Radioddity QT60 Digital/data mode operation

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About Radioddity

‘You, our friend and customer, are our focus”

At Radioddity, our customers are important to us. As a customer, your time and money are important to you. When you buy radios online, you face a dilemma: buy from a reputable website at a higher price, or try to save money by choosing a retailer that may not offer quality goods, service or advice. At Radioddity.com, you don't have to choose between low prices and a safe shopping experience. Whether you are a first-time shopper or an experienced radio amateur, we always do our utmost to ensure that you get the best possible value for money. Over the past few years, Radioddity has continuously strived to better meet the needs of wireless equipment buyers and has become a reliable partner. We do this by offering the highest quality products at an affordable price and by providing you with first-class support after-sales support as well warranty cover. Because as our customer, you deserve nothing less.

Our promise: To offer you the best shopping experience

Strong partnerships enable us to offer you the latest technologies with an excellent price/performance ratio under the Radioddity brand name. Our experienced and responsive customer service team helps us to deliver on our promise to you and better meet your everyday needs. Whether it's offering you the latest and greatest DMR, HF and analog radios, accessories and related products, providing outstanding technical support or working with amateur radio industry leaders to develop helpful content to assist you with your purchase: Your concern is our concern. We want to provide you with quality radios at great prices. If you feel we are not delivering on this promise in any way, please let us know by e-mail:

support@radioddity.com

1 Preface

Your Radioddity QT60 can support digital/data mode operation (FT8, SSTV, RTTY, etc.) using the built-in VOX modes, without the need for external interfaces. This is a DIY option, and the following information is provided to assist with the creation of a cable that will provide the necessary connections; between a computer running digital/data mode software and the radio.

2 What you will need

There are not many parts needed to get our own data-cable prepared.

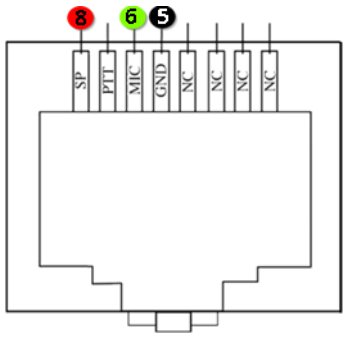
- For the connection to the Radioddity QT60 you will need a "RJ45 terminal adapter" that does make all 8 pins available on screw terminals. We don´t sell those, but you can find them here: http://www.aliexpress.com
- For the connection to your PC, you will either need a shielded stereo audio-cable with 3.5mm TRS plugs on both ends or two shielded open end stereo audio cables with 3.5mm TRS plug.
- If your PC does not have a built-in sound-card you will also need a USB soundcard with 3.5mm TRS sockets for MIC-in and Audio-out.

3 Electrical connection

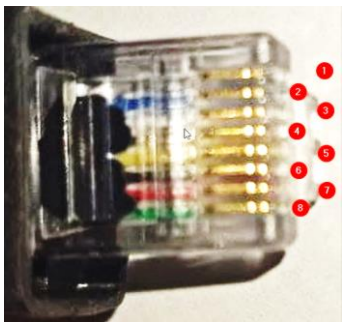
The following example is the most basic form of the cable that can be built. The cable connects between a PC soundcard or an external USB soundcard and the Radioddity QT60 front Microphone connector. This provides all the necessary connections for VOX based digital/data mode operation. The input and output signals will appear on the LEFT channels of the PC soundcard.

The required connections are as follows:

RJ45 Pin	Signal	Computer signal
5	Ground (GND)	Sleeve of 3-pin TRS Audio Out Sleeve of 3-pin TRS Audio In
6	Microphone	Tip of 3-pin TRS audio-out
8	External audio frequency	Tip of 3-pin TRS audio-in

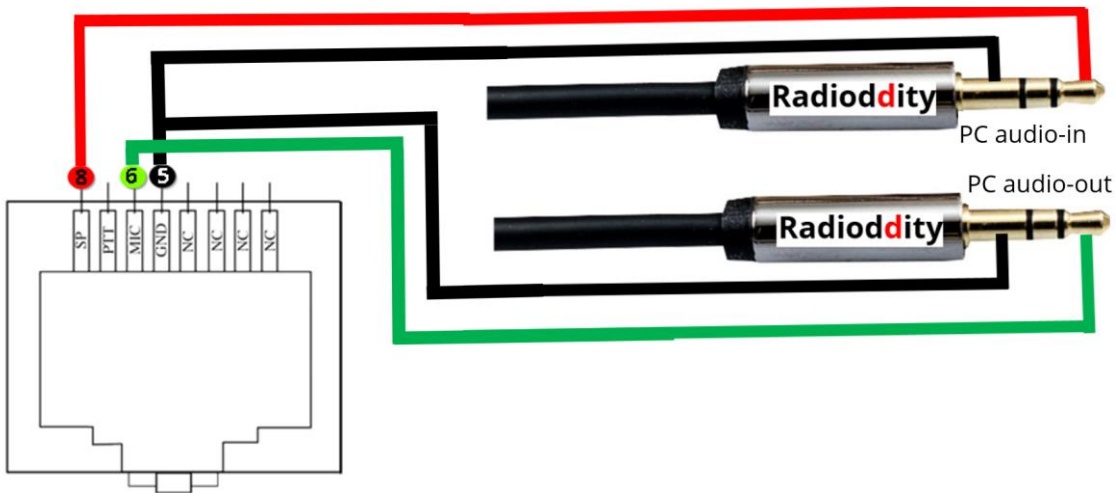


View of the RJ45 plug

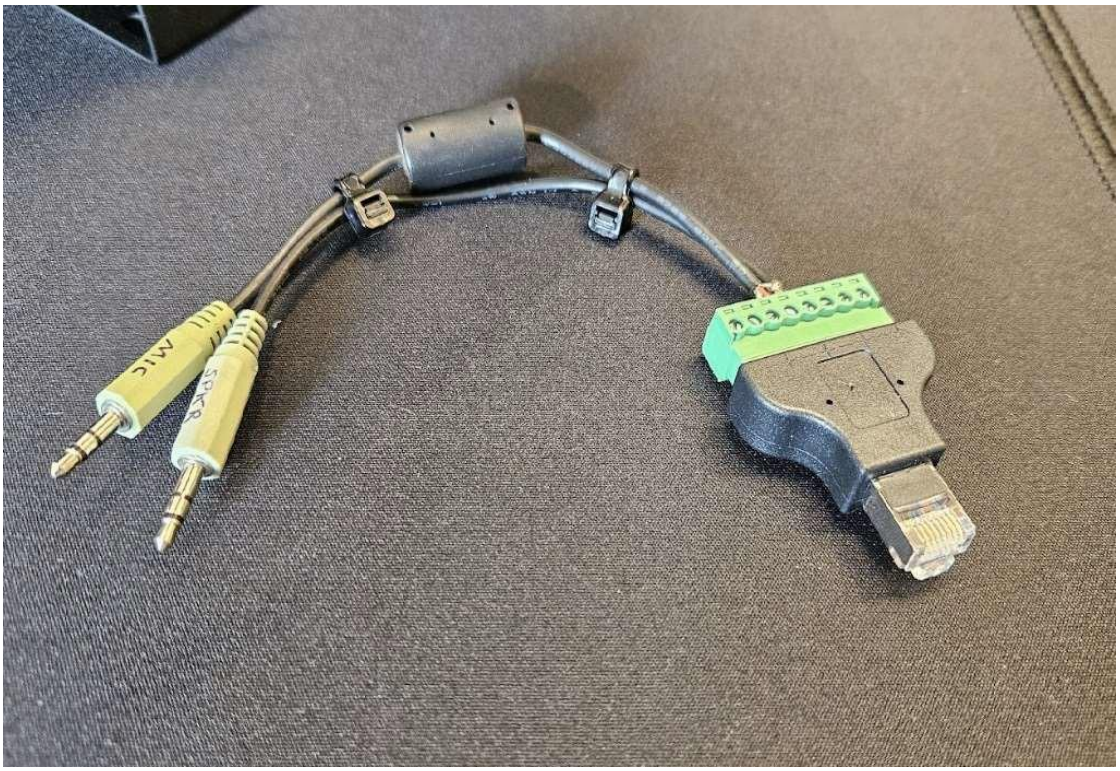


- RJ45 Pin 5 is the ground signal which needs to be connected to both ground connections (audio-in and audio-out of the PC).
- RJ45 Pin 6 is the Radioddity QT60 input signal which needs to be connected to the computer audio-out signal (speaker-out).
- RJ45 Pin 8 is the Radioddity QT60 output signal which needs to be connected to the computer audio-in signal (microphone-in).

The resulting electrical connections of your cable should look as follows:



The wires shown in black color represent the cable shields as well.



4 Radio Menu settings:

The following Radioddity QT60 MENU settings are required/recommended to enable VOX based TX and RX via the Radioddity QT60 front microphone socket. To enter the MENU long press the [MENU] key for 2 seconds and use the channel selector knob to navigate to the required parameter. With careful adjustment of the Radioddity QT60 settings and your PC software settings, good performance can be achieved.

- Menu 01: MIC = Set "Mic Gain" to a low level, adjust as needed.
- Menu 02: MICP = DY
- Menu 03: V/PATH = BOTH or MIC
- Menu 22: V/OXL = A "VOX Level" of 2 or 3 is recommended, adjust as needed. Can also be set to "OFF"
- Menu 23: V/OXT = 1 or 2 is recommended, adjust "VOX delay time" as needed.
- Menu 24: V/-SPK = ON (allows VOX to enable PTT when there is open squelch / RX audio)

5 Notes and tips:

The following recommendations will assist in achieving the best results:

- **Always use LOW RF POWER** for digital/data modes. Many of these modes are high duty cycle TX, and are very efficient only requiring low power for excellent results. High power is not required and will result in higher heat which should be avoided.

- **Isolation**: The DIY cable described in this document is shielded for good results when your PC soundcard levels, and radio are set correctly. "Isolation transformers" may be added to the cable if required to avoid ground loops or interference/noise. The use of clip-on ferrites can also assist with noise or feedback issues, if they occur.

- **Levels**: Check the signal levels to ensure they match the requirements of your PC interfaces and radio equipment. Always start at a low volume/gain levels (Menu 01) and increase gradually as required. Adjust your PC soundcard settings and radio MIC Gain (Menu 01), VOX-L (Menu 22) and VOX-T (Menu 23) to ensure audio is properly transmitted and received. Be aware that any sounds played by your PC might be transmitted with VOX, so always ensure other sound sources are disabled before enabling VOX (Menu 24).

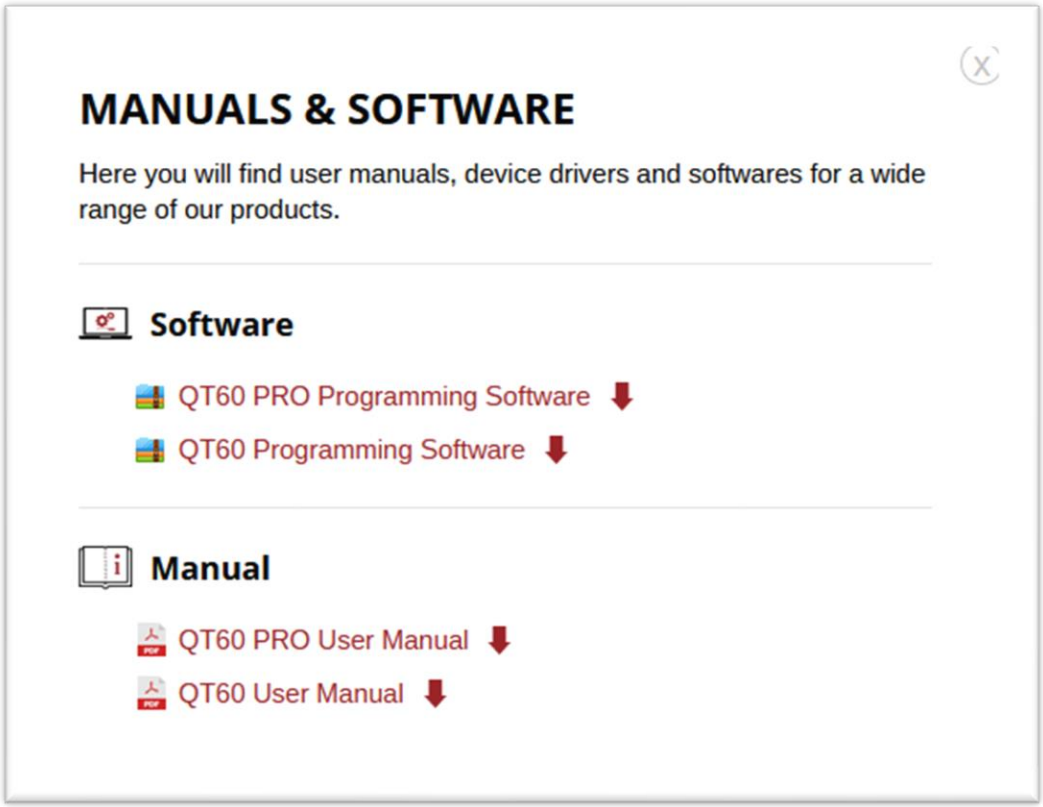
- **Testing**: After making connections, test the setup with your digital mode software. Most software will contain a "VOX PTT" option that should be selected.

6 Radioddity support area

Please note that you can find all firmware, software and user manuals in the support section of our official Radioddity website by following these steps:

https://www.radioddity.com/ → Support → Radioddity → QT60

For the Radioddity QT60, the resulting support page looks something like this:



As soon as a new file is available (e.g., firmware updates, updated manuals or other items), these files will be published in our support area.

Note:	*The list 'Manuals & Software' can be found below the 'Software' section on the website. Use the scroll bar to navigate.*

We would like to thank all Radioddity customers for their constructive feedback.

If you find an error in the firmware of the Radioddity QT60 or in this documentation, or if you miss a function that you would have expected, or even if a detail has not been described to the needed extent, please feel free to write a message to support@radioddity.com. The use of non- Radioddity firmware for this radio is strongly discouraged and may invalidate your warranty.

Thank you for shopping at Radioddity!

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https://www.radioddity.com/

https://www.facebook.com/radioddity

https://www.youtube.com/c/Radioddityradio