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# ISS antenna is an option in an AM pinch

It fills a need for a cost-effective, compact AM and TIS antenna

**T**he recent Radio World article “Quick, We Need a Temporary Antenna” showcased the ingenuity of WMJC engineers as they scrambled to get a station back on the air quickly. While improvised antennas are one way to return to the air and can serve as an acceptable emergency or auxiliary antenna in a pinch, they may not be the best or easiest way to get an AM station back on the air.

AM stations faced with the dilemma of a damaged antenna, or one down for maintenance or replacement, have a commercially available option that is cost-effective and quickly deployable, one that allows them to remain on the air with reasonable coverage.

The Information Stations Specialists HPR.0990 is a resonant center and top hat loaded vertical monopole antenna with an integral 50 Ohm transmission line matching unit and optional quick-deployment ground radial system.

A typical installation requires setting a simple wood or metal support pole or a short tower to mount the self-supporting antenna using a quick deployment ground radial system or a connection to the station’s existing ground radial system at its base.

The antenna is side-mounted on the support using the included saddle clamps to attach it to the support pole. Due to its resonant design and integral impedance matching, the HPR.0990 can be directly connected to the transmitter’s 50 Ohm coaxial output without the need for an additional impedance matching network.

The base of the antenna is ideally mounted about 15 to 20 feet above ground level, which places the tip of the antenna about 45 to 50 feet high. This installation configuration, using the quick deployment ground radial system, shows a measured efficiency of 100 mV/m per kilowatt at 1000 kHz increasing to 175 mV/m at the top of the AM band. HPR.0990 efficiency declines gradually as the operating frequency moves toward the bottom of the AM



band due to the longer wavelengths, but despite its small stature, the HPR.0990 can still produce efficiency of 55 mV/m per kilowatt at 540 kHz.

Tuneup and installation are quick and easy once the support mast is erected and secured. The HPR-0990 is designed to handle transmitter power levels of up to 250W.

There are currently four HPR.0990 installations in commercial temporary use, serving stations in Connecticut, Pennsylvania, Virginia and Iowa. In addition to commercial applications, the HPR.0990 is well suited for use under Part 90.242 as a higher-efficiency Travelers Information Station antenna.

My familiarity with the HPR.0990 comes from my role assisting Information Station Specialists with the design, development and field testing of this antenna as a contract engineer. The antenna was born out of the need for a more efficient cost-effective compact AM and TIS antenna capable of medium power levels.

Based on its field deployment success, the HPR.0990 has achieved those goals. **RW**

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