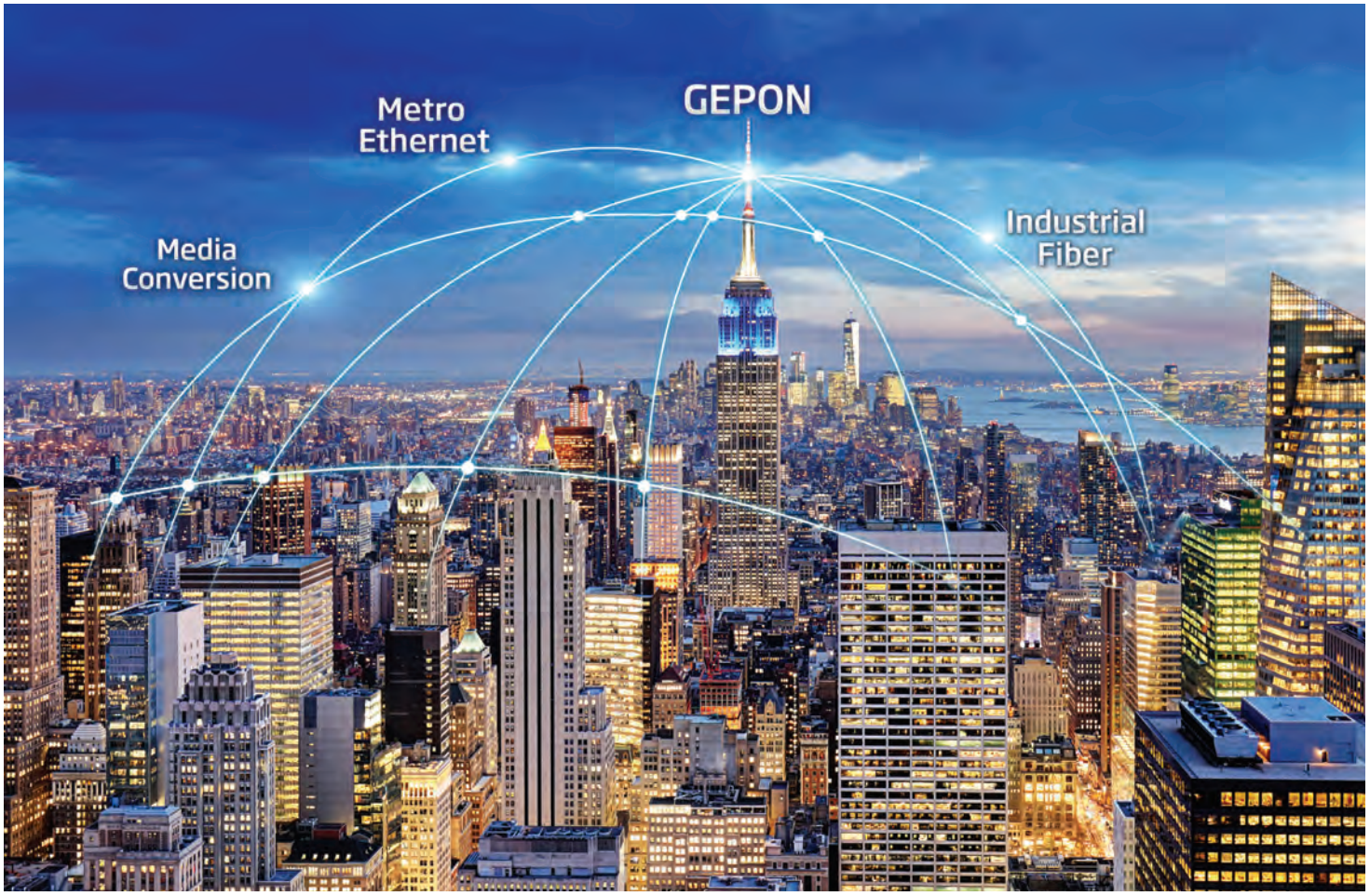
PLANET
Networking & Communication

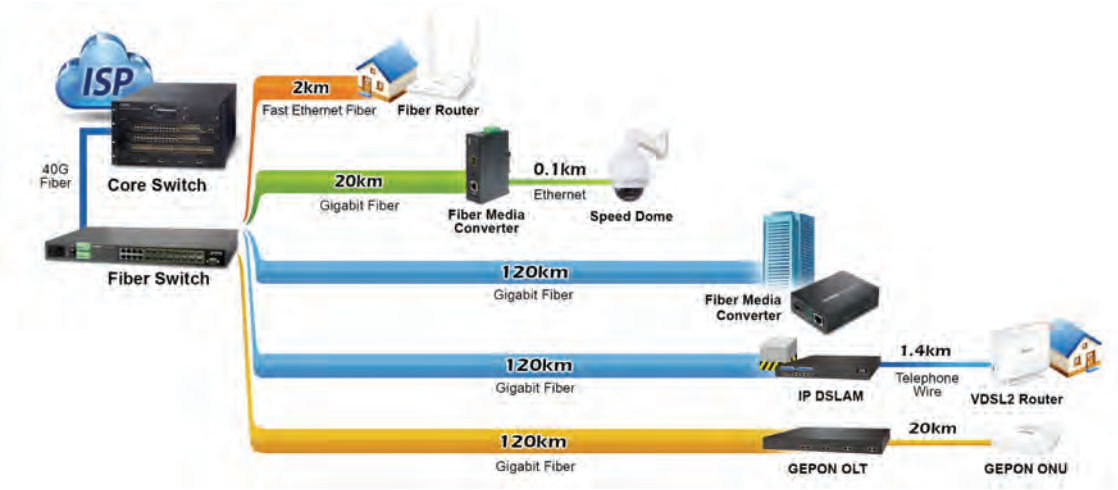
Fiber Optic Network Solutions

Comprehensive Solutions from the Edge to the Core



Introduction

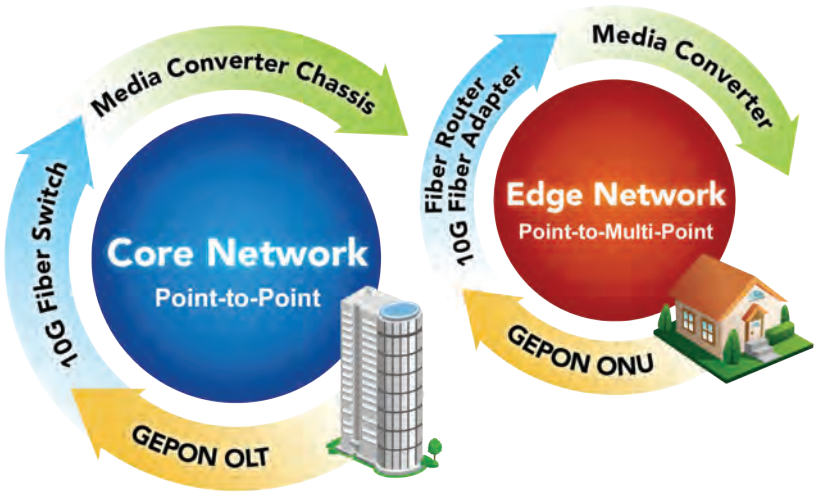
In the broadband communication, the fiber optic network deployment is increasingly applied to today's cloud applications and high-demanding multimedia streaming service. The fiber optic transmission has large advantages over the existing copper wire as the optic fiber cable carries much lower attenuation and interference. However, compared to the existing copper or UTP cable, fiber optic is relatively expensive and difficult to be widely deployed in a short period of time. Besides, fiber optic system is usually employed by core networks such as telecommunications, campuses and hospitals, utilizing fiber switches, media converters, GEPON passive optic devices, and more. There are various available ways to efficiently deploy fiber connectivity network.



Comprehensive Solutions from the Edge to the Core

Through decades of experience in IP networking and fiber communication, PLANET has developed a comprehensive fiber connectivity solution to help ISPs and telecoms quickly construct broadband service as well as the fast connectivity to the edge.

PLANET provides a broad range of fiber-related product lines adapting to all kinds of work environments. PLANET delivers solutions to fiber connectivity in commercial, carrier grade, and especially industrial level products for stable networking in wide operating temperature. In the Chile's miners rescue mission in 2010, PLANET fiber solution successfully assisted the miners trapped in a 624-meter tunnel in hopes of looking for lives via visual and voice communication with their families and rescue team.

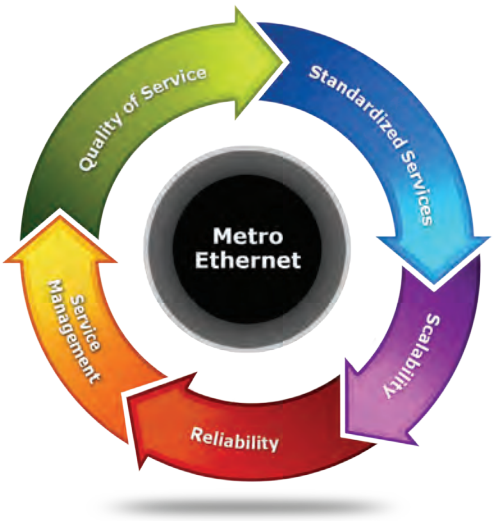


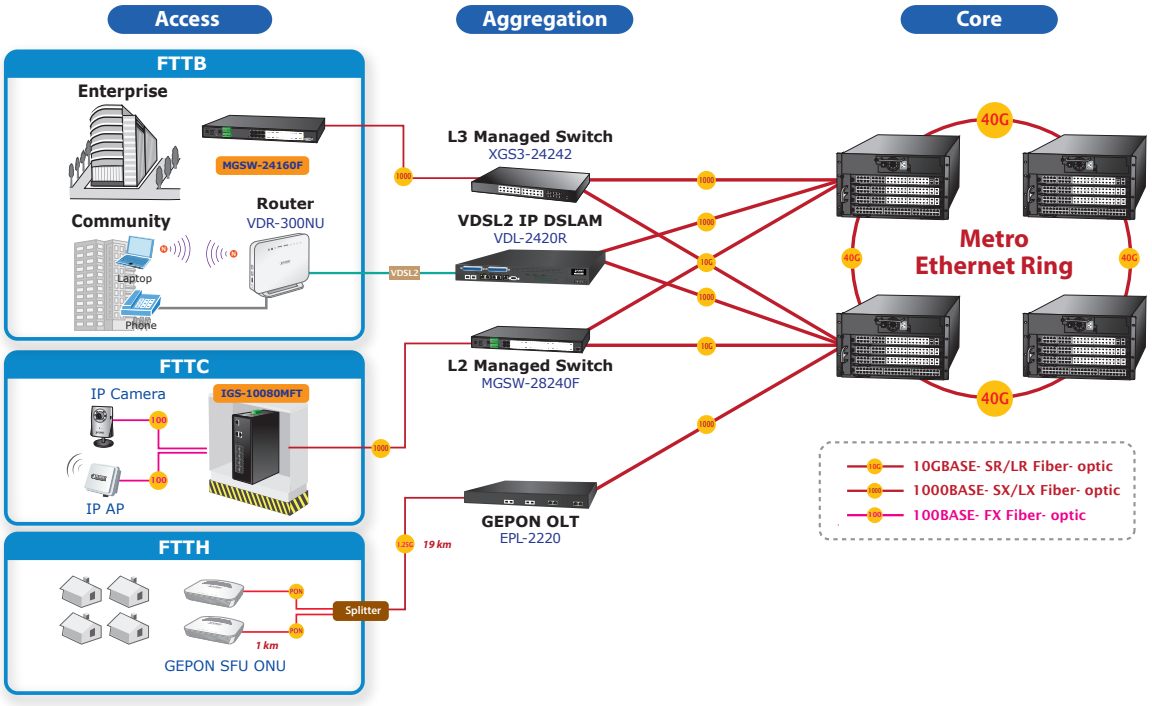
Metro Fiber Switches

To improve the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-to-install features, the data exchange speed of Optical Fiber Ethernet is up to 40Gbps and the distance of Gigabit Optical Fiber is up to 120km. PLANET provides many kinds of Point-to-Multi Point Managed Fiber Switches and CPE especially for Metro Ethernet applications. The benefits of Metro Ethernet Switches include not only professional Internet Management Technology, such as IPv6/IPv4 Dual-Stack, Q-in-Q VLAN, Multicast, QoS, Security and High Availability, but also Optical Ethernet Internet Architecture up to 40Gbps to meet the needs of high-bandwidth multi-media. PLANET Metro Ethernet Switch Solution is the best choice to connect the enterprise, community and campus in the metropolitan area to backbone network for service providers.

The Advantages of Metro Ethernet

- Long distance and better quality of transmission for Optical Ethernet: the distance up to 120km between points
- Lower cost for installation of Gigabit Ethernet and 10Gigabit Ethernet
- Easy Internet architecture, the same and simple Protocol from LAN to MAN
- Flexible bandwidth management based on customers' demands
- Meeting the demands for high bandwidth triple-play service





Metro Fiber Switches

Metro Core Multi-Layer IPV6/IPV4 Routing Switches

Chassis Switch		
Model		XGS3-42000R
Product Image		
Chassis Slots	Total Number of Slots	4 (2 Management Modules + 2 Standard Modules or 1 Management Module + 3 Standard Modules)
	Max. Management Module	2
	Max. Standard Module	3
	Management Module Redundancy	●
	Number of Power Supply Bays	2
Total Port Capacity	Max. 10G XFP Slot	12
	Max. 10/100/1000BASE-T	160
	Max. 1000BASE-SX/LX SFP Slot	96
Hardware Specifications	Switch Processing Scheme	Store-and-Forward
	Backplane Bandwidth	1.2Tbps
	Switching Capacity	376Gbps
	Full-Mesh Switching Capacity	160Gbps
	MAC Table	Max.32K
	VLAN Table	4K
	ACL Table	16K max.
	Routing Table	IPv4 Protocol: 128K max. IPv6 Protocol: 64K max.
	Layer 3 Interface	500 max.
	Port Queues	8
	Jumbo Frame	9kbytes
	Dimensions (W x D x H)	440 x 421 x 266 mm
	Power Input	AC: Input 100~240V, 50~60 Hz
IPv4 Layer 3 Functions	IP Routing Protocol	Static Route, RIPv1/v2, OSPFv2, BGP4, Policy-based Routing (PBR), LPM Routing(MD5 authentication)
	Multicast Routing Protocol	IGMP v1/v2/v3, DVMRP, PIM-DM/SM, PIM-SSM
	Layer 3 Protocol	VRRP, ARP, ARP Proxy
	Routing Interface	Per VLAN
IPv6 Layer 3 Functions	IP Routing Protocol	RIPng, OSPFv3, BGP4+
	Layer 3 Protocol	Configured Tunnels, ISATAP, CIDR
Layer 2 Functions	Multicast	MLDv1/v2, MLD v1/v2 Snooping
	Access Control List	Supports Standard and Expanded ACL, IP-based ACL / MAC-based ACL, Time-based ACL, ACL Pool can be used for QoS classifcation, Up to 1K entries
	Security	IPv4 / IPv6 + MAC + Port Binding, IPv4/IPv6 + Port Binding, ARP Spoofing Prevention, ARP Scanning Prevention, IP Source Guard
	Authentication	IEEE 802.1x Port-based Network Access Control, AAA Authentication: IPv4 / IPv6 over RADIUS
Management Function	System Confguration	Console, Telnet, SSH, Web Browser, SSL SNMPv1, v2c and v3
	Management	United for IPv4/IPv6 HTTP and SSL, the user IP Security inspection for IPv4/IPv6 SNMP, IPv4/IPv6 NTP, IPv4 / IPv6 SSH, SNMP v1/v2c/v3, TACACS+, security IP Safety Net Management Function
Standards Conformance	Regulatory Compliance	FCC Part 15 Class A, CE

		Multi-Layer	Stackable
Model		XGS3-24242	SGS-6340-20S4C4X
Product Image			
Hardware	10/100BASE-TX	-	-
	10/100/1000BASE-T	12 combo	4 combo
	Mini-GBIC / SFP	24	24 (100X Compatible)
	10G SFP+ Slot	4	4 (1000X Compatible)
	PoE 802.3at Port	-	-
	PoE Budget	-	-
	Switch Fabric	208Gbps	128Gbps
	MAC Table	16K	16K
	Jumbo Frame	9K	9K
	Memory Buffer	1.5MB	1.5
Layer 3 Features	IP Interfaces	1K	128
	Routing Tables	16K/6K	128
	Routing Protocols	RIP, OSPFv2/v3, BGPv4/v4+ RIPng, PIM-DM/SM/SSM, VRRP	Static routing, RIP and OSPF
	Hardware Accelerated	●	●
Interface	Port Mirror	TX, RX, Both	TX, RX, Both
Link Aggregation	Port Trunk	●	●
	LACP	●	●
VLAN	802.1Q VLAN	●/4K	●/256
	Q-in-Q VLAN	●	●
	Private VLAN	●	●
Spanning Tree	802.1D	●	●
	802.1w	●	●
	802.1s	●	●
Rapid Data Recovery	E.R.P.S.	-	-
Multicast	IGMP Snooping	v1, v2, v3	v1, v2, v3
	MVR	●	●
Quality of Service	802.1p Priority	●/8 queues	●/8 queues
	Priority Mode	Strict/WRR	Strict/WRR
	IP TOS/DSCP	●	●
	QoS Mode	Port-COS,DSCP-COS	Port-CoS, DSCP-CoS. L4 Port-Cos
	DiffServ Policy QoS	●	●
Data Control	Ingress/Egress	●/●	●/●
Access Control List	IP-based	●	●
	MAC-based	●	●
Security	802.1x Port-based Authentication	●	●
	MAC Filtering	●	●
	Port Security	●	●
Management	IPv6/IPv4	●/●	●/●
	Console	●/RJ45	●/RJ45
	Telnet	●	●
	Web Management	●	●
	SNMP	v1, v2c, v3	v1, v2c, v3
	RMON	1, 2, 3, 9	1, 2, 3, 9
	SSH/SSL	●	●/●
	Firmware Upgrade	HTTP, TFTP	HTTP, TFTP
	Configuration Backup/Recovery	●	●
	Single IP Management	●	●
	Syslog	●	●
Physical	Dimensions (W x D x H)	440 x 350 x 44 mm	440 x 240 x 44 mm
	Power Supply	100~240V AC, -48 DC RPS	100~240V AC, 50/60Hz -48~-60V DC
	EMI/Safety	FCC Class A,CE	FCC Class A, CE

Metro Core 10G Routing Switches

		Stackable	Standalone	
Model		SGS-6340-16XR	XGS-6350-12X8TR	XGS-5250-12X8CR
Product Image				 TAIWAN EXCELLENCE 2018
Hardware	10/100/1000BASE-T	-	8	8
	1000BASE-X SFP	-	-	8 combo
	10G SFP+ Slot	16 (1000X compatible)	12	12
	40G QSFP+ Slot	-	-	-
	100G QSFP28 Slot	-	-	-
	PoE 802.3at Port	-	-	-
	PoE Budget	-	-	-
	Switch Fabric	320Gbps	256Gbps	256Gbps
	MAC Table	16K	32K	32K
	Jumbo Frame	9K	9K	9K
	Memory Buffer	2MB	3MB	3MB
Layer 3 Features	IP Interfaces	64	128	128
	Routing Tables	64	128	32
	Routing Protocols	Static routing, RIP and OSPF	Static routing, RIP and OSPF	Static routing, RIP and OSPF
	Hardware Accelerated	●	●	●
Interface	Port Mirror	TX, RX, Both	TX, RX, Both	TX, RX, Both
Link Aggregation	Port Trunk	●	●	●
	LACP	●	●	●
VLAN	802.1Q VLAN	●/4K	●/4K	●/4K
	Q-in-Q VLAN	●	●	●
	Private VLAN	●	●	●
Spanning Tree	802.1D	●	●	●
	802.1w	●	●	●
	802.1s	●	●	●
Rapid Data Recovery	E.R.P.S	-	-	-
Multicast	IGMP Snooping	v1, v2, v3	v1, v2, v3	v1, v2, v3
	MVR	●	●	-
Quality of service	802.1p Priority	●/8 queues	●/8 queues	●/8 queues
	Priority Mode	Strict/WRR	Strict/WRR	Strict/WRR
	IP TOS/DSCP	●	●	●
	QoS Mode	Port-CoS, DSCP-CoS, L4 Port-CoS	Port-CoS, DSCP-CoS, L4 Port-CoS	Port-CoS, DSCP-CoS, L4 Port-CoS
	DiffServ Policy Qos	●	●	●
Data Control	Ingress/Engress	●/●	●/●	●/●
Access Control List	IP-based	●	●	●
	MAC-based	●	●	●
Security	802.1x Port-based Authentication	●	●	●
	MAC Filtering	●	●	●
	Port Security	●	●	●
Management	IPv6/IPv4	●/●	●/●	●/●
	Console	●/RJ45	●/RJ45	-
	Telnet	●	●	●
	Web Management	●	●	●
	SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
	RMON	1, 2, 3, 9	1, 2, 3, 9	1, 2, 3, 9
	SSH/SSL	●/●	●/-	●/●
	Firmware Upgrade	●	●	●
	Configuration Backup/Recovery	HTTP, TFTP	HTTP, TFTP	HTTP, TFTP
	Single IP Management	●	-	-
	Syslog	●	●	●
Physical	Dimensions (W x D x H)	440 x 220 x 44 mm	400 x 315 x 44 mm	400 x 200 x 44 mm
	Power Supply	100~240V AC, 50/60Hz 40~60V DC	Dual 100~240V AC, 50/60Hz	100~240V AC, 50/60Hz Dual 40~60V DC
Regulator	EMI/Safety	FCC Class A, CE	FCC Class A, CE	FCC Class A, CE

Metro Fiber Switches

Metro Core IPv6/IPv4 Routing Switches

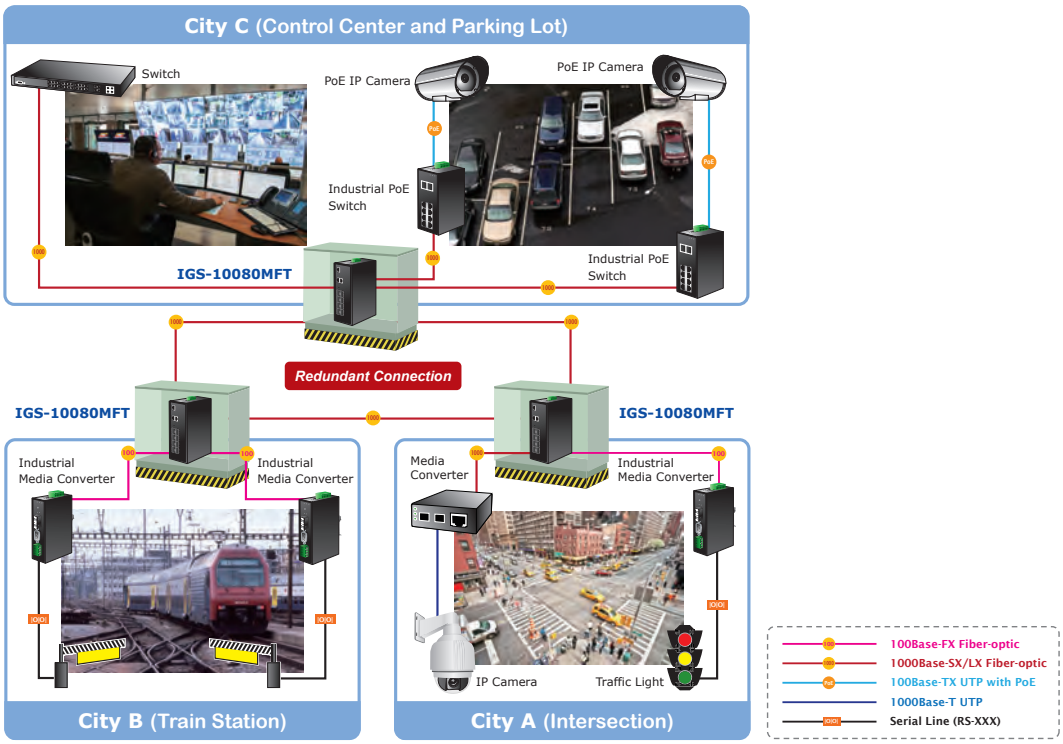
		Metro Fiber Switches			Standalone		
Model		MGSD-10080F	MGSW-24160F	MGSW-28240F	GS-5220-16S8C	GS-5220-44S4C	GS-5220-46S2C4X
Product Image							
Hardware	10/100BASE-TX	-	-	-	-	-	-
	10/100/1000BASE-T	2	8	4 (combo)	8 (combo)	4 (combo)	2 (combo)
	Mini-GBIC / SFP	8 (100FX Compatible)	16 (100FX Compatible)	24 (100FX Compatible)	24	48	48
	10G SFP+ Slot	-	-	4 (1000X Compatible)	-	-	4 (1000X Compatible)
	PoE 802.3af Port	-	-	-	-	-	-
	PoE 802.3at Port	-	-	-	-	-	-
	PoE Budget	-	-	-	-	-	-
	Switch Fabric	20Gbps	48Gbps	128Gbps	48Gbps	96Gbps	176Gbps
	MAC Table	8K	8K	32K	16K entries	16K entries	32K entries
	Jumbo Frame	9K	9K	10K	10K bytes	10K bytes	10K bytes
	Memory Buffer	4Mbits	4Mbits	32Mbits	16Mbits	16Mbits	32Mbits
Interface	Port Configuration	●	●	●	●	●	●
	Port Mirror	TX, RX, Both	TX, RX, Both	TX, RX, Both	TX, RX, Both	TX, RX, Both	TX, RX, Both
	DDM	●	●	●	●	●	●
Link Aggregation	Port Trunk	5 Trunks / 8 Ports	24 Trunks / 8 Ports	24 Trunks / 8 Ports	12 Trunks / 8 Ports	24 Trunks / 8 Ports	26 Trunks / 8 Ports
	LACP	●	●	●	●	●	●
VLAN	Port-based	●	●	●	●	●	●
	802.1Q VLAN	●/256	●/256	●/256	●/256	●/256	●/256
	Protocol-based	-	-	●	●	●	●
	GVRP	-	-	-	-	-	-
Spanning Tree	802.1D	●	●	●	●	●	●
	802.1w	●	●	●	●	●	●
	802.1s	●	●	●	●	●	●
Multicast	IGMP Snooping	v1, v2, v3	v1, v2, v3	v1, v2, v3	●	●	●
Quality of Service	MVR	●	●	●	●	●	●
	802.1p Priority	●/4 queues	●/4 queues	●/8 queues	●/8 queues	●/8 queues	●/8 queues
	Priority Mode	Strict/WRR	Strict/WRR	Strict/WRR	Strict/WRR	Strict/WRR	Strict/WRR
	IP TOS/DSCP	●	●	●	●	●	●
	QoS Mode	Port-COS, DSCP-COS, L4 Port-COS			Port-COS, DSCP-COS, L4 Port-COS		
	DiffServ Policy QoS	●	●	●	●	●	●
Data Control	Ingress / Egress	●/●	●/●	●/●	●/●	●/●	●/●
Access Control List	IP-based	●	●	●	●	●	●
	MAC-based	●	●	●	●	●	●
Security	802.1x Port-based Authentication	●	●	●	●	●	●
	MAC Binding	●	●	●	●	●	●
	MAC Filtering	●	●	●	●	●	●
	Port Security	●	●	●	●	●	●
Management	IPv6 / IPv4	●/●	●/●	●/●	●/●	●/●	●/●
	Console (RS232)	RJ45 Console	RJ45 Console	RJ45 Console	RJ45 Console	RJ45 Console	RJ45 Console
	Telnet	●	●	●	●	●	●
	Web Management	●	●	●	●	●	●
	SNMP	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3	v1, v2c, v3
	RMON	1, 2, 3, 9	1, 2, 3, 9	1, 2, 3, 9	●	●	●
	SSH/SSL	●/●	●/●	●/●	●/●	●/●	●/●
	Firmware Upgrade	HTTP, TFTP	HTTP, TFTP	HTTP, TFTP	HTTP, TFTP	HTTP, TFTP	HTTP, TFTP
	Configuration backup/recovery	●	●	●	●	●	●
	Single IP Management	-	-	-	-	-	-
	Syslog	●	●	●	●	●	●
Physical	Dimensions (W x D x H)	330 x 155 x 43.5 mm	440 x 200 x 44 mm	440 x 200 x 44 mm	440 x 300 x 44.5 mm, 1U height	440 x 200 x 44.5 mm, 1U height	440 x 300 x 44.5 mm, 1U height
	Power Supply	100~240V AC, 50/60Hz -48V DC RPS			AC 100~240V, 50/60Hz		
	EMI/Safety	FCC Class A, CE	FCC Class A, CE	FCC Class A, CE	FCC Part 15 Class A, CE		

Industrial Fiber Switches / Media Converters

PLANET Industrial Ethernet Solution offers high reliability and security to ensure continuous industrial operation in harsh environments such as factory floors, outdoors, and places with extreme temperatures. The Industrial Ethernet upgrades the traditional, proprietary factory-floor networks to a low-cost, high-performance, and scalable architecture. PLANET Industrial Ethernet switches and converters integrate 100/1000 Fiber technology with highly-reliable and long-reach data transmission. PLANET provides suitable product portfolio for information level, control level, and device level in the Industrial Ethernet network.

Fiber-Optic Link Capability Extends the Range of Network Deployment

The SFP slots built in with PLANET Industrial Fiber Switches are compatible with 100BASE-FX or 1000BASE-SX/LX/WDM through SFP (Small Form Factor Pluggable) fiber-optic transceivers. The fiber-optic uplink capability guarantees the throughput to all nodes hooked into the network and the Gigabit Ethernet distance can be extended from 550 meters (Multi-mode fiber cable) up to 10/20/30/40/50/70/120 kilometers (Single-mode fiber or WDM fiber).



Industrial Managed / PoE Switches

		Managed				PoE		
Model		IGS-10080MFT	IGS-5225-8T2S2X	WGS-5225-8T2SV	WGS-4215-8T2S	WGS-4215-8P2S	WGS-5225-8P2SV	IGS-5225-8P2S2X
Product Image								
			TAIWAN EXCELLENCE 2017 10G	Touch LCD			Touch LCD	TAIWAN EXCELLENCE 2017 10G
Hardware	LCD	-	-	2.4" Color TFT touch screen	-	-	2.4" Color TFT touch screen	-
	10/100/1000BASE-T	2	8	8	8	8	8	8
	10/100BASE-TX	-	-	-	-	-	-	-
	1000 mini-GBIC	8	2	2	2	2	2	2
	100BASE-FX	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
	10G SFP+ Slot	-	2	-	-	-	-	2
	Switch Fabric	20Gbps	60Gbps	20Gbps	20Gbps	20Gbps	20Gbps	60Gbps
	DI/DO	-	2/2	-	-	-	-	2/2
Power	Inputs	Dual 12~48V DC or 24V AC		Dual 12~48V DC or 24V AC		Dual 48~56V DC	Dual 48~56V DC	Dual 48~56V DC
	Connector	6-pin terminal block		3-pin terminal block, DC socket		3-pin terminal block, DC socket		6-pin terminal block
	Consumption	13.92 watts	18 watts	12 watts	7.9 watts	220 watts	260 watts	260 watts
Mechanical	Dimensions (W x D x H)	72 x 107 x 152 mm	72 x 107 x 152 mm	178 x 25 x 134 mm	178 x 25 x 134 mm	178 x 25 x 134 mm	178 x 25 x 134 mm	72 x 107 x 152 mm
	Enclosure	IP30 aluminum	IP30 aluminum	IP30 metal	IP30 metal	IP30 metal	IP30 metal	IP30 aluminum
	Mounting	DIN-rail, wall-mountable		DIN-rail, wall-mountable and magnetic wall mount		DIN-rail, wall-mountable and magnetic wall mount		DIN-rail, wall-mountable
Environment	Operating Temperature	-40~75 degrees C	-40~75 degrees C	-20~70 degrees C	-40~75 degrees C	-40~75 degrees C	-20~70 degrees C	-40~75 degrees C
	Operating Humidity	5%~70% RH(Non-condensing)		5% to 95% RH (Non-condensing)		5%~70% RH(Non-condensing)		
Regulatory	Emissions	FCC Class A, CE Class A		FCC Class A, CE Class A		FCC Class A, CE Class A		
	Stability	IEC60068-2-32 (Free Fall), IEC60068-2-27 (Shock), EC60068-2-6 (Vibration)				IEC60068-2-32 (Free Fall), IEC60068-2-27 (Shock), EC60068-2-6 (Vibration)		
PoE	PoE Standard	-	-	-	-	802.3at PoE+	802.3at PoE+	802.3at PoE+
	PoE Port	-	-	-	-	8	8	8
	PoE Budget	-	-	-	-	200 watts	200 watts	240 watts
	PSE Type	-	-	-	-	End-sapn	End-span	End-span
	Power Pin Assignment	-	-	-	-	1/2(+), 3/6(-)	Pair 1: 1/2(+), 3/6(-)	Pair 1: 1/2(+), 3/6(-)
Layer 3 Features	IP Interfaces	8 VLAN	128 VLAN	8 VLAN	-	-	8 VLAN	128 VLAN
	Routing Tables	32	32	32	-	-	32	32
	Routing Protocols	IPv6/IPv4Static Routing			-	-	IPv6/IPv4 Static Routing	
	Hardware Accelerated	-	•	-	-	-	-	•
Protocol	VLAN	802.1Q VLAN, Q-in-Q, Private VLAN, MAC-based VLAN, Protocol-based VLAN, Voice VLAN and MVR			802.1Q VLAN/Q-in-Q/ Private VLAN/Protocol-based VLAN/ Voice VLAN/GVRP		802.1Q VLAN, Q-in-Q, Private VLAN, MAC-based VLAN, Protocol-based VLAN, Voice VLAN and MVR	
	IGMP Snooping	v1/v2/v3/query	v1/v2/v3/query	v1/v2/v3/query	v2/v3/query	v2/v3/query	V1/v2/v3/query	V1/v2/v3/query
	Spanning Tree	802.1w/802.1s	802.1w/802.1s	802.1w/802.1s	802.1w/802.1s	802.1w/802.1s	802.1w/802.1s	802.1w/802.1s
	Data Redundancy	ERPS Ring < 20ms	ERPS Ring < 20ms	ERPS Ring < 20ms	RSTP/MSTP	RSTP/MSTP	ERPS Ring < 20ms	ERPS Ring < 20ms
	QoS	Port-based/802.1P/IP DSCP Policy-based/Voice VLAN				Port-based/802.1P/IP DSCP Policy-based/Voice VLAN		
	Security	802.1x, Static MAC, MAC filter, Port Security and IP Security			802.1x, Static MAC, MAC filter, Port Security and IP Security		802.1x, static MAC, MAC filter, Port Security and IP security, AAA	
	Traffic Control	In/out rate limit, storm control				In/out rate limit, storm control		
Management	Interface	Console, Web, Telnet, SSH and SSL		Web, Telnet, SSH and SSL	Web, Telnet, SSH and SSL	Web, Telnet, SSH and SSL	Web, Telnet, SSH and SSL	Console, Web, Telnet, SSH and SSL
	SNMP	v1, v2c, v3, trap				v1, v2c, v3, trap		
	Alarm	Power and Port alarm		-	-	-	-	Power and Port alarm
	System Log	System Log and remote Syslog				System Log and remote Syslog		

Industrial Media Converters

		Fast Ethernet		
Model		IFT-802T	IFT-802TS15	IFT-805A
Product Image				
Copper	Copper Interface	1 x 10/100BASE-TX port, RJ45, Auto-negotiation, Auto-MDI/MDI-X		
Fiber	Optical Interface	100BASE-FX port		
	Optical Connector	SC	SC	SFP
	Optical Mode	Multi-mode	Single mode	Vary on module
	Max. Distance	2km	15km	Vary on module
	Optic Wavelength	1310nm	1310nm	Vary on module
	Fiber-optic cable	50/125μm or 62.5/125μm multi-mode fiber cable	9/125μm single mode cable	Vary on module
Mechanical	Dimensions (W x D x H)	32 x 87.8 x 135 mm		
	Weight	400g		
	Enclosure	IP30 Metal		
	Mounting	DIN-rail, Wall-mountable		
Power	Inputs	Dual 12~48V DC		
	Connector	6-Pin Removable Terminal Block		
	PoE	-		
	Consumption	4.6 watts max.		
Environment	Operating Temperature	-40~75 degrees C		
	Operating Humidity	5% to 95% RH (Non-condensing)		
Regulatory	Emissions	FCC Class A, CE Class A		
	Stability	IEC60068-2-32 (Free Fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)		
Management		-		

		Gigabit			10G
Model		IGT-1205AT	IGT-905A IGT-805AT	IGTP-805AT	IXT-705AT
Product Image					
				PoE 30 Watts	
Copper	Copper Interface	1 x 10/100/1000BASE-T, RJ45, Auto-negotiation, Auto-MDI/MDI-X			1 x10G/5G/2.5G/1G/100 NBASE-T, RJ45
Fiber	Optical Interface	100 /1000BASE-X	Vary on module	1000BASE-SX/LX	10GBASE-SR/LR
	Optical Connector	2 x SFP	SFP	1 x SFP	1 x SFP
	Optical Mode	Vary on module			Vary on module
	Max. Distance	Vary on module			Vary on module
	Optic Wavelength	Vary on module			Vary on module
	Fiber-optic cable	Vary on module			Vary on module
Mechanical	Dimensions (W x D x H)	32 x 87.8 x 135 mm			32 x 87.8 x 135 mm
	Weight	400g	405g	500g	400g
	Enclosure	IP30 Metal			IP30 Metal
	Mounting	DIN-rail, Wall-mountable			DIN-rail, Wall-mountable
Power	Inputs	Dual 12~48V DC		24V DC or 48V DC	Dual 12~48V DC
	Connector	6-Pin Removable Terminal Block			6-Pin Removable Terminal Block
	PoE	-	-	IEEE 802.3at/af PoE Injector	-
	Consumption	7.5 watts max.	7.7 watts max.	33 watts max.	8 watts max.
Environment	Operating Temperature	-40~75 degrees C	-30~75 degrees C	-40~75 degrees C	-40~75 degrees C
	Operating Humidity	5% to 95% RH (Non-condensing)			5% to 95% RH (Non-condensing)
Regulatory	Emissions	FCC Class A, CE Class A			FCC Class A, CE Class A
	Stability	IEC60068-2-32 (Free Fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)			IEC60068-2-32 (Free Fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
Management		[IGT-905A] IP-based Web / SNMP v1, v2c / RMON In-Band 802.3ah OAM / TS-1000 OAM In/Out Bandwidth Control 802.1Q VLAN / Q-in-Q VLAN TOS/DSCP/802.1p QoS TCP/UDP packet filter [IGT-1205AT/IGT-805A/IGTP-805AT] Non management			-

Media Converters

Media conversion is a cost-effective solution to extending fiber networking rapidly rather than adopting optic fiber only. It also efficiently helps to solve the distance limit between the Ethernet and Local Area Network. With the feature-rich chassis provided by PLANET, at least 16 converters can easily expand the fiber-optic networks by simply plug and play. The wiring distance of PLANET media converter chassis is extendable from 2 to 120 kilometers and available upon request as well.

Building a network solution of FTTH (Fiber to the Home) or FTTC (Fiber to the Curb) for ISPs, the PLANET Managed family of chassis and FST/GST series converters offer the multiple selections for FTTx deployment. The Managed family is a series of managed Media Conversion Center that provides hot plug and play slots for various types of converters. Through the management interface, the entire status of the converters could be remotely controlled within the chassis from on/off and status/statistics of ports, as well as the advanced features like redundant links.

Managed Media Converter Chassis

The MC-1610MR series is ideal for telecom and corporate applications where a number of fiber links need to be managed and controlled from a central location. The management function provided by the MC-1610MR series enables network administrators to monitor media converter connection status and configure the converters remotely via web browser or locally. Through the management interface, the entire status of the converters such as link on/off or statistics of the port will be clearly demonstrated and monitored.

Managed Media Converter Chassis		
Model	MC-1610MR	MC-1610MR48
Product Image		
	Managed	Managed
Slots	16 converter open slots; 2 power slots (1 loaded)	
Dimensions (W x D x H)	440 x 350 x 88 mm; 2U	
Power Requirements	100 ~ 240V AC, 50/60Hz	-48V DC (-30 ~ -60V DC)
Power Consumption	120 watts (full load)	96 watts (full load)
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)	
Converter Modules	PLANET FST-80x, GST-80x series (Page 11)	
Management	SNMP v1/v2C, Web, CLI, SSH	
Management Ports	1 x RS232 Console 1 x 10/100BASE-TX RJ45; Auto-MDI, Auto-Negotiation	
Features	System Temperature Threshold Protection, Slot Redundancy, Hot-swappable dual power system, SNMP trap	
Emission	CE, FCC class A	

Web / SNMP Management

- OAM
- Device Control
- Redundant Link
- Link Status Monitoring
- SNMP Trap Alarm

Hot-Swappable / Flexible Power Input

Dual AC

Dual DC

DC + AC

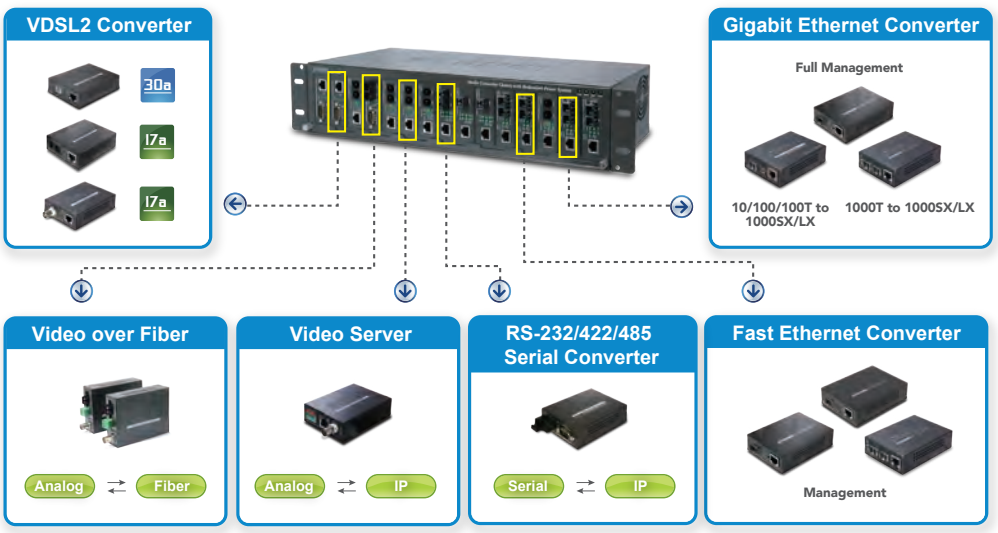
Power Module

Standard Media Converter Chassis

The MC-1500 series provides 15 slots for PLANET's full-ranging media converters, including Fast Ethernet, Gigabit Ethernet or VDSL2 Converters. The 15 slots in the 19" rack-mountable housing help to save more spaces for Fiber-Optic wiring, simplify the structure and ease the maintenance of media conversion. With an independent power supply on each slot of the MC-1500 series, any converter is hot-swappable without causing an interruption to other converters. Each bay of the media converter chassis can be populated with any of PLANET's media converter series, the FT, GT, VC-20x and ICS, to provide media conversion between fiber optic, phone wire, serial and copper lines, offering high flexibility in installation and cost-effective scalable solution.

Standard Media Converter Chassis				
Model	MC-700	MC-1500	MC-1500R	MC-1500R48
Product Image				
Slots	7 converter open slots	15 converter open slots	15 converter slots; 2 power slots (1 loaded)	
LED Indicators	Power x 1 Fan x 1	Power x 1 Fan x 2	Power x 2 Fan x 2	Power x 2 Fan x 2
Dimensions	217 x 140 x 88.5 mm 2U	440 x 180 x 103 mm 2.4U	440 x 180 x 103 mm 2.4U	440 x 180 x 103 mm 2.4U
Weight	2kg	5kg	5.5kg	5.5kg
Power Requirements	100 ~ 240V AC, 50/60Hz	100 ~ 240V AC, 50/60Hz	100 ~ 240V AC, 50/60Hz	-48V DC (-30 ~ -60V DC)
Power Consumption	40 watts (full load)	75 watts (full load)	90 watts (full load)	90 watts (full load)
Power Output per Slot	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.
Environment	Operating Temperature: 0~50 degrees C Storage Temperature: -10~70 degrees C Humidity: 10~90% RH (operating), 5~90% RH (Storage)		Operating Temperature: 0~50 degrees C Storage Temperature: -10~70 degrees C Humidity: 10~90% RH (operating), 5~90% RH (Storage)	
Converter Modules	PLANET FT-80x, FT-90x, FT-1205A, GT-80x, GT-90x, GT-1205A, VC-201A/202A, VC-231, VC-213G/232G, ICS-10x series, VF-10XG series (Page 12)			
Emission	CE, FCC class A	CE, FCC class A	CE, FCC class A	CE, FCC class A
Installation	Rack Mounting	Rack Mounting	Rack Mounting	Rack Mounting

Multi-function Converter Chassis



Media Converters

Smart Gigabit Ethernet Media Converters

Model	GST-802	GST-802S	GST-806A15	GST-806B15	GST-806A60	GST-806B60	GST-805A
Product Image							
Ports	1 x 10/100/1000BASE-T RJ45; Auto-MDI, Auto-Negotiation, 1 x 1000BASE-SX / LX						
Optic Interface	MM SC	SM SC	SM WDM SC	SM WDM SC	SM WDM SC	SM WDM SC	SFP
Wavelength	850nm	1310nm	TX: 1310nm RX: 1550nm	TX: 1550nm RX: 1310nm	TX: 1310nm RX: 1550nm	TX: 1550nm RX: 1310nm	Vary on module
Max Distance	220 / 550 m	10km	15km	15km	60km	60km	Vary on module
Dimensions (W x D x H)	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm
Power	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.
Power Consumption	8.5 watts max.	8.5 watts max.	8.5 watts max.	8.5 watts max.	8.5 watts max.	8.5 watts max.	8.5 watts max.
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)						
DIP Switch	DIP 1: Fiber Forced Mode, DIP 2: Fiber LLC Enable / Disable						
Features	9K Jumbo Frame; IEEE 802.3ah, TS-1000 OAM, In-band management, Remote loopback, Dying gasp event notification						
Applied Chassis	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48	MC-1610MR / MC-1610MR48

Smart Fast Ethernet Media Converters

Model	FST-801	FST-802	FST-802S15	FST-802S35	FST-802S50	FST-806A20	FST-806B20
Product Image							
Ports	1 x 10/100BASE-TX RJ45; Auto-MDI, Auto-Negotiation, 1 x 100BASE-FX				1 x 10/100BASE-TX RJ45; Auto-MDI, Auto-Negotiation, 1 x 100BASE-FX		
Optic Interface	MM ST	MM SC	SM SC	SM SC	SM SC	SM WDM SC	SM WDM SC
Wavelength	1310nm	1310nm	1310nm	1310nm	1310nm	TX: 1310nm, RX: 1550nm	TX: 1550nm, RX: 1310nm
Max Distance	2km	2km	15km	35km	50km	20km	20km
Dimensions (W x D x H)	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm	94 x 81 x 26 mm
Power	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.
Power Consumption	6.7 watts	6.7 watts	6.7 watts	6.7 watts	6.7 watts	6.7 watts	6.7 watts
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)						
DIP Switch	6; TP speed, TP negotiation, TP/FX duplex mode, LLCF, LLR						
Features	Smart managed via MC-16xx for both FST-80x/FST-81x						
Applied Chassis	MC-1610MR / MC-1610MR48		MC-1610MR / MC-1610MR48		MC-1610MR / MC-1610MR48		MC-1610MR / MC-1610MR48

PoE Gigabit / Fast Ethernet Media Converters

Model	GTP-802	GTP-802S15	GTP-805A	FTP-802	FTP-802S15
Product Image					
Ports	1x 10/100/1000BASE-T RJ45, Auto-negotiation, 1000BASE-SX/LX			1x 10/100BASE-TX RJ45, Auto-negotiation, 100BASE-FX	
Fiber Interface	MM SC	SM SC	SFP (LC)	MM SC	SM SC
Fiber Cable Wavelength	850nm	1310nm	Vary on SFP Module	850nm	1310nm
Max Distance	220m & 550m	10km	Vary on SFP Module	2km	15km
Dimensions (W x D x H)	97 x 70 x26 mm			97 x 70 x26 mm	
Power Requirements	52V DC, 0.6A max.			48V DC, 0.35A max.	
Power Consumption	36 Watts max. with PoE load			21 Watts max. with PoE load	
Environment	Operating Temperature: 0 ~50 degrees C Humidity: 5% ~ 90% RH (non-condensing)				
IEEE 802.3at / 802.3af PoE Port	1, End-Span, 1/2(+), 3/6(-)			1, End-Span, 1/2(+), 3/6(-), 802.3af only	
LFP DIP Switch	ON / OFF	ON / OFF	ON / OFF	ON / OFF	ON / OFF
Enclosure	Metal Case	Metal Case	Metal Case	Metal Case	Metal Case
Installation	DIN rail kit and wall mount ear			DIN rail kit and wall mount ear	
Stability Testing	N/A	N/A	N/A	N/A	N/A

Dual SFP Fast / Gigabit Ethernet Media Converters

Model	FT-1205A	GT-1205A
Product Image		
Ports	1 10/100BASE-TX 2 100BASE-FX	1 10/100/1000BASE-T 2 1000BASE-SX/LX
Optic Interface	SFP	SFP
Wavelength	Vary on module	Vary on module
Max Distance	Vary on module	Vary on module
Dimensions (W x D x H)	94 x 70 x 26 mm	94 x 70 x 26 mm
Power	5V DC, 2A max.	5V DC, 2A max.
Power Consumption	5.7 watts max.	5.4 watts max.
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)	
Features	DIP switch for 3-port Switch mode, redundant mode support	-
Applied Chassis	MC-700 / MC-1500 / MC-1500R / MC-1500R48	

Managed Gigabit Ethernet Media Converters / Managed Fast Ethernet Media Converters

Model	GT-902	GT-902S	GT-905A	FT-902	FT-902S15	FT-905A
Product Image						
Ports	1 x 10/100/1000BASE-T RJ45; Auto-MDI, Auto-Negotiation, 1 x 1000BASE-SX / LX			1 x 10/100BASE-TX RJ45; Auto-MDI, Auto-Negotiation, 1 x 100BASE-FX		
Optic Interface	MM SC	SM SC	SFP	MM SC	SM SC	SFP
Wavelength	850nm	1310nm	Vary on module	1310nm	1310nm	Vary on module
Max Distance	220/550m	10km	Vary on module	2km	15km	Vary on module
Dimensions (W x D x H)	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm
Power	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.
Power Consumption	5.6 watts max.	5.6 watts max.	5.6 watts max.	5.5 watts max.	5.5 watts max.	5.5 watts max.
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)			Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)		
Management	Web, SNMPv1, v2c, Smart Discovery utility, Dying Gasp			Web, SNMPv1, v2c, Smart Discovery utility		
Features	Max. Packet Size: 9K Jumbo Frame VLAN: 802.1q VLAN, QinQ VLAN Priority: 802.1p, IP DSCP, WRR QoS policy Remote Management: IEEE 802.3ah, TS-1000 OAM, In-band management, Remote loopback			Max. Packet Size: 2Kbytes VLAN: 802.1q VLAN, QinQ VLAN Priority: 802.1p, IP DSCP, WRR QoS policy Remote Management: IEEE 802.3ah, TS-1000 OAM, In-band management, Remote loopback		
Applied Chassis	MC-700 / MC-1500 / MC-1500R / MC-1500R48			MC-700 / MC-1500 / MC-1500R / MC-1500R48		

Gigabit Ethernet Media Converters / Fast Ethernet Media Converters

Model	GT-802	GT-802S	GT-805A	FT-801	FT-802	FT-802S15	FT-806A20	FT-806B20
Product Image								
Ports	1 x 10/100/1000BASE-T RJ45; Auto-MDI, Auto-Negotiation, 1 x 1000BASE-SX / LX			1 x 10/100BASE-TX RJ45; Auto-MDI, Auto-Negotiation, 1 x 100BASE-FX				
Optic Interface	MM SC	SM SC	SFP	MM ST	MM SC	SM SC	SM SC	SM WDM SC
Wavelength	850nm	1310nm	Vary on module	1310nm	1310nm	1310nm	TX: 1310nm RX: 1550nm	TX: 1550nm RX: 1310nm
Max Distance	220/550m	10km	Vary on module	2km	2km	15km	20km	20km
Dimensions (W x D x H)	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm	94 x 70 x 26 mm
Power	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.	5V DC, 2A max.
Power Consumption	5 watts max.	5 watts max.	5 watts max.	5.5 watts	5.5 watts	5.5 watts	5.5 watts	5.5 watts
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)			Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)				
Features	9K Jumbo Frame, TS-1000 / OAM support			LFP, FX duplex mode selection				
Applied Chassis	MC-700 / MC-1500 / MC-1500R / MC-1500R48			MC-700 / MC-1500 / MC-1500R / MC-1500R48				

Video over Fiber Media Converters

Model	VF-101G-KIT	VF-102G-KIT	VF-106G-KIT	VF-402-KIT
Product Image				
Ports	1 x Fiber, 1 x BNC (75ohm / unbalanced interface)			1 x Fiber, 4 x BNC (75ohm / unbalanced interface)
Optic Interface	ST	FC	WDM-SC	FC
Wavelength	T model: TX 1310nm RX 1550nm R model: TX 1550nm RX 1310nm			
Max Distance	20km for single mode			
Video Type	1080p: AHD/TVI/CVI 480p: CVBS			
Dimensions (W x D x H)	94 x 70 x 26 mm			157 × 116.5 × 48 mm
Power / Power Consumption	5V DC, 2A max./4.8 watts max.			5V DC, 2A max./4.8 watts max.
Environment	Operating Temperature: : -25 ~ 70 degrees C, Humidity: 0 ~ 95% RH (non-condensing)			
Video Type	1080p: AHD/TVI/CVI 480p: CVBS			
Video Specifications	1 bi-directional channel; NTSC/PAL system compliant; 6.5MHz video bandwidth; SNR Weighted @63db (typical)			4 bi-directional channel; NTSC/PAL system compliant; 6.5MHz video bandwidth; SNR Weighted @63db (typical)
Data Interface Specifications	1 simplex channel RS485: 115.2kbps data rate max.; Bit Error Rate @10ns			
Applied Chassis	MC-700 / MC-1500 / MC-1500R / MC-1500R48			-

Serial over Fast Ethernet Media Converters

Model	ICS-100	ICS-105A
Product Image		
Ports	1 x 10/100BASE-TX 1 x DB9	1 x 100BASE-FX 1 x DB9
Optic Interface	-	SFP
Wavelength	-	Vary on SFP Module
Max Distance	100m UTP	550m ~ 120km Vary on SFP Module
Serial Interface	3-in-1 DB9, RS232, RS422 and RS485 (2/4-wire)110 to 921Kbps	
Dimensions	94 x 70 x 26 mm	
Power	5V DC, 2A max.	
Power Consumption	5.5 watts	
Environment	Operating Temperature: 0 ~ 50 degrees C Humidity: 5% ~ 90% RH (non-condensing)	
Features	Web Management, VCOM utility, PLANET Smart Discovery Multiple operating modes	
Applied Chassis	MC-700 / MC-1500 / MC-1500R / MC-1500R48	

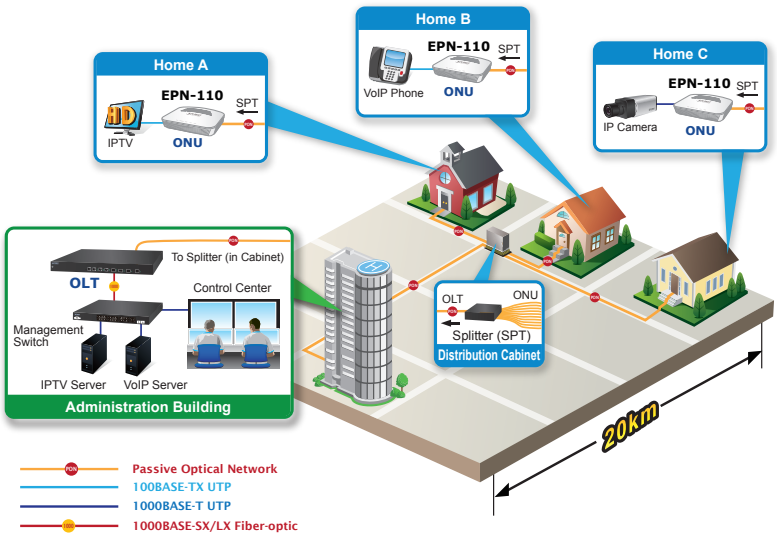
Passive Optical Network - GEPON

Passive Optical Network (PON) would be the most promising Next Generation Network technology to meet the high bandwidth demand for HDTV, IPTV, VoIP and multimedia broadband applications. PON technology is developed to support PMP (Point-to-Multi-Point) applications and offers the advantages of reduced cost by sharing the equipment and fiber at the CO, and easy maintenance compared to the active equipment.

PLANET offers the perfect GEPON OLT and ONU solutions bringing the FTTx applications with high scalability yet cost-effective network connection. The competitive advantages of PLANET GEPON OLT and ONU solutions include:

- High split ratio of 1:64
- Up to 20km distance between equipment nodes
- Centralized management with user-friendly GUI utility
- Easy installation and maintenance
- Lower operating costs from the reduction of "active" components

Fiber To The Home (FTTH) Application



Network Connectivity Products

GEPON OLT	
Model	EPL-2220
Product Image	
Transmission Speed	Downstream: 1.25 Gbps Upstream: 1.25 Gbps
Ethernet Port	2 x 1000BASE-T RJ45, 2 x Gigabit SFP interface
PON Port	2 x PON interface
Console Port	●
Management Port	1 x 10/100 RJ45 port
Maximum Splits	64 per PON port
Maximum Distance	20km
IEEE 802.3ah	●
IEEE 802.3ah FEC	●
OAM	●
DBA	●
SLA	●
802.1Q VLAN	●
802.1p QoS	●
IGMP	IGMP Snooping
MAC Filtering	●
128-bit AES Encryption	–
802.1X Authentication	–
Logical Link IDs (LLID)	256
MAC Address	16k
Queues	4
GUI Management	●
ONU Management	●
Bandwidth Control	●

GEPON ONU	
Model	EPN-110
Product Image	
Transmission Speed	Downstream: 1.25Gbps Upstream: 1.25Gbps
Ethernet Port	1 x 10/100/1000Mbps RJ45 Port
PON Port	1 x PON interface with SC Type Connector
Maximum Distance	20km
IEEE 802.3ah	●
IEEE 802.3ah FEC	●
OAM	●
DBA	●
802.1Q VLAN	-
802.1p QoS	-
128-bit AES Encryption	-
802.1X Authentication	-
Logical Link IDs (LLID)	8
MAC Address	64
Queues	-
Integrated Buffering	1.5MB
Layer 2/3/4 Classification	●
Internal MIB Counters	●

Fiber Optic Transceivers

Fast Ethernet Transceivers (100BASE-X SFP)

Model	MFB-FX	MFB-F20	MFB-F40	MFB-F60	MFB-F120	MFB-TFX	MFB-TF20
Product Image							
Speed (Mbps)	100	100	100	100	100	100	100
Connector Interface	LC	LC	LC	LC	LC	LC	LC
Fiber Mode	Multi Mode	Single Mode				Multi Mode	Single Mode
Distance	2km	20km	40km	60km	120km	2km	20km
Wavelength (nm)	1310nm	1310nm	1310nm	1310nm	1550nm	1310nm	1550nm
Operating Temp.	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	-40 ~ 75 °C	-40 ~ 75 °C

Fast Ethernet Transceivers (100BASE-BX, Single Fiber Bi-Directional SFP)

Model	MFB-TSA	MFB-TSB	MFB-FA20	MFB-FB20
Product Image				
Speed (Mbps)	100	100	100	100
Connector Interface	LC	LC	WDM(LC)	WDM(LC)
Fiber Mode	Multi Mode	Multi Mode	Single Mode	Single Mode
Distance	2km	2km	20km	20km
Wavelength (TX)	1310nm	1550nm	1310nm	1550nm
Wavelength (RX)	1550nm	1310nm	1550nm	1310nm
Operating Temp.	-40 ~ 75 °C	-40 ~ 75 °C	0 ~ 60 °C	0 ~ 60 °C

Gigabit Ethernet Transceivers (1000BASE-X/ Fiber Channel SFP)

Model	MGB-GT	MGB-SX	MGB-LX	MGB-L30	MGB-L40	MGB-L50	MGB-L70	MGB-L120	MGB-TSX	MGB-TLX	MGB-TL30	MGB-TL70
Product Image												
Speed (Mbps)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Connector Interface	Copper	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC
Fiber Mode	-	Multi Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Multi Mode	Single Mode	Single Mode	Single Mode
Distance	100m	550m	10km	30km	40km	50km	70km	120km	550m	10km	30km	70km
Wavelength (nm)	-	850nm	1310nm	1310nm	1550nm	1550nm	1550nm	1550nm	850nm	1310nm	1310nm	1550nm
Operating Temp.	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	0 ~ 60 °C	-40 ~ 75 °C	-40 ~ 75 °C	-40 ~ 75 °C	-40 ~ 75 °C

Gigabit Ethernet Transceivers (1000BASE-BX, Single Fiber Bi-Directional SFP)

Model	MGB-LA10	MGB-LB10	MGB-LA20	MGB-LB20	MGB-LA40	MGB-LB40	MGB-LA60	MGB-LB60
Product Image								
Speed (Mbps)	1000	1000	1000	1000	1000	1000	1000	1000
Connector Interface	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)
Fiber Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode
Distance	10km	10km	20km	20km	40km	40km	60km	60km
Wavelength (TX)	1310nm	1550nm	1310nm	1550nm	1310nm	1550nm	1310nm	1550nm
Wavelength (RX)	1550nm	1310nm	1550nm	1310nm	1550nm	1310nm	1550nm	1310nm
Operating Temp.	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C

40Gbps QSFP+ (40Ethernet/40GBASE)

Model	QSFP-40G-SR4	QSFP-40G-LR4
Product Image		
Speed (Mbps)	40G	40G
Connector Interface	MPO	LC
Fiber Mode	Multi Mode	Single Mode
Distance	Up to 100m	10km
Wavelength (nm)	850nm	1310nm
Operating Temp.	0 ~ 60°C	0 ~ 60°C

10Gbps SFP+ (10G Ethernet/10GBASE)

Model	MTB-SR	MTB-LR	MTB-LA20	MTB-LB20	MTB-LA40	MTB-LB40	MTB-LA60	MTB-LB60
Product Image								
Speed (Mbps)	10G	10G	10G	10G	10G	10G	10G	10G
Connector Interface	LC	LC	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)	WDM(LC)
Fiber Mode	Multi Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode	Single Mode
Distance	Up to 300m	10km	20km	20km	40km	40km	60km	60km
Wavelength (nm)	850nm	1310nm	TX:1270nm RX:1330nm	TX:1330nm RX:1270nm	TX:1270nm RX:1330nm	TX:1330nm RX:1270nm	TX:1270nm RX:1330nm	TX:1330nm RX:1270nm
Operating Temp.	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C	0 ~ 60°C

100G QSFP28

Model	QSFP-100G-SR4	QSFP-100G-LR4
Product Image		
Speed (Mbps)	100G	100G
Connector Interface	MPO	LC
Fiber Mode	Multi Mode	Single Mode
Distance	Up to 100m	10km
Wavelength (nm)	850nm	1310nm
Operating Temp.	0 ~ 60°C	0 ~ 60°C

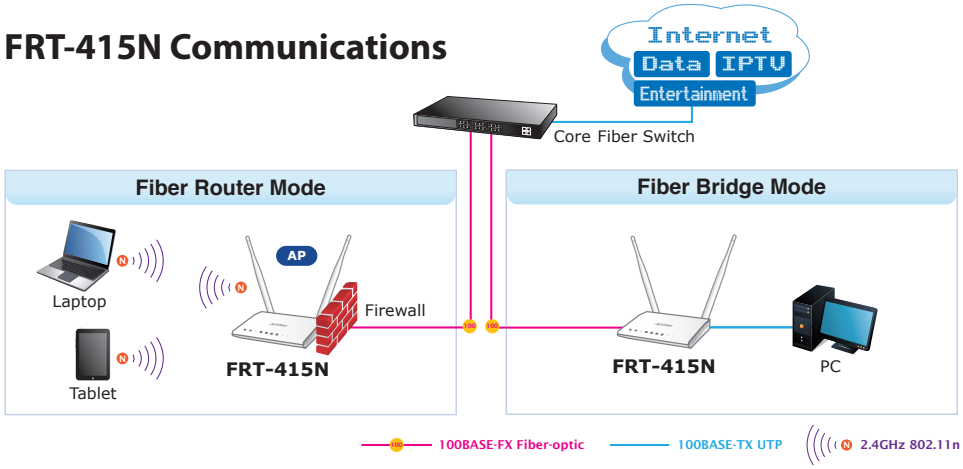
Edge Connecting Products

Metro Edge Switches				
Model	WGSD-10020	IGS-10020MT	GSD-1020S	GSD-1002M
Features	IPv6/IPv4 L2 Switch	Industrial IPv6/IPv4 L2 Switch	IPv6/IPv4 L2 Switch	Industrial L2 Managed Switch
Product Image				
1000BASE-X	2 SFP	2 SFP	2 SFP	2 SFP
10/100/1000BASE-T	8	8	8	2
100BASE-FX	Compatible	Compatible	Compatible	Compatible
10/100BASE-TX	-	-	-	8
Power Requirements	100~240V AC	12~48V DC	100~240V AC	100~240V AC PoE 48V DC
Operating Temperature	0~50 degrees C	-40~75 degrees C	0~50 degrees C	0~50 degrees C

Metro Edge Routers / CPE	
Model	FRT-415N
Features	Fiber Router
Product Image	
1000BASE-X	-
10/100/1000BASE-T	-
100BASE-FX	1 x 100BASE-FX SFP
10/100BASE-TX	4 x 10/100BASE-TX
Wireless	802.11b/g/n
Power Requirements	12V DC, 0.5A
Operating Temperature	0~40 degrees C

Fiber Network Adapters			
Model		ENW-9701	ENW-9801
Features		Gigabit NIC	10G SFP+ NIC
Product Image			
Attached Interface		X1 PCI Express	X8 PCI Express
Network Interface		1000BASE-X	10GBASE-SR/LR
Media Interface		SFP	SFP+
OS Support	Windows 7	●	●
	Windows XP	●	-
	Windows 2008	●	●
	Linux	●	●

FRT-415N Communications



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