

PAVLight 155 Free Space Optical System

PAVLight 155Mbps FSO Communications System

PAVLight 155 is a free space optical system designed to enable high speed communication of voice, data and video over distances up to 4km between link heads which have a clear line of sight between them.

This system can transmit data rates of up to 155Mbps and is available in 500m, 2km or 4km configurations. The 500m and 2km systems use one laser transmitter and one receiver, while the 4km system uses three transmitters to provide extra power for the greater distance.



The PAVLight Linkhead (Outdoor Unit)

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 or copper 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 costs
- No environmental disruption for infrastructure

Features

The 500m configuration uses a pin diode in the receiver while the 2km and 4km configurations use APDs.

- 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)

Applications

- Building to building connectivity
- Wireless backhaul for mobile operators
- Last mile connection to fibre optic network
- Substitution for fibre optic cable or copper wire
- 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 1.5 – 155

Outdoor unit		1 Tx System	3 Tx System
Product Code		PL 1.5 – 155 1TX	PL 1.5 – 155 3TX
Performance	Effective Data Rate	1.5 – 155 Mbps	1.5 – 155Mbps
	Range (metres)	2000	4000
	Bit Error Rate	>10E ⁻¹⁰	>10E ⁻¹⁰
	MTBF (hours)	105,000	105,000
Transmitter	Number of Transmitters	1	3
	Light Source	Laser Diode	Laser Diode
	Laser Class	1M	3B
	Wavelength	(nm) 910	910
	Output Power	(dBm) 20	25
	NOHD/ENOHD@ ^{d63} (IEC60825-1)	(m) 0/30	6/65
	NHZ/NHZ-Aided@ ^{d63} (IEC60825-12)	(m) 0/30	6/65
Beam Divergence	(mrad) 11	11 x 3	
Receiver	Detector Type	APD / PD	APD
	Field of View	15°	15°
	Sensitivity	(2km/500m) (dBm) -45 to -10 / -35 to +20	(2km/500m) -45 to -10
Client Interface	Presentation Connectors Systems	UTP, BNC, Fibre Optic BNC, RJ45, Dual SC E1/T1, E3/T3, 155ATM, STS-3, STM-1, 10/100Mbps Ethernet 1300nm MM or 1300nm SM Fibre	
	Cable	1300nm MM or 1300nm SM Fibre	
IDU Interface (Optional)	Presentation Connectors	Fibre Optic Dual SC	
	Cable	Multimode or Single Mode Fibre	
Power Supply	Input Voltage	10	19.5 - 72 V DC
	Power Consumption (Watts)		15
Environmental Information	Operating Temperature	(°C) -40 to +65	
	Operating Humidity	95% (non condensing)	
	Enclosure	IP66	
Mechanical Design	Link Head Dimensions W x L x H	(mm) 350 x 550 x 198	350 x 550 x 390
	Mounting bracket	200 x 200 x 76	200 x 200 x 76
	Height including mounting bracket	274	469
	Weight	(kg) 8.5	14.9
Indoor Unit (Optional)			
ODU Interface	Presentation Connectors	Fibre Optic Dual SC	
	Cable	Multimode or Single Mode Fibre	
Client Interface	Presentation Connectors Systems	UTP, BNC, Fibre Optic BNC, RJ45, Dual SC E1/T1, E3/T3, 155ATM, STS-3, STM-1, 10/100Mbps Ethernet 1300nm MM or 1300nm SM Fibre	
	Cable	1300nm MM or 1300nm SM Fibre	
Power Supply	Input Voltage	(V) 90-240VAC (Autoranging)	
	Power Consumption	(Watts) 10	
Environmental Information	Operating Temperature	(°C) 0 to +40	
	Operating Humidity	90% (non condensing)	
	Enclosure	IP30	
Mechanical Design	Dimensions W x L x H	(mm) 435 x 44 x 253	
	Weight	(kg) 2	
Indicator LEDs	ODU Rx Data	(Green)	Retiming Sync (Orange)
	Client Rx Dta	(Green)	ODU Rx Data (Yellow)
	Power Input	(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.