

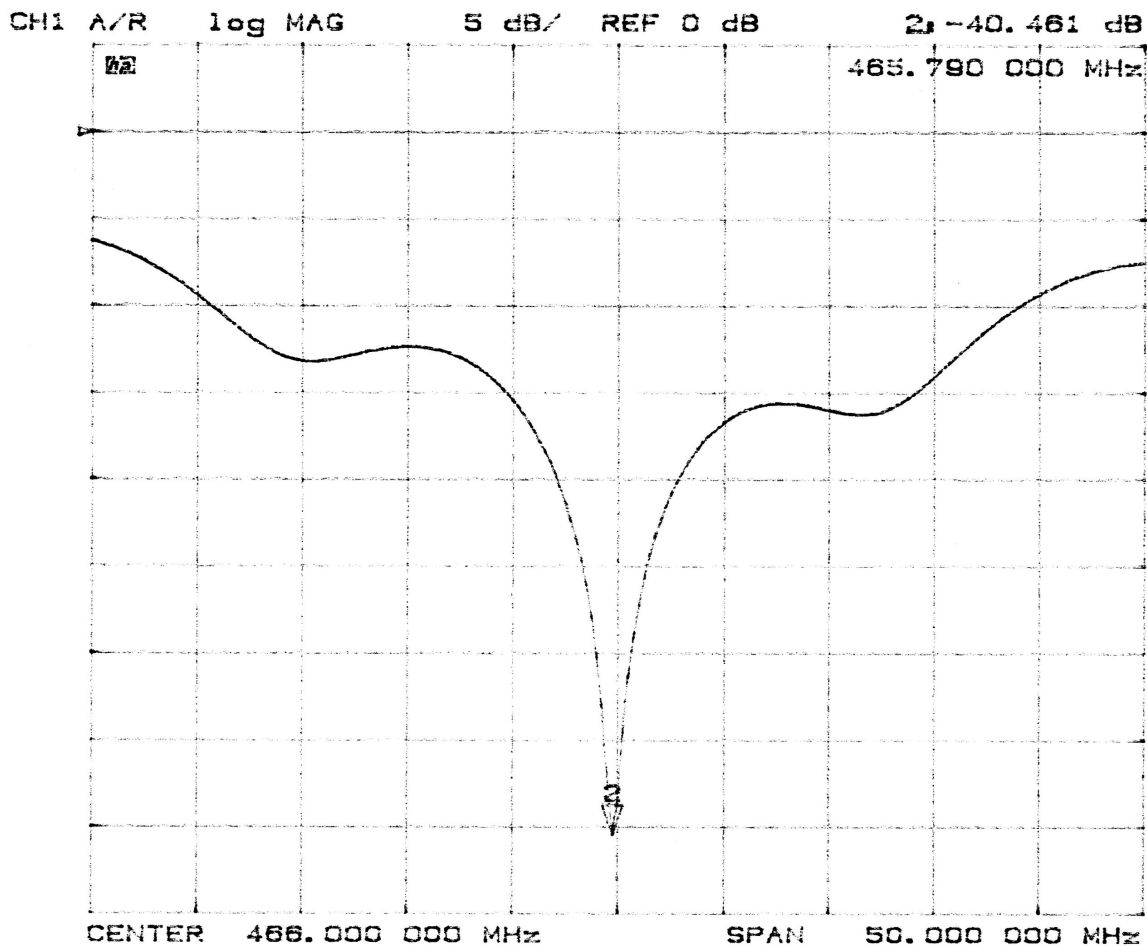
# The Ventenna Company LLC

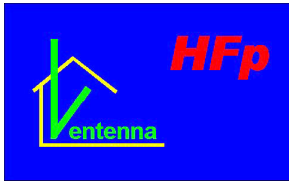
## UHF Connectors

The so-called "UHF" connector series (PL-259, SO-239), is often used in applications where it is not appropriate. The problem is that this connector is not a "constant impedance" connector, like the type "N", and "BNC" connectors. It exhibits quite a bit of impedance anomaly, particularly at VHF and UHF.

Here are a couple of network analyzer plots of an antenna's response curve, showing the difference a UHF connector can make. The antenna was a Ventenna, tuned to 466 MHz, with a 10-foot pigtail, terminated in a BNC connector.

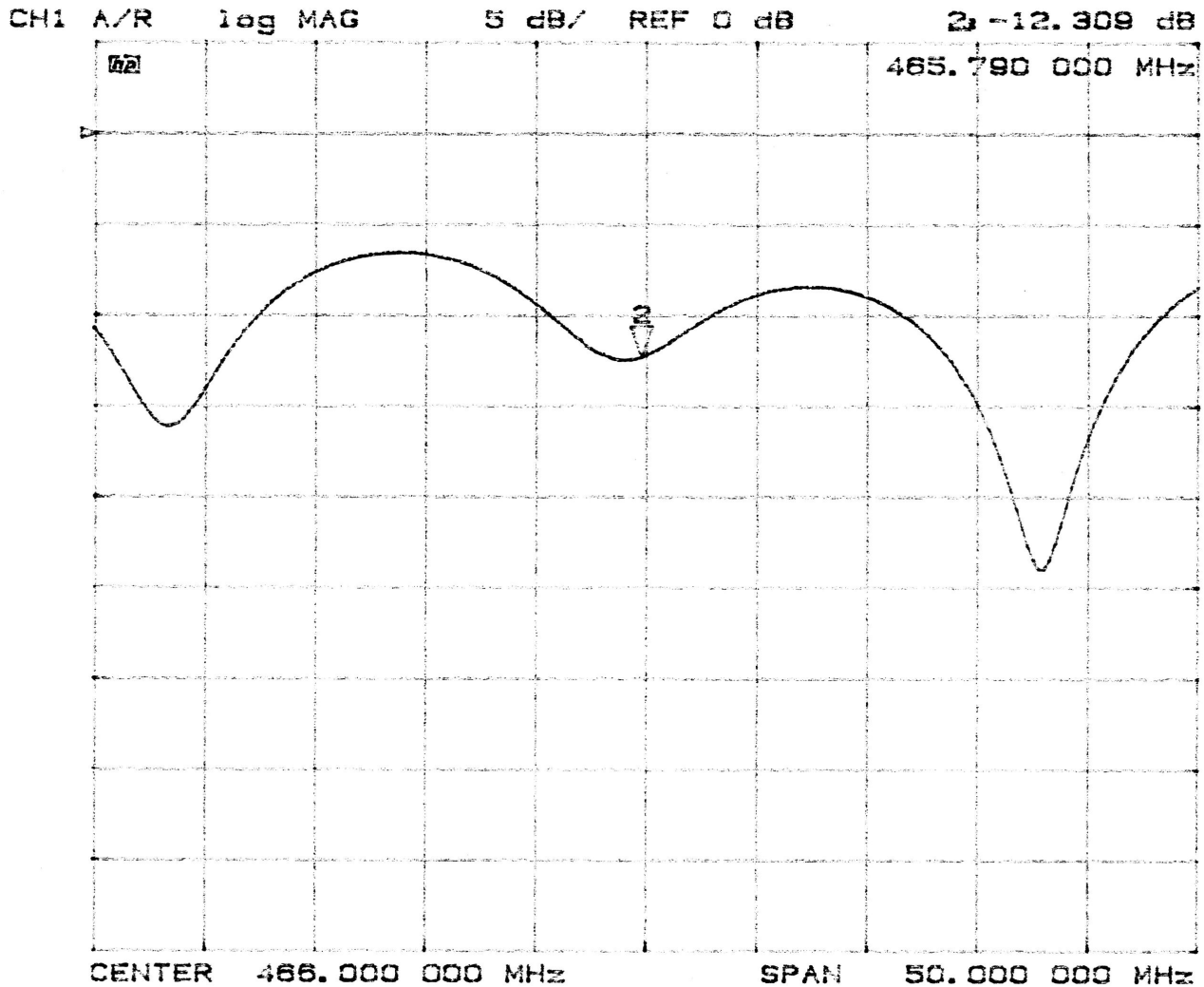
The network analyzer was connected to the antenna cable via RG-214, terminated in "N" connectors, with an N-to-BNC adapter at the antenna end. The deep notch at 466 MHz is over 40 dB, equivalent to an SWR of 1.04:1.





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The N-to-BNC adapter was then removed, and an N-to-UHF adapter put in its place, along with a BNC-to-UHF adapter to connect the antenna cable. Here is the result -



The difference is dramatic! The 466 notch is now 12.3 dB, equivalent to about 1.63:1 SWR. Just changing to a UHF adapter rendered the antenna almost un-useable, even though commercial inter-series adapters are typically better than the cable-end connectors, even the crimp-on type.

As of mid-2017, we have ceased to install "PL" series connectors on our VHF/UHF antennas. The standard connector is now a male BNC. But, we recognize that many people are stuck with the "PL" type of connectors on their cables, and supply a "BNC-SO" adaptor with the antenna. However, the performance specifications of the antenna are only guaranteed with the BNC connector.