

RA6790GM (R-2174(P)/URR) Noise Blanker, Mod 2

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In my article, "RA6790GM (R-2174(P)/URR) Noise Blanker," which was published in DX News Vol. 62, No. 22 [sic] - March 20, 1995, pages 43-44, I described a noise blanker for the 6790 using the Allegro Microsystems ULN3846A IC. Subsequent comparison of the 6790 noise blanker with the Drake R8 noise blanker (which uses the Allegro IC) has led to three improvements which can be made to my original 6790 noise blanker. First, in CW and SSB modes it was observed that a weak but distinctive buzz remained after noise pulses had been blanked in the 6790, but not in the R8. Inspection of the R8 schematic revealed a feature which I had not noticed before: the R8 automatically disables the audio gate of the Allegro IC when in CW and SSB modes. The audio gate part of my original 6790 noise blanker circuit was removed, and the weak buzz in CW and SSB modes was eliminated from the 6790. No change in blanking effectiveness for AM mode has been observed in the 6790 with the audio gate part of the circuit removed. Second, the blanking effectiveness of the 6790 noise blanker in AM mode is improved for some combinations of signal levels and noise pulses by using a wider filter ahead of the noise blanker. Currently I am using a Murata CFL455G3 www.surplussales.com/Filters/Filters-1.html with nominal 6 dB bandwidth of about 13 kHz and 60 dB bandwidth of about 20 kHz, which is similar to the bandwidth of the R8 cascaded 45 MHz crystal filters ahead of the R8 noise blanker. Third, the tuned 455 kHz IF transformer in my original 6790 noise blanker circuit has been removed and replaced by a broadband transformer. This seems to have no effect on the effectiveness of the noise blanker, but should improve the strong signal handling performance of the U-310 common gate amp, and simplifies alignment of the noise blanker.

A schematic reflecting these changes is given below. For addition details, refer to the original article www.nrcdxas.org/catalog/reprints/ which appeared in DX News.

