

# Transmission Line

## Plan Design Operate

The ETAP Transmission Line editor calculates electrical parameters, conductor ampacity-temperature relationship, and sag/tension-temperature relationship of overhead transmission lines. Comprehensive modeling of the coupling effect between different line branches is available. The user-friendly graphical interface displays the layout of circuits and ground wires for overhead lines. Useful for efficiently sizing lines, building new lines, or verifying the parameters of existing lines.

line

# Design & Simulation of Transmission Lines

## Key Features

- Overhead Line Parameters & Coupling
- Sag/Tension vs. Temperature
- Conductor Ampacity vs. Temperature
- Calculate Long-Line Constants

## Capabilities

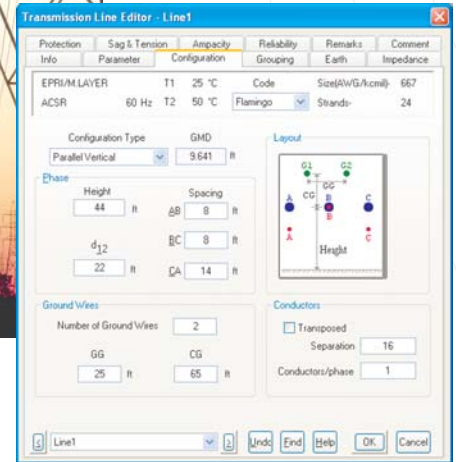
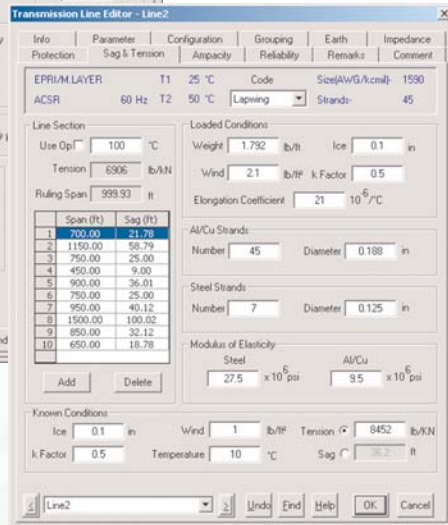
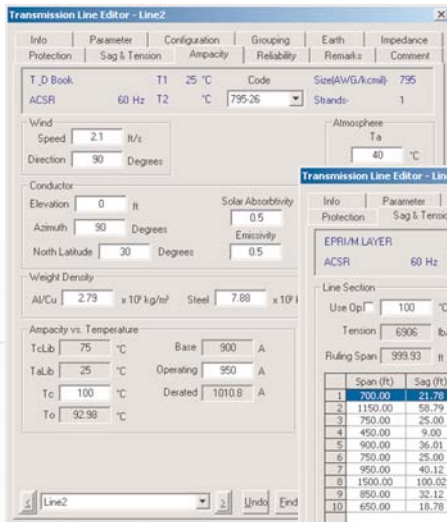
- Graphical user interface
- User-friendly input & output
- Flexible data entry for physical or impedance parameters
- Automatic impedance calculation based on physical parameters
- Integrated with all system studies
- One or more single-, two- or three-phase circuits, both transposed & untransposed
- One or more ground wires, both segmented & unsegmented
- Modeling of all possible types of line configurations
- Multiple layers of earth models
- Sag, tension, temperature, & ampacity calculations
- Modeling of coupling effect between different line branches

## Flexible Operation

- Available transmission line & ground wire libraries
- Selectable line layout types
- Multiple layers of earth models
- Optional conductor transposition or earth wire segment
- Optional phase/sequence domain parameter display



## Detailed Line Configurations



## Reporting

- Series branch impedance matrices in the phase domain
- Series branch impedance matrices in the sequence domain
- Shunt branch susceptance matrices in the phase domain
- Shunt branch susceptance matrices in the sequence domain

## Benefits

- Integrated tool to size lines or create
- Physical parameter to impedance calculator
- Sag/tension vs. temperature analysis
- Conductor ampacity vs. temperature analysis
- Fully integrated within ETAP

- Unlimited Buses\* & Elements
- No Voltage Limitations
- Looped & Radial Systems
- Multiple Isolated Sub-Systems
- Customizable Libraries
- Integrated 1-Phase, 3-Phase, & DC Systems
- Graphical Display of Results on One-Line Diagrams
- Customizable Font Types, Sizes, Styles, & Colors
- Customizable Display of Ratings & Results
- Graphical Display of Equipment Impedance & Grounding
- Automatic Error Checking
- Graphical Display of Overstressed Devices
- Graphical Display of Over/Under Voltage Buses
- Dynamically Adjust Display of Results

\*Maximum number of energized buses during calculations is license dependent.