss, the active splitter actually provides a signal gain. The A015-RX's built-in pre-amplifier amplifies the AIS, VHF, AM/FM signals, thereby increasing the AIS transponder's reception range.

Please note: The A015-TX is compatible with AIS transponders/transceivers. (Though the A015-TX could be also be connected to AIS receivers, the A015-RX is only compatible with 'receive only' applications.)

Connections



The A015-TX has five connections:

- Power cable: 12V-24V DC power
- VHF Antenna: SO239 connector for VHF antenna
- VHF radio: SO239 connector for VHF radio
- AIS: BNC SO239 connector for the AIS transponder
- FM/AM: BNC connector for the output of the FM/AM radio signal

Installation

The A015-TX is a plug-and-play device, with no configuration required.



IMPORTANT: Connect the VHF antenna BEFORE connecting any other devices!

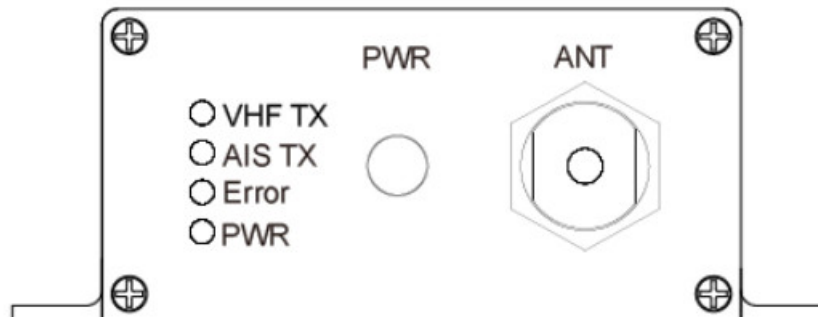
Do not connect powered devices to a splitter until the other steps below have been followed in the correct order. Connecting powered devices to a splitter before the other steps will damage your devices.

1. Remove power source from the A015-TX
2. Remove power source from all devices to be connected
3. Connect the VHF antenna to the Splitter before adding power or any devices.
4. Connect all other devices (unpowered) to the A015-TX (ie. VHF radio, AIS transponder and FM/AM radio)
5. Power the A015-TX

6. Power all connected devices (ONLY do this AFTER following the above steps in the correct order)
7. Checking status LEDs light up when expected

Status LEDs

The A015-TX has four LEDs that indicate power and working status.



- VHF TX: Transmitting VHF radio
- AIS TX: Transmitting AIS
- ERR: Indicates an error (check your Antenna connection)
- PWR: indicates power

The ERR LED will illuminate if the antenna has a short or open circuit. If this happens, de-power the A015-TX immediately. Disconnect all connected devices and check if the VHF antenna is well connected. Then re-follow the steps above. Contact a local installer for professional help if needed.

For safety purposes, the A015-TX has an automatic VHF fail-safe. This means that the VHF radio has full priority and will remain functional, even in the unlikely case that the Splitter would fail or lose power.

Specifications

Item	Specification
DC supply	9.0V to 35V
Average supply current	175mA
VHF and AIS frequency range	156MHz to 163MHz
AIS receive gain	Typical 12dB
AIS transmit insertion loss	$\leq 1.2\text{dB}$
VHF receive insert loss	$\leq 3.0\text{dB}$

VHF transmit insertion loss	≤ 3.0dB
FM/AM receive insert loss	≤ 0.5dB
FM/AM frequency range	88-108/0.5-1.6Mhz
Max input power from VHF port	25W. The VHF antenna must be connected before the VHF radio.
Max input power from AIS port	12.5W. The VHF antenna must be connected before the AIS transponder
FM port impedance	75 Ohms
AIS, VHF and antenna port impedance	50 Ohms
Switching time, receive to VHF transmit	< 100 us
Switching time, receive to AIS transmit	< 100 us
Operating temperature	-10°C to +55°C
Storage temperature	-25°C to +85°C

Limited Warranty and Disclaimer

Quark-elec warrants this product to be free from defects in materials and manufacture for two years from the date of purchase. Quark-elec will, at its sole discretion, repair or replace any components that fail in normal use. Such repairs or replacements will be made at no charge to the customer for parts and labor. 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 obtained before any unit is sent back for repair.

The above does not affect the statutory rights of the consumer. 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-, nor their distributors or dealers accept responsibility or liability either to the products 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- products 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.

Document history


Issue	Date	Changes / Comments
1	22-11-2020	Initial release
	8/4/2021	Manual revision
	17-05-2021	

For technical support and other inquiries, please go to the Quark-elec forum at <https://www.quarkelec.com/forum/> or email info@quark-elec.com

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Documents / Resources

	<p>QUARK-ELEC QK-A015-TX Active VHF/AIS Antenna Splitter [pdf] Instruction Manual QK-A015-TX Active VHF-AIS Antenna Splitter, QK-A015-TX, Active VHF-AIS Antenna Splitter</p>
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