

# Transmission Line Optimization

## WIDELine™

### High Performance, Long Service Life Solution for Multiplexing Broadcast Applications

Now broadcast system engineers and designers can multiplex DTV and NTSC television signals and minimize VSWR spikes, while extending the life of their transmission line. WIDELine™ wideband transmission line is made up of different length sections to minimize the addition of reflections.\* The result is excellent VSWR performance of a maximum of 1.1:1 over all UHF-TV channels in the U.S. FCC core spectrum.

For example, a 1,480-foot run of WIDELine™ transmission line (8-3/16", 75 ohm) was calculated to have a maximum VSWR of slightly more than 1.08. Actual field results may vary, but VSWR will not exceed 1.1:1 for any UHF-TV channel 14 through 51.

ERI WIDELine™ transmission line also protects your investment by eliminating problems caused by sliding bullet-type connections found in conventional rigid transmission line. Conventional rigid line is capable of accepting future changes in frequency assignments, with acceptable VSWR performance, however, its service life is limited by the rubbing of its connection points, which can ultimately lead to bullet burnout or arc-over. WIDELine™ transmission line incorporates a unique, patented\*\* bellows section into each inner conductor that compensates for differential expansion between the inner and outer conductors. Mechanical wear from sliding contacts is thus eliminated. The result is extremely long life. Since 1984, more than 75 broadcasters have selected transmission line using this technology, without a single failure due to bullet burnout.

WIDELine™ is available in 3-1/8" 50-ohm, 6-1/8" 75-ohm, 7-3/16" 75-ohm, and 8-3/16" 75-ohm sizes.

\* Patent applied for

\*\*United States Patent No. 4,543,548

### DUALine™ Custom-Length, Dual-Band, Rigid Transmission Line

If full wideband performance is not required, ERI will calculate the optimum rigid line section length to minimize VSWR, by using a proprietary computer program. Sections would normally be 20 feet long, or somewhat shorter, and would all be the same length to simplify installation. This solution is ideal for applications where the DTV and NTSC signals are combined in a single line, as it typically results in outstanding VSWR performance (depending on which channels are combined).

### Rigid Transmission Line Services

Type No.	Description
LAY-001	Transmission Line System Design (simple)
LAY-002	Transmission Line System Design (complex)
LAY-003	WIDELine™ Transmission Line System Design
TST-001	Transmission Line System Sweep and Tuning Supervision