Bentley
Advancing Infrastructure

PRODUCT DATA SHEET

OpenComms™ Designer

Comprehensive Communications Network Engineering Solution

INTEGRATE OPTIMIZED NETWORK PLANNING MODELS

OpenComms Designer is a GIS, client-based communications network engineering solution for planning, engineering, constructing, and maintaining fiber, coax, and hybrid fiber-coax networks. OpenComms Designer enables you to easily integrate optimized network planning models directly into existing design environments to engineer and maintain the as-built model of your network.

Complete projects ahead of schedule by seamlessly managing work, whether it is done in house or outsourced to contractors. OpenComms Designer empowers project stakeholders to monitor and track change in project work requests from start to finish. Boost value in your digital workflows by creating iModels and aggregate OpenComms Designer network model information into your digital twin environments.

OPTIMIZE WORK MANAGEMENT OF OUTSIDE AND INSIDE PLANT NETWORKS

OpenComms Designer enables you to improve efficiency and increase engineering throughput of infrastructure design by merging network design and work management in a single environment. For outside plant networks, you can quickly lay out and verify coax, FTTx, HFC, and other architectures in a rich engineering GIS that includes the precision of MicroStation® with interactive signal calculations.

For network facilities, you can speed projects with visual layout of headends, points of presence, central offices, data centers, and other sites. With OpenComms Designer, you can deliver consistent designs and save time with common equipment, layout templates, connection rules, and standard reports.

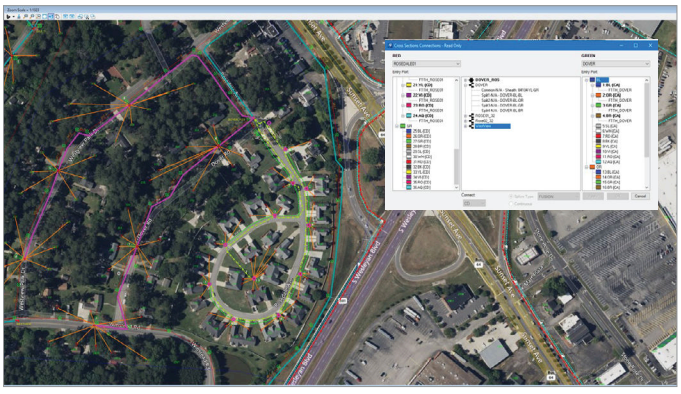
POWERFUL FUNCTIONALITY TO ENSURE STREAMLINED DESIGN WORKFLOWS FOR HIGH PRODUCTIVITY

OpenComms Designer enables designers and their supervisors to monitor and fulfill work requests using sophisticated functionality for work order management, job closeout, disconnected contractor workflows, and process measurement and tracking. OpenComms Designer interfaces and integrates with a variety of WWS solutions to streamline the process of managing projects from inception to completion.

OpenComms Designer empowers and supports your contractors by enabling disconnected workflows when VPN access to the engineering documentation server is not permitted.

WORK FASTER WITH FEWER ERRORS IN AN OPTIMIZED ENGINEERING ENVIRONMENT

OpenComms Designer provides you with an easy-to-use graphical user interface (GUI) for specifying equipment, drawing, and engineering standards used in the design and documentation of your fiber, coax, and hybrid fiber-coax networks, which includes a preconfigured library for quick startup.



For brownfield or greenfield designs, OpenComms Designer supports fiber, coax, and hybrid fiber coax network projects.



OpenComms Designer interfaces and integrates with a variety of WMSs to streamline the process of managing projects from inception to completion.

RF/COAXIAL CABLE DESIGNS

Designed for your coax networks, OpenComms Designer uses a graphical routing process based on existing landbase and strand map information, such as poles, pedestals, manholes, and ducts, to build an intelligent network model of the coax and related outside plant facilities.

These functions maintain connectivity throughout the entire network. Editing a device causes the network to be recalculated automatically, and devices that do not meet the design specification used in the project are identified for further correction. A complete set of tools is available to place different kinds of annotation driven by information from the database. You can place data blocks (amplifier, power supply, and/or end of line) that were previously customized in the setup. There are two ways to verify the network design. The first calculates signal level and distortion automatically while the user is laying out the coaxial network.

The second allows the user to recalculate the signal level and distortion from any coaxial device on the network until an amplifier or terminator is reached. After the design has been completed, you can power the plant. Powering is based on user-defined boundaries or power blocks that define the area to be powered. You have the option of changing the power count percentage when using power-passing taps.

FTTP, HFC, AND OTHER FIBER ARCHITECTURE DESIGNS

Using OpenComms Designer to configure your equipment standards ensures consistency throughout projects. OpenComms Designer supports multiplexing and demultiplexing of wavelength for use in commercial fiber and HFC architectures.

OpenComms Designer allows efficient fiber cable splicing automatically or manually, depending on the complexity of the network. From an easy-to-use GUI, you can select fibers to splice together, the type of splice to use, the position they will occupy in the enclosure, their status, their tray, slot, or holder location, and fiber entry port allocation for the incoming sheaths. Quickly find any device, locate an outage anywhere in the network, locate a path between two devices based on several criteria, or locate customers. There are several "locate" utilities including the ability to locate particular devices, customers, slack loops, and the locate outage tool.

POWERFUL REPORTING FUNCTIONALITY FOR DESIGNERS

OpenComms Designer includes powerful reporting functionality with bills of materials (BOM) for all equipment and cable, BOM by build state, address list by node service area, and more. Reports are displayed on the screen and may be output as text files for printing or for importing to other file formats. Various reports are available, including a resource report that details the equipment specifications of the spec file(s), a device information report listing the properties of the routed equipment, a device BOM report that lists the materials and costs of equipment used in a definable area or in an entire project, a sheath BOM report of the active work area or an entire project, and a reel BOM that shows assigned sheaths to reels in the active work area or an entire project.

OpenComms Designer provides the capability to route and manage conduits within a duct system and to perform capacity analysis. Integrated OpenCities®

Map print preparation capabilities can be used to facilitate construction plans. Print preparation functionality is delivered with a standard schema, sample border templates, and other items. This facilitates quick startup, but print preparation is also fully customizable to meet the user's organizational standards. OpenComms Designer has a connector to generate network infrastructure iModels to boost the value in digital workflows.

ENHANCE DESIGN AND DOCUMENTATION OF INSIDE PLANT NETWORKS

OpenComms Designer enables you to define, configure, and place equipment in racks and floor plans that visually depict the precise layout of the facility to ensure consistency and data integrity throughout your projects. Administrators can define a library of frames (racks), cards, and equipment used in the design process along with their associated properties. Equipment in racks and slots can be pre-configured within the equipment. Rules defining valid card-to-slot relationships and jumper cable-to-port type validation can also be defined. Racks and equipment are displayed on floor plans created with MicroStation or imported from other sources. These floorplans can be as simple as the building footprint, or a detailed architectural drawing.

PRE-CONFIGURED TEMPLATES HELP REDUCE DESIGN TIME

You can use pre-configured templates to place a rack or frame on a floor plan. Equipment can be moved within the rack by dragging and dropping. Connections are established by selecting the equipment and the associated ports, which allows you to assign a jumper cable length, type, and color. OpenComms Designer allows you to assign this jumper a service name, which is then rippled throughout the entire facility. Schematic representations can be generated by service name.

When connecting to outside fiber, you can view optical system names or sheaths, and select the fiber and port to connect or disconnect. You can easily copy connected racks or groups of racks. All connections are automatically maintained, which significantly reduces the time to document multiple facilities with similar equipment.

ABILITY TO GENERATE ADVANCED REPORTS SAVES TIME

OpenComms Designer can generate several time-saving reports. The equipment specifications report provides details of equipment used in the design. The bill of material report includes all racks, equipment, and associated costs. The connection report displays the port level connections of the selected equipment. Wire run and circuit trace reports and logical schematic drawings are automatically created.

DESIGN IN DIGITAL CONTEXT

A comprehensive solution, OpenComms Designer enables you to consume multiple data types to effectively understand existing conditions of their networks. You can rapidly capture the as-built condition using iTwin® Capture, Bentley's reality modeling solution, to quickly produce 3D reality models from photographs and/or point clouds. With OpenComms Designer, you can incorporate reality meshes, point clouds, thematic mapping, imagery, and other geocoordinate data sources to provide continuous real-world digital context under one GIS system.

CLIENT SYSTEM REQUIREMENTS

MINIMUM: 8 GB, Disk space minimum 10 GB
RECOMMENDED: Windows 10 (64 bit), Windows 11 (64 bit)
PROCESSOR: Intel or AMD processor 3.0 GHz or greater, DirectX 9.0c supported

OpenComms Designer At-A-Glance

INTUITIVE INTERFACE

- Adheres to Windows application standards
- Allows users to customize the way information is displayed with the toolbars, shortcuts, and other navigational tools
- CAD Workprint Capabilities

SUPPORTED ARCHITECTURES

- Coax
- FTTx
- HFC
- FITL
- LAN/WAN
- Metropolitan
- Long haul
- SONET/ATM
- Many others

WORKFLOW MANAGER

- Configurable data organizer can be tailored to the user's preferences to provide lists for pending, past-due, and in-progress work
- Tracks the timelines of each project and shows which ones need attention
- Calculates the duration of each project and stores notes about project details

Integrated Work Management

- Manages work requests and designs in either a stand-alone mode or in combination with users' WMS
- Keeps track of the lifecycle status and scheduled due date of every job as it progresses from initiation through completion
- Treats work requests and designs as discrete data sets
- Provides access to archived drawings from the work request
- Helps users find information faster and organize it in different ways for viewing – by due date, project type, work request name, and customer name

Strand and Duct Integrated Strand Mapping

- Configurable specifications
- Structure creation
- Addresses automatically associated to structures
- Address information from billing systems can be utilized
- Organizes duct management
- Route and manage conduit and bundles
- Assign ownership
- Create elevation views
- View cross sections
- View wall diagram reports
- Manage duct capacity
- Report on leased facilities

FIBER

Analysis and Engineering Calculations

- End-to-end tracing at sheath, fiber, and circuit level
- Engineering calculations can be performed by area or the entire network
- Fiber loss budget analysis
- Optical coupler optimization
- Rippling/throwing of optical systems or circuits
- Locating potential fiber paths
- Specification file may be saved for reuse
- Splice, cable, and connector loss definitions
- Laser loss budget
- Engineering calculations bills of material
- Design and documentation
- Color-coded cross sections based on buffer tube or ribbon fiber
- Equipment model validation rules
- Circuit allocation and bandwidth management on an individual fiber basis
- Full support of WDM devices and network models
- Customizable standard fiber reports
- Engineering workprints
- Operations functions
- Locate outage, device, customer, slack, node, and path
- Use FTTx customer activation, deactivation, and work order generation tools

COAX

Analysis and Engineering Calculations

- Interactive 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
- Supports fixed and variable pads and equalizers

Design and Documentation

- Interactive calculation of RF signal levels for up to eight frequencies in any combination of forward and return
- Automatic property-based annotation of amplifiers, tap levels, end-of-line levels
- Jumper settings for powering amplifier legs in any combination
- Support for node segmentation

Powering Standards and Calculations

- Configuration of power supplies with up to four outputs
- Centralized powering scenarios supported
- Cross node power supported
- Move and change power equipment
- Power by power supply boundary feature or power block point features

OpenComms Designer At-A-Glance (continued)

- Power count percentage
- Easy-to-move power supply/inserter functionality produces optimum results
- Supports direct input power to amplifiers, nodes, and other coaxial features used for power insertion
- Automatic update of amp/end-of-line block information after powering
- Supports HALO, wedge, and worse-case scenarios
- Supports power passing and equalized taps
- Supports splitting power supply outputs

Analysis and Reporting

- Signal levels on any device and addresses fed from taps
- Produce bills of material for all RF equipment and cable
- Access the address list by node service area
- Report minimum forward and return amplifier inputs
- Verify consistency between strand/duct footages and cable lengths

INSIDE PLANT

Setup and Configuration

- Easy-to-use GUI for equipment specification
- Preconfigured equipment library
- User-customizable attributes
- Detailed database and graphical properties defined
- Configure frames, equipment, slots, and port assemblies
- Copy frame/rack assemblies for easy replication of equipment
- Validation rules include:
  - Properties
  - Card in proper equipment
  - Card in proper slot
  - Equipment placement in racks
  - Air spaces between equipment
  - Port mapping through equipment
  - Connection rules

Design and Layout

- Generate rack elevations (front and back views) automatically
- Simple drag and drop equipment placement
- Depict equipment state and port connectivity graphically by color
- Seamless integration of connections inside building or to outside plant
- Generate connections report
- Maintain connections while copying or moving equipment and frames

Engineering Documentation

- Wire run reports
- Circuit trace reports
- Automatically generated schematics
- Rack elevation views (front and back)
- Connectivity reports by service
- Equipment properties such as noise level, power consumption, and HVAC requirements
- Circuit layout record
- Equipment report
- Consolidated bills of material containing fiber equipment and cable



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FIND OUT MORE AT BENTLEY.COM

1.800.BENTLEY (1.800.236.8539) | Outside the US +1.610.458.5000 | **GLOBAL OFFICE LISTINGS** bentley.com/contact

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