



For those who design and configure links in optical networks and subnetworks, $VPIlinkDesigner^{TM}$ is a cost-effective, easy-to-use tool which enables fast and optimum network design and provisioning.

VPIlinkDesigner provides an intuitive graphical interface and powerful algorithms for easy equipment placement and a systemwide performance assessment. It supports equipment configuration of networks with linear, branched, hub, ring and mesh topologies and offers detailed cost and performance calculation and reporting.

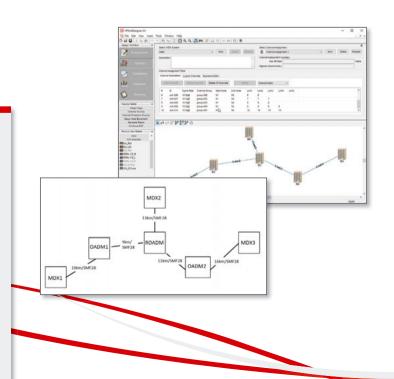
Whereas hours could be spent implementing a design by using a spreadsheet, *VPIlinkDesigner* enables the same network to be designed in minutes.

VPIlinkDesigner is ideal for carriers, equipment vendors, and any organization which may have campus-type or private networks. Utility companies, financial institutions, research organizations, and government organizations will benefit from the use of this tool. It is also ideal for system integrators who may be designing network solutions for custom applications.

Benefits



- Enables optical link engineering, with easy equipment placement and configuration
- ✓ Systemwide performance analysis including fiber impairments and equipment limitations
- ✓ Uniform results across an organization by using controlled equipment libraries and link design methodologies
- A future-proof platform utilizing a fully expandable technology-agnostic approach
- Built-in reporting tools providing BOM and performance reports



What Can VPllinkDesigner Do for You?

VPllinkDesigner overcomes approaches to network design that are tedious and cumbersome, such as the use of spreadsheets. It can be used to design many types of networks, ranging from simple point-to-point to complex ring and mesh topologies.

VPIlinkDesigner will automatically calculate network performance, while placing elements such as amplifiers, dispersion compensation modules, OADMs and WSS-based ROADMs where needed. It will also assist in defining roadmaps for equipment layouts, as well as provide support for technical sales activities.

VPIlinkDesigner provides

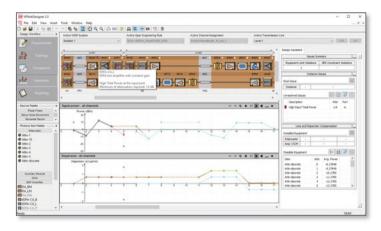
- A replacement and upgrade for the use of spreadsheets for link design
- Thorough performance evaluation of power, dispersion, OSNR, FWM, SPM, XPM and SBS for all channels, the moment that elements (e.g., amplifier, DCM) are placed
- Tools assisting with design tasks such as channel allocation, TRx placement, amplifier gain setting and padding, as well as the insertion of regeneration points

VPIlinkDesigner is intended for use by

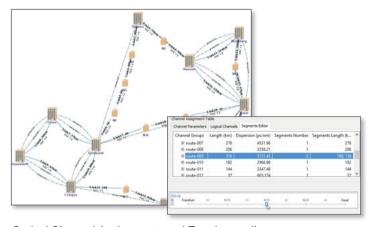
- Universities and research institutions with several campuses on a network
- Utility companies with multiple facilities on a network
- System integrators performing custom network design
- Internet service providers and CLECs with networks on exclusive or leased fiber networks
- Government entities and financial institutions with multiple locations on a network

The Design Process

- 1. Establish topology and facility placement
- 2. Select the equipment libraries to be used
- 3. Build network design solution
- 4. Assess network performance and rank solutions by cost or other metrics
- 5. Generate performance reports, bills of materials, etc.



User interface showing component placement and performance graphs



Optical Channel Assignment and Topology editor

Part Number	Product Description	List Price	Spaces	1		1	20	8	Fotal Quantity	Cost	Discount	Net
Chassis and C	ommon Equipment	Toward.								Territoria.	1000	1071.000
49U126H	4RU-12 Slot Powered Sh	\$1,000.00		. 11	2	1	1	1	7	\$7,000.00	0%	\$7,000.0
P512_AC	Power Supply for 48U-1	\$500.00	- 1	2	4	20	2	2	13	\$6,500.00	0%	\$6,500.0
MWG M: VS	Management modules.	\$1,000.00	- 1	1	- 2	1	1	1	7	\$7,000.00	0%	\$7,000.0
	al and ROADM Compi											
MOM 4(16-19)	16-15-channel 100bps 0	\$588.00	- 1	2	0	0	- 0	- 00	3	\$1,764.00	0%	\$1,764.0
DADM 4(20-23)	20-23-channel 100bps 0	\$5,000.00	- 1	0	1	0	- 2	0	4	\$20,000.00	0%	\$20,000.0
MOM 1 (16-47)		\$324.00		a	31	0	0	0	4	\$1,296.00	0%	\$3,296.0
MOM 8(16-23)	16-23-channel 100hps 0	\$5,000.00	1	0	0	1	0	1	3	\$15,000.00	0%	\$15,000.0
MOM 8(16-23)	16-23-channel 100bps 0	\$1,140.00	1	0	0	1	0	0	- 2	\$2,280.00	0%	\$2,280.0
MOM 1 (16-47)	32-channel turiable CAC	\$5,000.00	- 1	0	- 0	0	2	0	. 3	\$15,000.00	0%	\$15,000.0
655_4	4 degree WISS ROADM	\$0.00	- 1	0	3.	0	0	-01	4	\$0.00	0%	50.0
Implifiers and	Dispersion Manager											
DFA-CG_B	EDFA boost amplifier wi	\$2,500.00	1	0	. 3	1	1	0	6	\$15,000.00	0%	\$15,000.0
DFA-CG_L	EDFA line amplifier with			0	. 3	0	- 0	06	- 4	\$8,000.00	0%	\$8,000.0
ktin-discrete	Discrete Set attenuator			0	2	0	0	0		\$0.00	0%	\$0.0
Transponders.	Muxponders and Pl	uggable O	lptical Tr	ranscel	vers							
05 MP 8016	10G line musponder wit	\$2,500.00	1	1	.0	0	.0	- 1	- 3	\$7,500.00	0%	\$7,500.0
100G_TP_CFP	100Gbps transponder w	\$5,000.00	1	4	3	- 4	- 4	1	19	\$95,000.00	-0%	\$95,000.0
OG MP 8020	105 line musponder with	\$2,500.00	- 1	0	0	- 1	0	- 1	3	\$7,500.00	0%	\$7,500.0
IOG_MP_8021	10G line musponder with	\$2,500.00		0	. 0	- 1	0	1		\$7,500.00	0%	\$7,500.0
0G_MP_8022	10G line musgonder with	\$2,500.00	1	0	0	0	1	1	3	\$7,500.00	0%	\$7,500.0
IOG MP 8017	10G line musponder with		- 1	- 1	0	00	0	1		\$7,500.00		\$7,500.0
OG_MP_8023	100 line musponder with	\$2,500.00	1	9	. 0	0	3	1	3	\$7,500.00		\$7,500.0
000G CFP 40	1006 DWDM CFF single			- 4	3	4	- 4	1	19	\$39,900.00	0%	\$39,900.0
	g. Cabling Allowance			adding	items	nat ge	nerate	I by VP				
09-33	Voa Add	\$0.00	1	- 1	0	0	1	0	3	\$0.00		50.0
04-6	Voa Add	50.00	1	1	0	0	1	3	4	\$0.00	0%	50.0
ea:T	Vox Add	50.00	1	: 2	0	20	0	0.0	5	50.00	0%	50.0

Bills of Materials

Channel ID	Signal Rate	A	Z	Route	W Label	XCVR type	Rx Pow Val	Rx Pow Margin Min	
och-016	200G_8-QAM	N14	N2	sk15, Link12, Link10, Lin	C64	200G-XYZ	-4.29	13.71	
och-015	200G_8-QAM	N8	N4	Links, Links	C61	200G-XYZ	-4.11	13.89	
och-014	200G_8-QAM	N8	N3.	Link7, Link6, Link5	CS8	200G-XYZ	-1.55	16.45	
ech-013	100G_QPSK	N10	N14	Link12, Link15	C63	100G-ZYX	-5.07	12.93	
och-012	2006_8-QAM	N9	N14	Link10, Link12, Link15	C61	200G-XYZ	-4.77	13.23	
och-011	100G_QP5K	N9	N11	Link10, Link11	C62	100G-ZYX	-12.53	5.47	
och-010	100G_QP5K	N9	N30	Link30	C63	100G-ZYX	-0.79	17.21	
och-009	100G_QP5K	346	N5	Links	C62	100G-ZYX	-1.48	16.52	
ach-008	100G_QPSK	N2	:N4	Link2, Link3	CSO	100G-ZYX	-2.63	15.37	
och-007	100G_QP5K	N1	N2:	Links	C64	100G-ZYX	-4.17	13.83	
och-006	2005_8-QAM	N8	NS.	Link8	C64	200G-XYZ	-1.74	16.26	
och-005	200G_8-QAM	N7	N8	Link7	C63	200G-XYZ	-1.91	16.09	
och-004	200G_8-QAM	N1	N7.	Links, Links, Links, Links	C55	200G-XYZ	-1.12	16.88	
och-003	200G_B-QAM	N3	N5	Link1, Link2, Link3, Link8	C57	200G-XYZ	-1.87	16.13	
och-002	100G_QP5K	N1	N9	Link1, Link9	C62	100G-ZYX	-0.88	17.12	
och-001	200G 8-QAM	N1	N9.	Link1, Link9	C63	200G-XYZ	-0.91	17.09	

Channel Budget Summary

Product Features

Capabilities

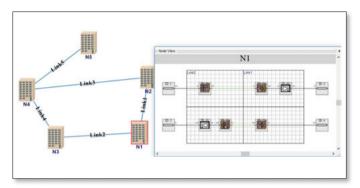
- Creates linear, branched, hub, ring and mesh topologies
- Enables visibility of regeneration points
- Supports OADMs, WSS-based ROADMs, banded designs, transponders
- Automated wavelength allocation
- Placement and configuration of passive and active components
- Generates BOM including racks, power supplies
- Enables performance analysis
- Deals with fiber impairments

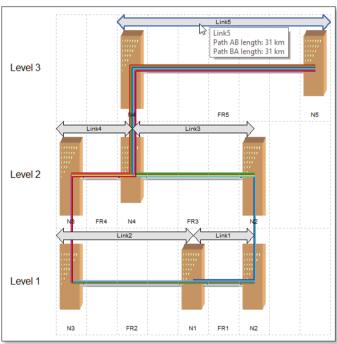
Easy-to-use graphical user interface

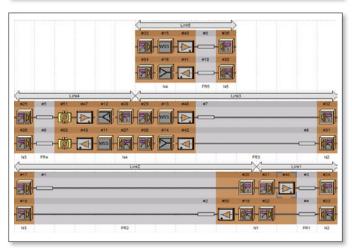
- Intuitive interface provides process flow, facilities and equipment view
- Macros eliminate repetitive or complex tasks such as routing primary and protecting channels
- Topology Editor permits visualization of channel parameters such as route, bit rate and length
- Equipment is shown inside its facility
- Display detailed component connections including parallel structures (banded etc.) inside facilities

Intuitive display of performance results

- Metrics are plotted as longitudinal variations along the route or as spectra at each location
- Metrics are updated instantly to reflect any change in the design
- Limits and uncertainties are plotted, for example, the receiver sensitivity and overload







Topology in Graph, Level, and Photonic view



VPIlinkConfigurator & Design Services

As the volume and complexity of designs increase, upgrading to *VPIlinkConfigurator* may be warranted. This upgrade offers more design tools, a scripting platform for customizable user macros and broader list of equipment templates. Furthermore, *VPIlinkConfigurator* offers fully automated and cost-optimized placement of amplifiers and dispersion compensation elements.

VPIphotonics provides customization and programming services to help integrate *VPIlinkConfigurator* into your engineering and sales process.

Services include, for instance, the implementation of

- Custom equipment libraries
- Macros for the placement of passive equipment including custom control interface and rule sets
- Synthesis algorithms for link loss and dispersion compensation adhering to custom design rules
- BOM and performance reports according to company standards

VPIphotonics also offers design services using these tools to accomplish your network designs on a contractual basis.

For more information

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