

PAVLight Gigabit Free Space Optical System

PAVLight 1Gbps FSO Communications System

PAVLight Gigabit

PAVLight Gigabit is a free space optical system designed to enable high speed communication of voice, data and video over distances up to 1.5km between link heads which have a clear line of sight between them.

This system can transmit data rates of up to 1Gbps and is available in 500m or 1.5km configurations. The 500m system uses one laser transmitter and one receiver while the 1.5km system uses three transmitters to provide the extra power for the greater distance.

Benefits

- Simple rapid installation within hours
- No frequency license allocation required
- Modular design - modules easily changed
- High availability
- High bandwidth
- Redeployable – moves with your network
- Interfaces with fibre optic cable
- High security system – inherent in FSO technology
- Full technical support provided
- Warranty extension available
- Compact all weather design for permanent outdoor use
- Optional Indoor Unit to monitor system status
- Rapid payback (ROI)
- No ongoing leasing costs or licensing cost
- No environmental disruption for infrastructure

Features

- Digital electronics
- Indicator LEDs on link head and on optional IDU
- Safety interlocks designed to ensure greater safety for installers
- Clear LED information and Alarm relay outputs
- Integrated retiming (CDR without IDU)



The PAVLight Linkhead (Outdoor Unit)

Applications

- Building to building connectivity
- Last mile connection to fibre optic network
- Substitution for fibre optic cable in Gigabit Ethernet systems
- LAN extension
- Broadband internet access
- Integration of voice, data and video on a single link
- Disaster Recovery / Business Continuity

Options

Indoor unit

The provision of an indoor unit, which consists of a 19" rack mounted unit, enables system status monitoring by non-technical staff who can read the link status and see any fault conditions immediately. It also enables upgrades to the link with no need to access the link head. The IDU houses the Personality Interface Module (PIM) which specifies the speed and physical presentation of the interface. It also adds retiming/regeneration functionality on systems with a data rate greater than 100Mbps.



The PAVLight Indoor Unit (IDU)

SNMP Management system

An optional SNMP Management Interface board is available for those customers who require SNMP management of the link.

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Specification for PAVLight 1.5Mbps – Gigabit

Outdoor unit		1 Tx System	3 Tx System
Product Code		PL 1.5 – 155 1TX	PL 1.5 – 155 3TX
Performance	Effective Data Rate Range (metres) Bit Error Rate MTBF (hours)	1.5Mbps – 1Gbps 500 >10E ⁻¹⁰ 105,000	1.5Mbps – 1Gbps 1500 >10E ⁻¹⁰ 105,000
Transmitter	Number of Transmitters Light Source Laser Class Wavelength (nm) Output Power (dBm) NOHD/ENOHD@d ₆₃ (IEC60825-1) (m) NHZ/NHZ-Aided@d ₆₃ (IEC60825-12) (m) Beam Divergence (mrad)	1 Laser Diode 1M 810 14 0/92 0/92 3	3 Laser Diode 1M 810 18.75 0/92 0/92 3 x 3
Receiver	Detector Type Field of View Sensitivity (dBm)	APD 15° -45 to -20	APD 15° -45 to -20
Client Interface	Presentation Connectors Systems Cable	Fibre Optic Dual SC Gigabit Ethernet 850nm MM or 1300nm SM Fibre	
Interface to IDU (Optional)	Presentation Connectors Cable	Fibre Optic Dual SC Multi or Single Mode Fibre	
Power Supply	Input Voltage Power Consumption (Watts)	10	19.5 - 72 V DC 15
Environmental Information	Operating Temperature (°C) Operating Humidity Enclosure	-40 to +65 95% (non condensing) IP66	
Mechanical Design	Link Head Dimensions W x L x H (mm) Mounting bracket Height including mounting bracket Weight (kg)	350 x 550 x 198 200 x 200 x 76 274 8.5	350 x 550 x 390 200 x 200 x 76 469 14.9
Indoor Unit (Optional)			
ODU Interface	Presentation Connectors Cable	Fibre Optic Dual SC Multimode or Single Mode Fibre	
Client Interface	Presentation Connectors Systems Cable	Fibre Optic Dual SC Gigabit Ethernet 850nm MM or 1300nm SM Fibre	
Power Supply	Input Voltage (V) Power Consumption (Watts)	90-240VAC (Autoranging) 10	
Environmental Information	Operating Temperature (°C) Operating Humidity Enclosure	0 to +40 90% (non condensing) IP30	
Mechanical Design	Dimensions W x L x H (mm) Weight (kg)	435 x 44 x 253 2	
Indicator LEDs		ODU Rx Data Client Rx Dta Retiming Sync ODU Rx Data Power Input	(Green) (Green) (Orange) (Yellow) (Green)

Alarm LEDs (Red) ODU Power Fail, ODU Rx Fail, ODU Tx Fail

Alarm Relay Output ODU Power Fail, ODU Rx Fail, ODU Tx Fail, Signal Loss, Optical Rx Fail, Optical Tx Fail

PAV Data Systems maintain a continuous process of research and development, and as such, all specifications within this document are subject to change without notice.

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