

FERRITE CORES FOR RFI SUPPRESSION

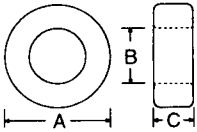
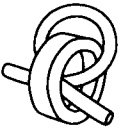
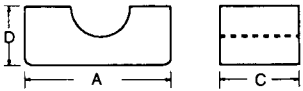
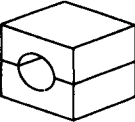
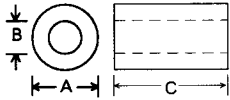
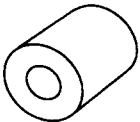
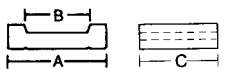
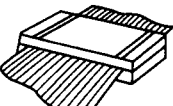
Following is a list of large size Ferrite Beads (FB), Ferrite Toroidal Cores (FT), and Split Ferrite Cores (2X), all of which are extensively used for RFI problems involving multiple wire bundles, coaxial cables, microphone cables, AC cords, and computer ribbon cables. These larger ferrite beads and toroidal cores can provide larger ID to accommodate the larger diameter coaxes and wire bundles.

The 43 material is a good all around material for most RFI problems. However the lower frequencies from .5 to 10 MHz. can best be served with the 'J' material. The 77 material can provide excellent attenuation of RFI caused by amateur radio frequencies from 2 to 30 MHz. and the 43 material is best for everything above 30 MHz. However, it is still very effective across the entire amateur band but not quite as good as the 77 material. The 73 material is specifically a ferrite bead material having a permeability of 2500 and can provide RF attenuation very similar to the 77 core material.

When more impedance is needed (with any bead or core) use additional cores on the same conductor or a core with a large enough ID to accommodate multiple wire turns. When additional cores are added, the impedance will be additive, but when additional wire turns are added the impedance increases as to the number of turns squared.

Split beads and 'bars' are also available so that they may be installed without removing the end connector from the cable. Split bars are especially designed for computer ribbon cables. They are presently available for 1.3", 2.0" and 2.5" computer ribbon cables. Two or more may be used on the same cable to increase the impedance.

Shown below are typical impedances in ohms at 25 and 100 MHz with only one pass through the core.

| | Part Number | A dim. (in) | B dim. (in) | C dim. (in) | 25 MHz | 100 MHz | |
|---|---|-----------------------|-------------|-------------|--------------|---------|---|
|  | FT-50B-43 | .500 | .312 | .500 | 56 | 90 |  |
| | FT-50B-77 | .500 | .312 | .500 | 74 | 60 | |
| | FT-114-43 | 1.142 | .750 | .295 | 27 | 47 | |
| | FT-114-77 | 1.142 | .750 | .295 | 35 | 29 | |
| | FT-140-43 | 1.400 | .900 | .500 | 47 | 75 | |
| | FT-140-77 | 1.400 | .900 | .500 | 62 | 50 | |
| | FT-193- J | 1.930 | 1.250 | .625 | below 10 MHz | | |
| | FT-240-43 | 2.400 | 1.400 | .500 | 58 | 108 | |
| | FT-240-77 | 2.400 | 1.400 | .500 | 76 | 66 | |
| | <p>Note: All of the above size cores are available in the 'J' material which will be most effective if the troublesome frequency is below 10 MHz.</p> | | | | | | |
|  | 2X-43-251 | .590 | .250 | 1.125 | 171 | 275 |  |
| | 2X-43-151 | 1.020 | .500 | 1.125 | 159 | 245 | |
| <p>Also see page 60 on "Round Cable Suppression Cores" for more selection</p> | | | | | | | |
|  | FB-43-1020 | 1.000 | .500 | 1.120 | 155 | 235 |  |
| | FB-77-1024 | 1.000 | .500 | .825 | 25 | - | |
| | FB-43-5621 | .562 | .250 | 1.125 | 171 | 250 | |
| | FB-77-5621 | .562 | .250 | 1.125 | 50 | - | |
| | FB-43-6301 | .375 | .194 | .410 | 55 | 48 | |
| | FB-77-6301 | .375 | .194 | .410 | 73 | 59 | |
|  | 2X-43-651 | for 1.3" ribbon cable | | | 97 | 200 |  |
| | 2X-43-951 | for 2.0" ribbon cable | | | 105 | 285 | |
| | 2X-43-051 | for 2.5" ribbon cable | | | 90 | 250 | |