An RFI Story with a Happy Ending

One ham's tale about keeping RF from where it doesn't belong.

Richard Kriss, AA5VU

I contacted the "Doctor" at *QST* for help so that I could run my 800 W station without TVI. When I started, anything over 100 W would interfere with the TV's remote control receiver circuits and cause the on-screen menu panel to flash on and off. Thanks to help from the "Doctor" and ARRL Lab RFI Engineer Mike Gruber, W1MG, the problem has been solved. This article describes the steps taken to clear the interference.

How's the TVI Getting to the TV?

The first step was to isolate how the interference was getting into the TV. As recommended, all cables, with the exception of the power cord and the TV coax, were removed. The flashing menu was still present when I transmitted with high power. Mike suggested the use of a common mode choke using an FT-240-43 ferrite core on the power line, based on a detailed article by ARRL Lab Manager Ed Hare, W1RFI.[1] This helped, but did not solve the problem. Another common mode choke was made up to go on the coax input to the TV. It also helped but did not completely solve the problem.

The final source was a cable TV technician-installed wall wart and signal splitter that powers a cable signal booster via the coax. I went to school on the Mike, W1MG, tip and installed another common mode choke where the powered coax is split to go the TV (Figure 4).

[1]Available on the ARRL Web at **www.arrl.org/tis/info/HTML/catvi/index.html**.

Figure 2 — A common mode choke on the power line, right at the receiver, attenuates RF on that path.

Success!

Shazam! I have not seen the flashing menu since installing the common mode chokes. I ran some additional tests, removing the devices one at a time, and no one choke completely solved the problem. It was the combination of all of the above. I appreciate all of the advice from several contributors.

If you are having a TVI issue, my advice is to start by reading W1RFI's article, then try experiments to see what works. To quote Ed, "The common-mode filter or choke may be one of the best-kept secrets in the Western world."

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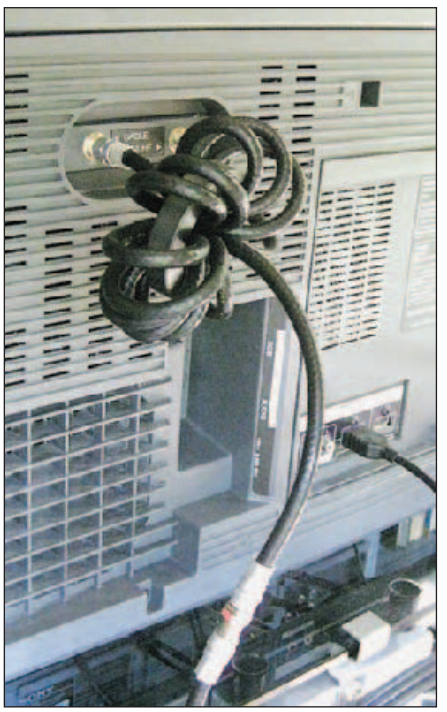

Figure 3 — The common mode choke installed on the coax input to the TV. This helped, but wasn't the final answer.

Figure 1 — The dreaded flashing menu flavor of TVI.

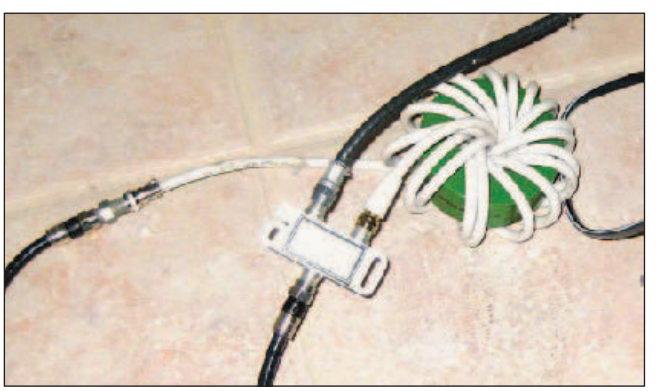

Figure 4 — A common mode choke on the coax cable. Note that an added length of coax was connected with a double female socket to provide a length of the needed turns. QST