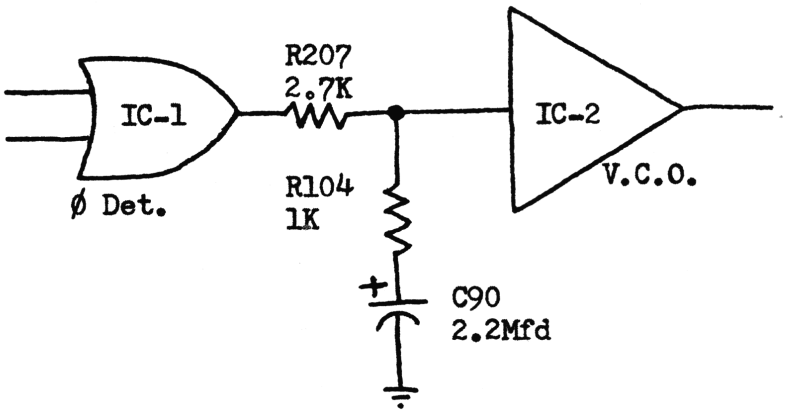
LOOP FILTER-WHAT IS IT??

Ever since the Digi-Scan Frequency Controller became available we became aware of the 10K-10mfd, "Loop Filter" and it's associated problems.

Below is a loop filter circuit from the Cobra 148GTL:



As simple as it might seem, the loop filter is the single most important part of the PLL system. It determines the "Settling Time" and the "Damping" of the loop. In diagram, R207 and C90 determine the Settling time. The ratio of R207 to R104 determine the Damping. R104 will be between 10-33% of R207. If R104 is too small, bounce, overshoot or oscillation might result. If R104 is too large, the loop may take a long time to lock in on a new frequency input. When divide by N counters are used, a long settling time is needed. A high quality, low leakage type capacitor must be used for C90....

COLOR CODE GUIDE FOR CHOKES

Black - - - 0	Multiplier Band
Brown - - - 1	
Red - - - - 2	Black - - X1
Orange - - 3	Brown - - X10
Yellow - - 4	Red - - - X100
Green - - - 5	Orange - - X1000
Blue - - - 6	
Violet - - 7	
Gray - - - 8	
White - - - 9	

MIL SPEC I.D. is a wide Silver band (or large dot on a small unit), at the end of the coil.
Three narrow bands (or small dots), will follow:

If the 1st or 2nd band is Gold, value is less than 10UH, and the remaining are the specific value figures...
Above 10UH, the first two bands are specific value figures, the 3rd band is the multiplier, and 4th band of Silver will indicate a 10% tolerance...