

Scope RF Trick

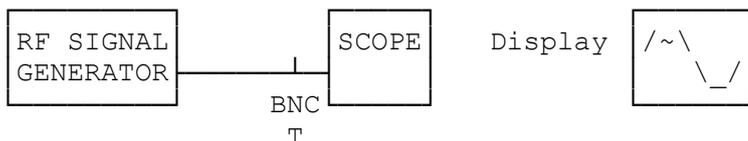
By G8MNY

(Updated Apr 11)

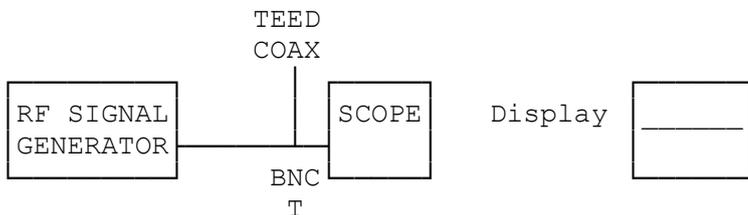
(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

A few years ago at my local club we had demonstrated an impossible wooden transformer, that did all its should do!

I recently got a 100MHz scope going & using it for demonstrations, I found quite a convincing RF trick, that even experienced hams are initially fooled by.

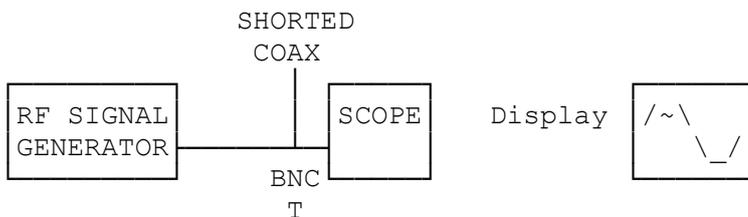


Connecting this arrangement, no one is surprised the scope displays a sine wave. But adding a short length of coax teed to the scope...



Making the teed coax quite a short length & the pure OSC frequency set to make that an electrical 1/4 wave. The scope displays nothing! Many wrongly think the teed coax must be a DC short!

But shorting the end of the coax out, the sine wave magically reappears!



This is the opposite to intuition & many are confused as to what is going on. Only when the frequency of around 70MHz (for my short coax) is noted, does the penny drop!

USES

This of course is a very usefull method of measuring the velocity factor of a cable (0.6 to 0.8 the speed of light) as well as the losses. Only low a loss cable will produce a good nul, & of course a good sine wave oscillator!

See my Tech bul on "Tuned Circuit Scope Demo", "Spectrum Harmonic Demo circuit" "Oscilloscopes".

Why Don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP