

K9AY Loop FAQs

RF Feedback and RX front ends

*My radio is an IC-756PROII, driving an Alpha 76A amplifier (1500 watts
> out)
> and I did have feedback from the loop that distorted my transmit
signal.
> I
> did modify my PROII so the receive antenna is disconnected during
transmit
> and the problem went away.
>
> de Paul, W8AEF
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The preamp in the AYL-4 is basically a one watt power amplifier (a 2N3866 -- like a 2N5109 but higher voltage rating). It's more rugged than most RX front ends, and with 17-18 dB gain it can deliver a pretty hefty signal to the RX input if the loop picks up significant RF from the TX antenna.

As Paul found, receivers that disconnect the external antenna input during TX are usually OK. In a few cases where the loop and TX antenna are quite close, the AYL-4 itself needs protection. When in doubt, run tests with gradually increasing power -- with preamp switched in and out.

73, Gary
K9AY

Comparisons to Beverage antennas

Gary, K9AY, has made life simpler for us. I sprung for the model AYL-4. This includes a 4-direction loop system. The switch box contains an 8 position switch to remotely change the value of the termination resistor out at the antenna to optimize the F/B for each band of interest. When the preamp switch is moved to "on," you get a high-quality 15 db preamp, a filter with a passband from 1.75 to 4.5 mhz +/-2db, and stopband filters at -55 db @ 7 mhz, and -50 db below 1450 khz. If you want to listen below 160m or above 5 mhz, you just leave the filter/preamp switch off. This antenna is a joy to install, (requires one old man, and some planning) and meets the advertized specs.

I am very pleased with the high-quality of the materials and workmanship in all of Gary's products that I own. The AYL-4 will beat a 600' Beverage on rare occasions (like last Friday night) and is a great addition to my RX arsenal.

((73))

Phil Clements, K5PC

Gary on Vactrols

I have recently confirmed that the use of a Vactrol is highly overrated. An examination of Vactrol data shows poor temperature stability as well as resistance drift over time. I believe that much of the "tuning" observed by Vactrol users is simply re-adjusting the voltage to correct for the drift.

I have just begun manufacturing the AYL-4 K9AY loop system with 8 selectable termination values (incremental values, not continuously variable). I performed extensive tests on the new system and found that my own loop only needs two settings, one for 80M and the next lowest resistance for all lower frequencies.

Remember, the termination resistance does not "tune" the antenna or change the location of the nulls. The termination only optimizes the depth of the null, which may require slightly different values at different frequencies.

The optimum termination may change seasonally with varying ground conditions. Adjustable termination is also handy if you build a K9AY loop with a different size or shape than the published design (such as the extra directions in the 8-way system).

BTW, the 8-direction system does not have a narrower front lobe, but it does allow a null every 45 degrees, which can be useful.

73, Gary
K9AY