Electro-Resales

Getting started with your Crystal Tester/RF Source.

Many thanks for purchasing this simple crystal tester/RF source. The tester is designed to be quickly deployed as a way of testing crystals at home, in the field, in fact anywhere you may need to check that a crystal is functional. Additionally the crystal checker can be a low power (~ 100 uV) source of RF at the frequency of the test crystal.

We appreciate your business and want to ensure that your experience with our products is a pleasurable one. We understand that you want the product to work without fault and that is our wish also. The following hints are designed to help you get up and operational as quickly as possible.

Setup & Use

Refer to the photos in this document to assist you in understanding the tester.

1. **A battery snap suited to a regular 9 volt battery is included and attached to the screw terminals marked 9 VDC, with the red or plus lead in the terminal nearest the top edge of the board. Alternatively a bench 12 volt supply may also be used.**
2. **The crystal under test is either directly connected to the screw terminals marked test, or a pair of clip or test leads can be screwed here and used to connect to the crystal under test. This is particularly suited to testing larger footprint crystals such as the FT243 case style.**
3. **With power applied and a crystal connected the onboard LED lights if the crystal oscillates, indicating that the crystal is functional; no led lighting indicates the crystal has an issue or is broken. A crystal is included in this sale to allow initial testing.**
4. **Attaching a suitably terminated lead to the RCA connector allows the frequency of the crystal oscillator to be monitored on a frequency counter or be applied to the antenna coax port on a radio**

Photo # 1 Connecting power to the tester

Photo # 2 testing a crystal/LED ON

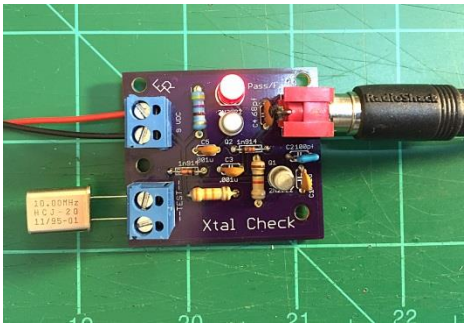
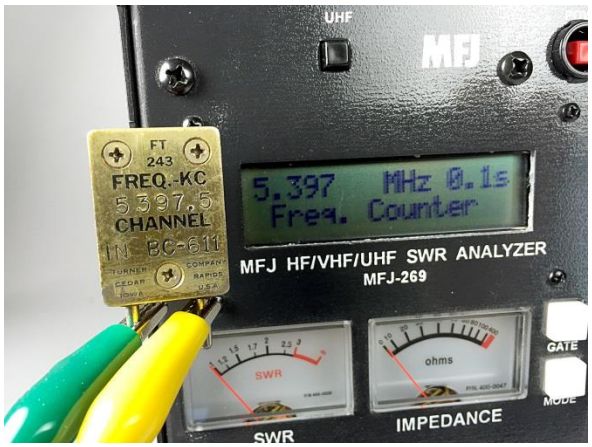


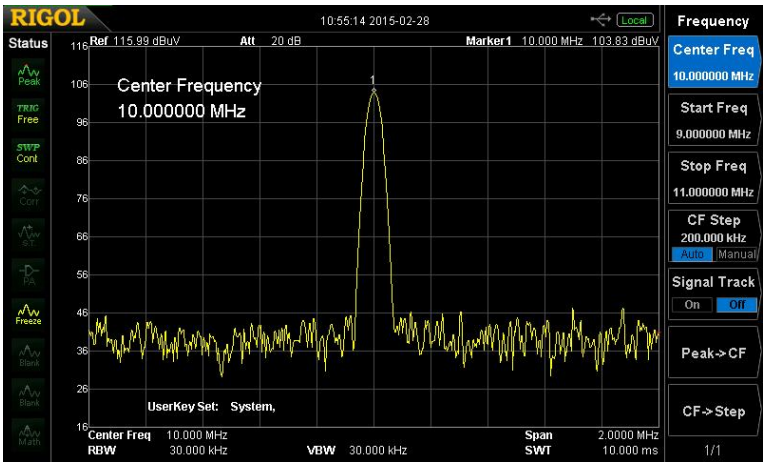
Photo # 3 Measuring Frequency of a FT 243 style crystal



Connect an RCA terminated cable to the RCA socket on the checker board, attach the other end to your measuring equipment. Remember at RF to use short shielded cables at all times

Note: Test clips shown in this photo are not included in this sale.

Photo # 4 Analyzer* output measured for a 10 MHz crystal



Measuring the output of the crstal checker when a 10 MHz crystal is attached to the board

***Rigol Spectrum Analyser modelDSA 815**

LIABILITY DISCLAIMER

A person who constructs or works on electronic equipment may be exposed to hazards, including physical injury, the risk of electric shock or electrocution.. These hazards can result in health problems, injury, or death. Only qualified persons who understand and are willing to bear these risks themselves should attempt the construction of electronic equipment. By purchasing this item, the buyer acknowledges these risks.

There is a risk of electric shock, electrocution, burns, or fires that is inherent in the construction and use of electronic equipment. By purchasing this item, the buyer acknowledges these risks.

IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE including, but not limited to, property damage, personal injury, death or legal expenses. Buyer's recovery from Seller for any claim shall not exceed the purchase price paid by Buyer for the goods, irrespective of the nature of the claim, whether in warrant, contract or otherwise. By purchasing this item, BUYER AGREES TO INDEMNIFY, DEFEND AND HOLD SELLER HARMLESS FROM ANY CLAIMS BROUGHT BY ANY PARTY REGARDING ITEMS SUPPLIED BY SELLER AND INCORPORATED INTO THE BUYER'S PRODUCT.

Appendix 1

A note about output frequency accuracy;

The crystal checker is based on the Colpitts oscillator design. This design ensures a highly stable signal that reflects the frequency of the attached crystal to a measured accuracy of +/- 0.05% of the crystal frequency.

What this means is that for a crystal that is marked with a frequency of 16 MHz, may measure 15.992 MHz on the lower side or 16.008 MHz on the higher side.

If it is desired to ‘tweak’ the frequency to bring the oscillator output closer to the frequency marked on the crystal, a trimmer capacitor with a max capacitance of 50pF may be placed in series with the ground side of the test crystal, on the supplied board this is the terminal nearest the board edge. Adjusting the trimmer will allow the oscillator frequency to be ‘pulled’ a little and accuracy of the output increased.