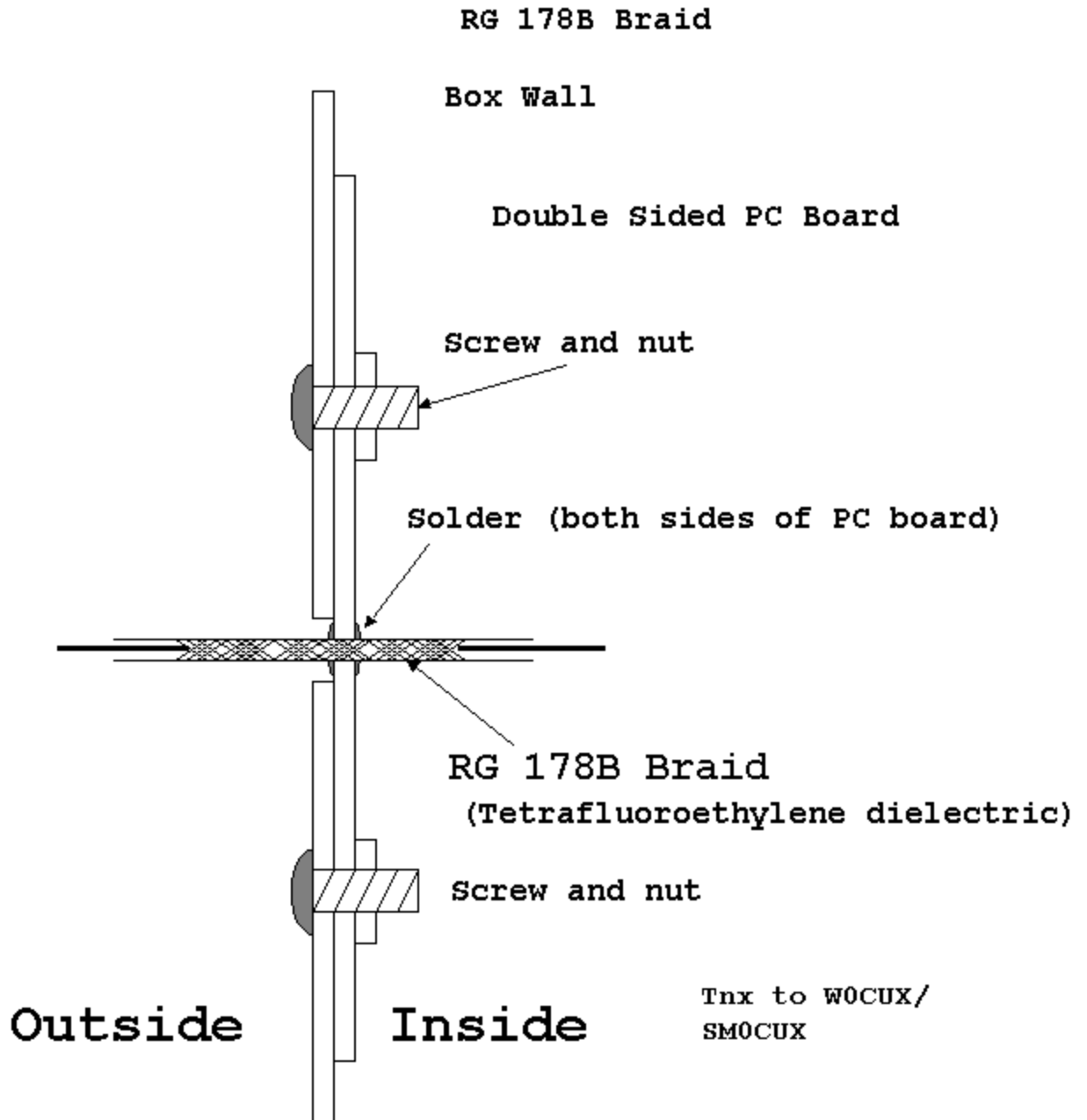


Routing Coaxial Cable Through a Metal Wall.

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The usual scheme for routing coaxial cable through a metal wall is with a suitable coax connector. Unfortunately, coaxial connectors can be quite expensive, especially when used in the quantity needed for RF instrumentation. Here is a scheme suggested by Ulf Edlund, W0CUX/SM0CUX, that eliminates the connector. He traces the scheme to K5AM who used it in a homebrew transceiver described in QEX. The cable routing details are shown in the figure:



The key to this method is the use of a suitable cable. Ulf used RG 178B, which has a Tetrafluoroethylene dielectric. This is essentially Teflon, which I believe is a DuPont trademark. The high temperature core allows the braid to be easily soldered to the double sided PC board. RG178B is a small diameter 50 Ohm coax, so small holes are used. Use a #51 drill bit to make the hole in the PC board. A larger hole is used in the metal wall, providing room for the solder. It is important to solder both sides of the board to the coax.

This coax type is available from DigiKey, but only in rather expensive roles. A viable alternative might be to purchase some RG174, remove the outer insulation and harvest the braid. Next, install the braid over wire with a high temperature insulation. A little care with wire size should establish a reasonable characteristic impedance.