

BENTLEY® COAX™

DESIGN AND MANAGEMENT OF COAX NETWORKS

Bentley® Coax™ is a robust RF design engineering solution that creates an intelligent coax network model during the design process. Bentley Coax works with Bentley® Fiber™ and Bentley® Inside Plant™ to create an end-to-end network model, allowing an HFC network to be analyzed at any level and ensuring accurate network documentation. The software uses an advanced geospatial platform, MicroStation GeoGraphics®, that integrates mapping, engineering, and inventory workflows into a highly productive environment. Bentley Coax will interactively calculate the optimum design while placing equipment and cable for new, upgrade, and/or rebuild network designs.

Easy Start-Up and Configuration

An easy-to-use GUI is provided for creating equipment specifications, defining design parameters, and establishing display rules. Bentley Coax allows for the input and configuration of equipment types that include amps, equalizers, cable, drops, pads, splices, splitters, taps, terminators, powering equipment, and other devices. Equipment Specification Reports can be generated to confirm the configurations.

The visual display characteristics of the network equipment and associated graphical text can be easily configured. Parameter settings define information to be used when auto-populating data blocks are placed, such as those associated with amps, end-of-line and power supply symbols.

RF Design and Network Documentation

Bentley Coax performs real-time signal calculations and tap sizing as a designer draws a route. The engineering calculations are based on the equipment specifications. The high and low frequencies calculate the forward and reverse with the noise/distortion levels automatically, which are displayed to support design decisions at any point in the design process.

Bentley Coax maintains network and design connectivity as devices are inserted, removed, or changed. The designer is prompted to reconnect the network when appropriate and can choose to automatically perform a recalculation of the design, either for the active route or globally. This guarantees the design is always within specification with the results visually depicted as the recalculation proceeds. Designers can review input and output levels for an individual device or follow the signal levels device by device with the option of creating reports and saving them to text files that can be imported into other applications.

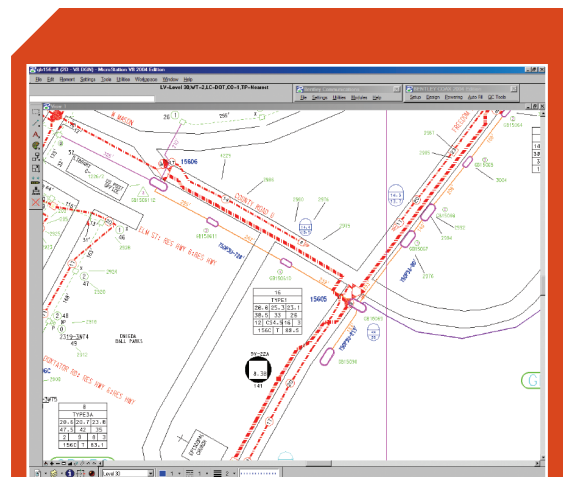
Bill of Materials Reports can be generated and can include an address list for a selected area. A batch BOM report can generate files of every node in a project. The reports consist of the cable bearing strand information for the linked strand type footages, the equipment and equipment costs.

Powering

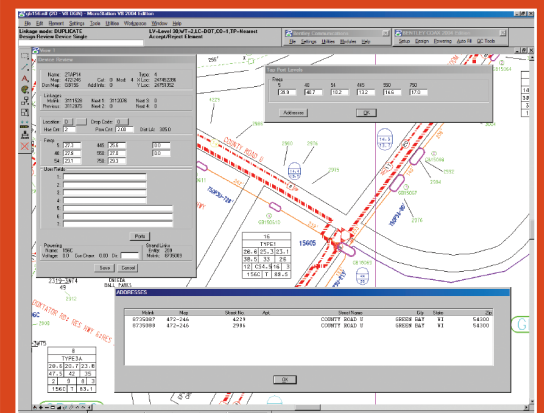
After design has been completed, Bentley Coax allows designers to power the plant. Powering is based on user-defined boundaries and shapes that define the area to be powered. Designers have the option of changing the power count percentage when using power-passing taps. When powering equipment is added to the design, Bentley Coax will trace the network, calculating the current draw and voltage requirements. Detailed powering information is reported graphically with circles being displayed on equipment to depict success or failure of the powering operation. Optimization can be achieved through repositioning the power equipment as required.

Manage and Publish Network Information

A Geospatial Managed Environment allows maps, engineering documents, and drawings to be spatially related to the network model created by Bentley Coax. Using Bentley® Geo Web Publisher™, information created by Bentley Coax can be queried and published through a Web browser to users who require access to the network information.



RF Design Calculations are performed as equipment is placed.



Easily access tap properties, port levels, and associated addresses.

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BENTLEY SOLUTIONS AND SERVICES

WWW.BENTLEY.COM

BENTLEY COAX AT-A-GLANCE

Design and Documentation

- Intelligent Coax network model for HFC networks
- Fully integrated with Bentley Fiber and Bentley Inside Plant
- Head-end to customer network model
- Real-Time signal calculations and tap sizing during design
- Editing environment ensures network and design reliability
- Equipment may exist in different build states during design lifecycle
- Supports up to eight frequencies in any combination of forward and return
- Supports cable simulators, loss in cable splices and user-configured devices
- Jumper settings allow for powering amplifier legs in any combination

Engineering Calculations

- Real-time noise and distortion analysis
- Analysis of carrier noise (C/N), composite triple beat (CTB), second order distortion (SOD) and cross modulation (XMOD)
- Visual identification of items that exceed design specifications
- Interactive powering calculations and optimization
- Active and global recalculations
- Calculates the forward, return, interstage pads and equalizers
- Allows for input of fixed and variable pads and equalizers

Analysis and Reporting

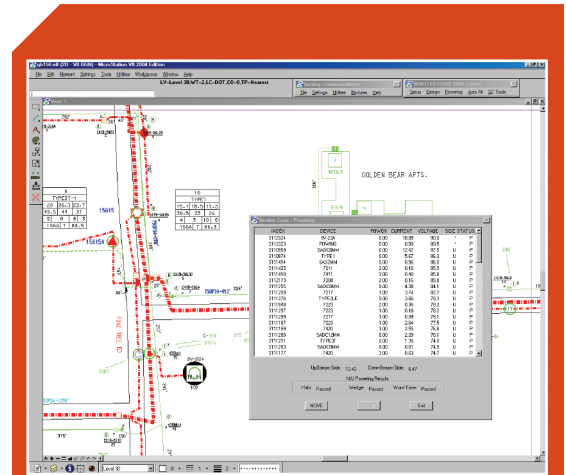
- Review all devices
- Locate outage
- Bill of Materials
- Bill of Materials by Build State
- Address list by node
- Monitors minimum forward and return amplifier inputs
- Verifies consistency between strand footages and cable lengths
- Node boundary command allows for quick and easy optimization of service areas based on homes passed

Configurable Equipment Standards

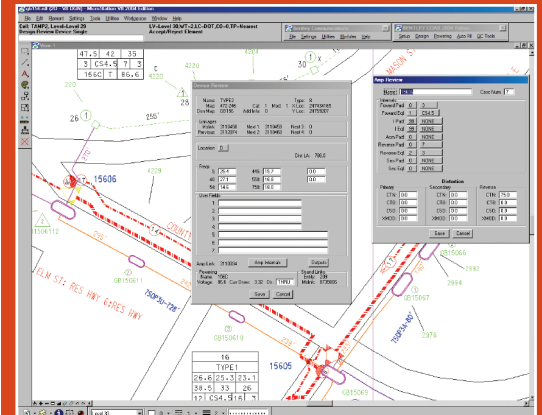
- Easy-to-use GUI for Equipment Specification
- Configurable parameters for all coax devices and power supplies
- Graphical performance display of device frequencies
- Pre-configured library included
- Ensures use of engineering standards in design
- Equipment Specifications Report

Powering Standards and Calculations

- Configure power supplies with up to four outputs
- Move and change power equipment
- Power by power supply boundary or power blocks
- Power count percentage
- Supports HALO, wedge and worse case scenarios
- Supports power passing and equalized taps
- Supports splitting power supply outputs



Perform powering calculations and visually show results.



Detailed amp internals & distortion information are readily available to the designer.

ABOUT BENTLEY

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial vertical markets spans architecture, engineering, construction (AEC) and operations. With 2003 revenues reaching \$260 million, Bentley is the leading provider of AEC software to the Engineering News-Record Design 500 and major owner-operators.

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BENTLEY COAX SYSTEM REQUIREMENTS

- Processor: Intel Pentium-based or AMD Athlon-based PC or workstation
- Operating System: Microsoft Windows 2000 (SP2 or higher recommended), Windows XP, Windows NT 4 (SP6 recommended)
- Prerequisite Application: Bentley Fiber
- Memory: 256 MB
- Hard Disk: 200 MB minimum free disk space
- Input Device: Mouse or digitizing tablet
- Output Device: Most industry-standard devices are supported. Works with output devices supported by Windows
- Video: Supported graphics card. Dual-screen graphics supported with vendor-supplied drivers for Windows NT 4. Multi-monitor configurations supported with Windows 2000 and Windows XP