

THE TRIPLE RATIO SWITCH BALUN TRSB™

The Buddipole™ Triple Ratio Switch Balun (TRSB)

The Triple Ratio Switch Balun provides isolation for balanced or unbalanced antennas and impedance matching over the 9 to 75 ohm range. A three position switch instantly selects between 50:50, 50:25 and 50:12 ohm configurations. The TRSB is ideal for loaded dipoles, verticals, mobile antennas and beams. Used in conjunction with the Buddipole it increases the flexibility of the system and facilitates operation on the lower bands such as 40, 60 and 80 meters. The TRSB operates from 1.8 to 30 mhz at power levels up to 100 watts.

The impedance ratio settings are 1:1, 2:1, and 4:1 providing impedance transformations of 50:50, 50:25 and 50:12 ohms. The TRSB provides impedance matching for antennas from 8 to 75 ohms at 1.5:1 or better SWR by selecting from three different positions on the knob located on the front of the balun. Isolation for either balanced or unbalanced antennas will eliminate or significantly reduce any current flow on the outside of the feedline.

The power-handling capability of this balun exceeds 100 watts. This has been tested by running a Buddipole on CW and then checking for heat. Heat rise in the wires on the cores has been barely detectable.

The frequency range of the TRSB is from 1.8 mhz to 30 mhz.

Adjustment Procedure

Start with the settings noted on the opposite side of this information sheet. If you are setting up for the first time and if you have use of an antenna analyzer, by all means use it.

Check the resonant frequency according to the charts. Go for the lowest SWR. If this frequency is lower or higher than desired, first make the adjustments with the coil taps or the whips to get the antenna to resonate. Then select among the three balun settings which are printed on the front of the TRSB. Choose the lowest SWR reading.

Remember that with a short dipole, when you raise the antenna from adjusting it at eye level, the resonant frequency will also go up slightly. Just keep that in mind when you are tuning up.

Note:

If you've been unable to achieve low SWR (Standing Wave Ratio) when trimming or adjusting your antenna, you may be suffering from impedance mismatch, unwanted common mode feedline current, or both. The TRSB is very effective at solving those problems.

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The TRSB Settings for the Standard Stainless Steel Whips

Buddipole up 9' above ground. 25' of coax. Whips out fully for each of the tap settings shown below.

TRSB SETTINGS				
<i>Bands</i>	<i>Number of turns in from whip end RED SIDE</i>	<i>Number of turns in from whip end BLACK SIDE</i>	<i>Ratio</i>	<i>Whip settings</i>
40 METERS	37	No Tap	4:1	<i>Start at above tap settings. Use the tap on the RED coil to go down in frequency, or shorten whips equally to go up the band.</i>
30 METERS	21	22	4:1	
20 METERS	12	11	4:1	<i>push each whip in 1 inch</i>
17 METERS	7	7	2:1	
15 METERS	5	5	2:1	
12 METERS	3	3	2:1	<i>push each whip in 3 inch</i>
10 METERS	1	1	2:1	<i>push each whip in 3 inch</i>

With the TRSB it is not necessary to make one side of the antenna longer than the other to get a match, as we do with our standard Buddipole setup (OCF, or "off-center fed" dipole). Instead, we use the TRSB to transform the feedpoint impedance up to 50 ohms. As an example, on 40m the feedpoint impedance of the Buddipole is typically very near to 12 ohms. Using the 4:1 ratio on the TRSB, the ratio is transformed to very near a 50 ohm match.

THE TRSB SETTINGS FOR THE 4 SECTION SHOCK-CORDED WHIPS				
<i>Bands</i>	<i>Number of turns in from whip end RED SIDE</i>	<i>Number of turns in from whip end BLACK SIDE</i>	<i>Ratio</i>	
40 METERS	31	31	4:1	
30 METERS	17	18	4:1	
20 METERS	9	9	2:1	
17 METERS	5	5	1:1	
15 METERS	3	3	1:1	

TRSB and 25' of coax. Buddipole up 9' above ground.