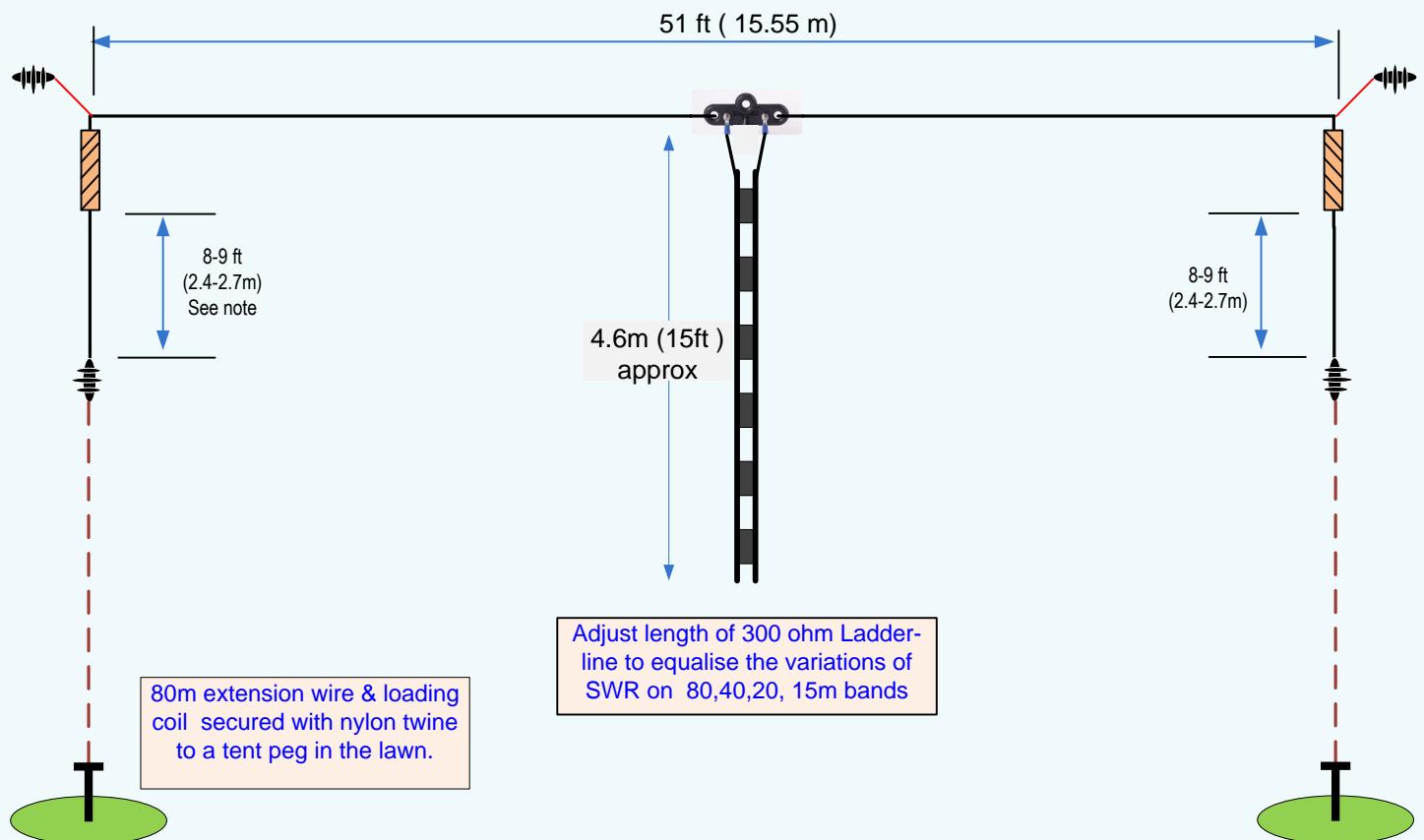
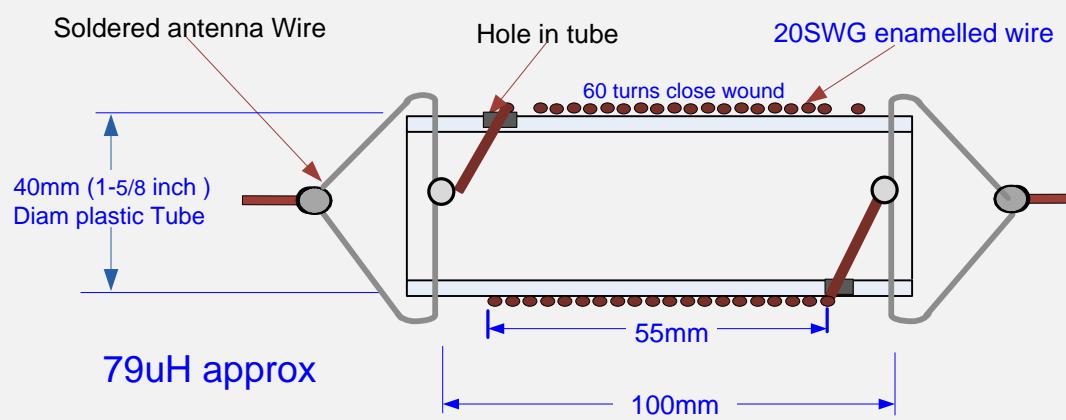


Half-size G5RV – 80m conversion for a small garden

also known as G5RV-Jnr



Loading Coil Construction

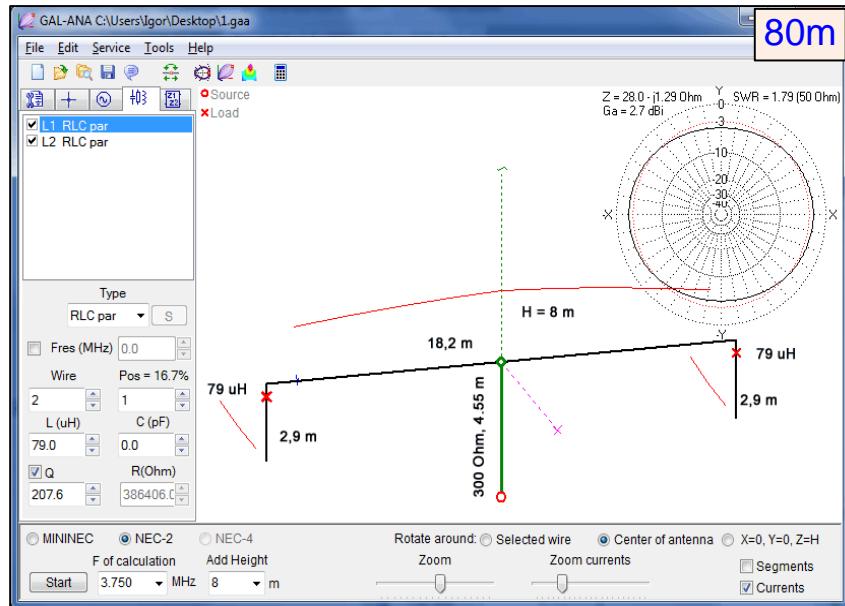


NOTE:- The loading coils and the end wires extend the operation of the half-size G5RV antenna to the 80m band. The end wires should be trimmed for resonance on the required part of the 80m band.

Trimming of the extra wires is critical so start long and trim about 1cm (0.5ins) approx. at a time.

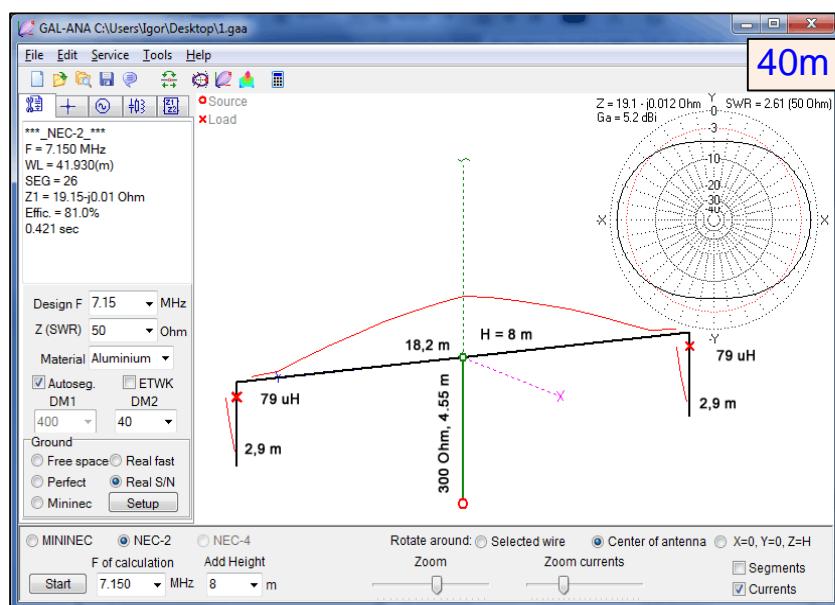
Half-size G5RV – 80m conversion for a small garden

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The Half-size G5RV antenna model[#] extended to 80m provided by DL2KQ

The screen shots show the antenna model current distribution at a height of 8m connected to a $50\ \Omega$ source via a 4.55m matching section of 300Ω transmission line ($VF=0.82$). The NEC2 modelling engine used the Sommerfeld-Norton ground to calculate the results. The values for impedance, SWR and gain of the antenna are shown in the top right hand corner.



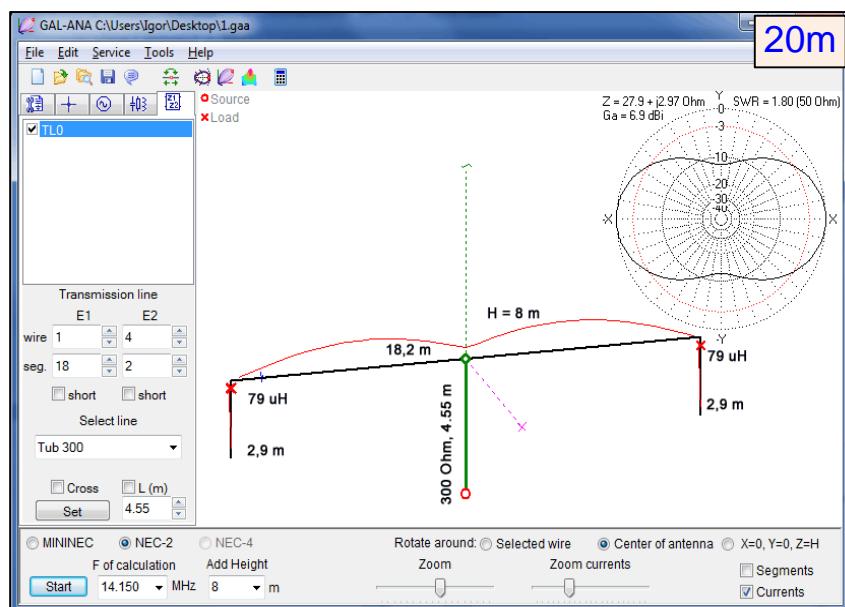
The antenna exhibits a fairly low impedance on all three bands and the SWR is between (1.79-2.61) : 1 ref 50Ω .

The model shows that there is a significant amount of current flowing in the extension wires on 80m as expected since the wire in combination with the $79\mu H$ inductor resonates the antenna in this band.

Since the coil behaves like a choke to RF current on the other bands, means the antenna has similar characteristics to an unmodified half-size G5RV.

On the 40m band the small amount of current that flows in the two end wires is due to the 3547Ω reactance of $79\mu H$ coils at 7.15MHz and because of the high voltage at the ends of the antenna. The current virtually disappears on 20m since the reactance doubles in value.

The far field radiation plots in the top right hand corner of each diagram show that as the frequency increases the antenna becomes more directional.



using the antenna modelling program
GAL-ANA Beta ver 0.3 written by DL2KQ