QRPworks

Stay Tuned™

Manual

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Overview

This manual describes how to use the QRPworks ***Stay Tuned*** VSWR and Power meter.

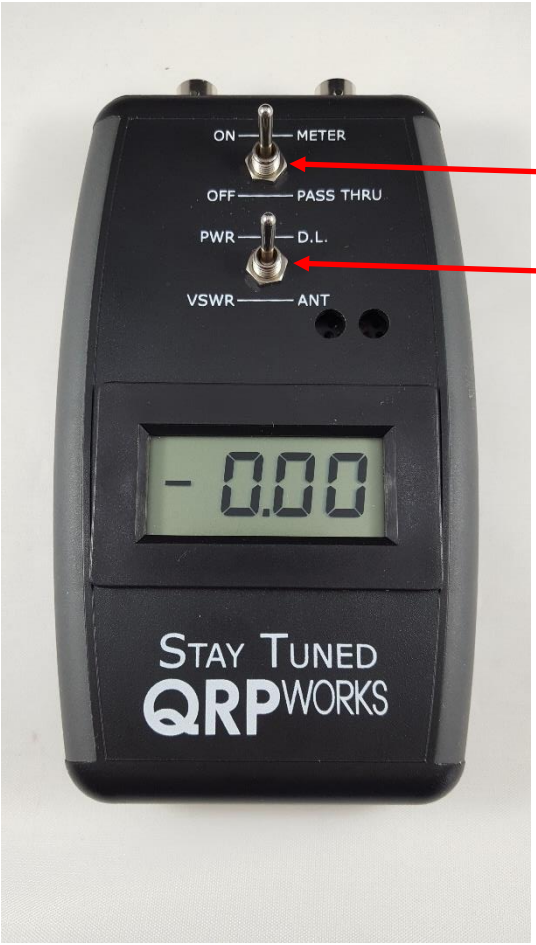
Stay Tuned provides a number of functions in a lightweight, portable package:

- Measures VSWR
- Provides an audible tone to help you tune your antenna without needing to read the VSWR display – great for tuning mag loops
- Protects the rig from high SWR
- Measures transmitter Power Out into an internal 16 watt dummy load.
- Zero power consumption in the Pass Thru mode
- Can be left in circuit at all times

Scope

Stay Tuned can be used with any transmitter (15 watts maximum) and antenna.

Switches and Connections



Up: ON
Down: Off / Pass Thru

Up: Measure Power
Down: Measure VSWR

Speaker On/Off
(ON: right, OFF: left)

Antenna Connection

Rig Connection

9 Volt Battery Compartment

Functions

When ***Stay Tuned*** is switched ON, it may be operated either as a Power meter or VSWR meter.

When ***Stay Tuned*** is switched OFF, it is out of the circuit and signals pass-thru.

Note: Before using, connect a 9 volt battery to the battery clip in the battery compartment.

Use as a Power Meter

Switch Positions:

- ***ON - METER***
- ***PWR - D.L.***

With the On/Off switch in the **ON** position and the Mode switch in the **PWR** position, a 50 ohm, 16 watt dummy load is switched in, and the connection to the Antenna is disconnected. This permits testing of a QRP transmitter without radiating QRM.

The accuracy of the power meter is typically 2% or better from 100 mW to over 10W.

Maximum power is 15 watts. If forward power exceeding 15 watts is applied, the speaker generates an unpleasant 'raspberry' sound,

In the Off / Thru Mode, ***Stay Tuned*** power is off, no sound will be heard, and the device is in a pass-thru mode.

Use as a VSWR Meter

Switch Positions:

- ***ON - METER***
- ***VSWR - ANT***

With the On/Off switch in the **ON** position and the Mode switch in the in the **VSWR** position, a resistor bridge type circuit is switched in. This inserts 6 dB of attenuation between the QRP rig and antenna, which limits the VSWR presented to the rig to less than 2:1 during tune-up into an unknown antenna. This is a valuable feature for use with QRP transmitters that lack any VSWR protection.

Once the VSWR of the antenna circuit has been minimized, ***Stay Tuned*** should be switched **OFF** to remove this attenuation.

If ***Stay Tuned*** is operated in the VSWR mode with no applied power, you will notice the display will slowly increment up or down. This is due to the analog mathematics of the device attempting to calculate the ratio of forward and reflected power, which are both zero.

The accuracy of the VSWR meter is typically 5%, so that at minimum VSWR, the meter may read something other than 1.00. Tuning for the smallest number will, nonetheless, provide a 50 ohm match.

Tuning by Audio

In addition to the VSWR meter, ***Stay Tuned*** adds a unique audio tone that adds to its usability. In the VSWR mode, when forward power exceeds about 150mW, it generates a steady tone whose pitch is proportional to VSWR. This makes tuning for minimum VSWR an easy and intuitive process if you aren't able to watch the display while you tune - you just tune for the lowest pitch, and you are there. This is helpful when adjusting any antenna, and especially helpful when tuning magnetic loops.

Whenever the SWR passes thought 2:1, a beep will be heard in addition to the SWR dependent tone. This is especially useful to sight impaired users and allows users to know when the SWR is below 2:1.

The audio tone has third important function. In either the VSWR or Power Meter mode, it emits a harsh warning tone if you exceed 15W applied to the meter, indicating the power needs to be reduced.
You can adjust the volume of the tome using the volume control on the side of ***Stay Tuned***.

If you'd like to turn the audio off, slide the speaker switch, located to the left of the ANT BNC connector to the left, towards the left edge of Stay Tuned.

Use for Normal Transmitting & Receiving

Switch Positions:

- ***OFF – PASS THRU***
- ***PWR – D.L.*** *or* ***VSWR–ANT***

Switch ***Stay Tuned*** off for normal transmitting and receiving.

In the **OFF – PASS THRU** position, power is off, no sound will be heard, and the device is in a pass-thru mode.

There is no need to physically remove ***Stay Tuned*** from the transmission circuit when it is off.