



Chameleon

POWER AND FIBER DISTRIBUTION
INNOVATIVE PoE EXTENSION



**Fiber
Connections Inc.**
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MORE CONNECTED THAN EVER

Network expansion and increased data speeds are growing at an exponential rate. Now with the evolution of 5th generation mobile networks and the Internet of Things, the number of devices that will require network connectivity could reach into the billions. Wireless access points, cameras, traffic monitoring, surveillance systems, and emergency lighting are a few of the IoT devices and applications that will be connected and, in many cases, need PoE to power them.

PUSHING THE LIMITS

These ever-growing networks will now have to expand into areas that may not have access to local power. Perhaps it is not available or for some reason not accessible for use. In these cases, the installers must either run power to the desired location or will have to find a way to use the existing power if available. If the remote devices are PoE enabled, then a solution is needed to send both power and data efficiently between the switch and the devices.



SIMPLICITY IS KEY

Fiber Connections Inc. has developed a system that uses a hybrid power and fiber cable to help overcome distance limitations allowing for PoE to be extended far beyond the 90-meter length that category cables are limited to. The Chameleon System, featuring the GatorLink™, is modular, easy to deploy, and adaptable to virtually any number of devices and applications. Furthermore, the power distributed is low voltage Class II which means that installers do not have to be licensed electricians to deploy the system.



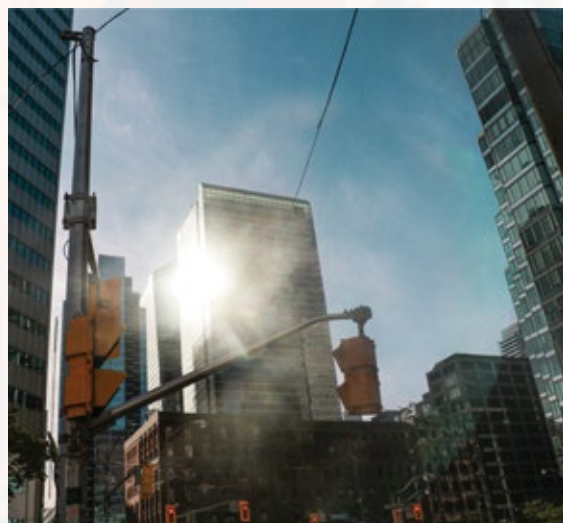
THE BUILDING BLOCKS

The Chameleon System has three basic components; the source end (head end), the remote end, and the composite cable connecting the two. Whether connecting just one or multiple devices, **The Chameleon System can make it happen.**

HEAD END POWER

The source end consists of a GatorLink™ (to connect to one device) or a Power Patch Panel (to connect to multiple devices). The source is plugged into an AC power supply and is converted to 56V DC power. Media conversion can also be supplied if needed.

The Power Patch Panel is modular and scalable. The rack mountable panel has a 2U or a 4U option. Media modules and power supplies are bought separately and as needed and simply slide into slots in the Power Patch Panel chassis. The media module interfaces with the incoming fiber from the hybrid cable at the back with either LC connectors or MTP™ connectors depending on the number and the layout of the devices that need to be connected. The power supplies provide power to both the media modules and the remote GatorLinks™.



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1 PORT REMOTE GATORLINK™



6 PORT REMOTE GATORLINK™



1 PORT INDUSTRIAL GATORLINK™



2U POWER PATCH PANEL



SINGLE SLOT POWER SUPPLY



MEDIA MODULE MTP™ INTERFACE



MEDIA MODULE LC INTERFACE



AT THE REMOTE END

Remote GatorLinks™ draw power from the source via the hybrid (fiber/copper) cable. Also available is an outdoor GatorLink™ that is IP67 rated and can be mounted virtually anywhere. At the head end, the hybrid cable interconnects with either a Source GatorLink™ or Power Patch Panel where power is readily available. In either scenario you will have the ability to centrally power and backup all the PoE devices in your network.

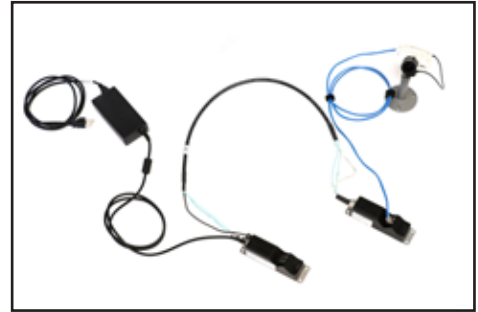
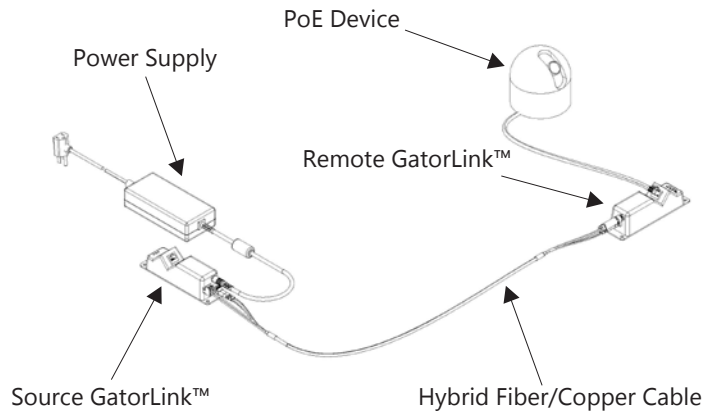
GETTING FROM A TO B

The hybrid cable assemblies allow a single cable trunk to provide data over fiber and power over copper between the source and remote locations. Typically, these cables are constructed with either 12 AWG or 18 AWG copper conductors and 2-12 fibers. The LC hybrid cable can be pre-terminated or shipped in bulk and terminated on site. The MTP™ version is factory terminated only. Also available is a pre-terminated IP-One LC hybrid cable that connects with the outdoor GatorLink™ mentioned above.



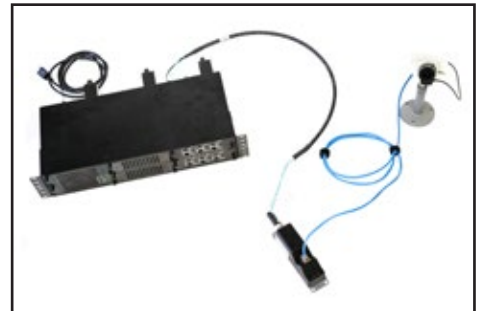
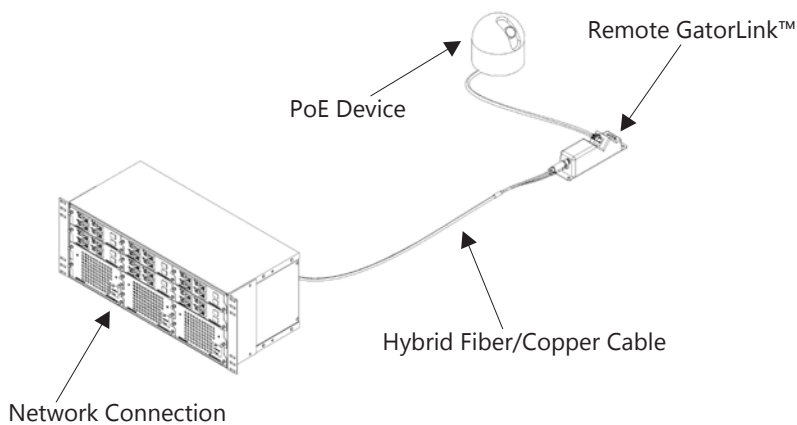
SINGLE PORT SYSTEMS

Source GatorLink™ with AC power supply and a remote GatorLink™, a hybrid cable terminated with LC connectors.



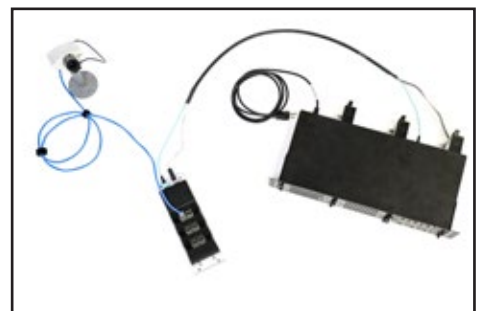
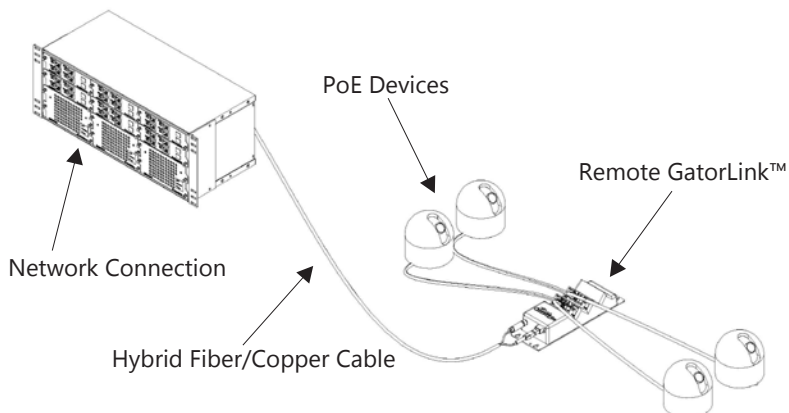
MULTIPOINT SYSTEMS WITH SINGLE PORT GATORLINKS™

A rack mounted Power Patch Panel with slide in power supply modules and slide in rear LC media modules, a hybrid cable terminated with LC connectors.



MULTIPOINT SYSTEMS (MULTIPOINT GATORLINKS™)

A rack mounted Power Patch Panel with slide in power supply modules and slide in rear MTP™ media modules and a hybrid cable terminated with MTP™ connectors.



SUMMARY

- The Chameleon System, featuring the GatorLink™, is designed to enable customers to power and retrieve data from security cameras, wireless access points, access controls, etc.
- Efficient hybrid fiber/copper interconnect allows for easy network links to remote locations.
- No external power needed at the remote location.
- No need for a certified electrician to install.
- Fiber Connections can supply schematic drawings and a detailed bill of materials for customer requirements.
- Power over Ethernet provides the perfect means to connect to low wattage devices with low risk of electrical hazard. The primary advantage of power over ethernet is the delivery of data and power over one cable. It is suitable for IT network installations, and cables for IP devices and small, out-of-the-way networks can be boosted for distances beyond 100 meters/ 300 feet for a single device with The Chameleon System.
- Power comes from a central source, rather than a collection of distributed and unconnected wall adapters. It can be backed up by an uninterruptible power supply and controlled to quickly disable or reset devices making the installation and distribution of network connections simple.
- Since PoE eliminates the need for end devices to be plugged into electrical outlets, devices such as security IP cameras and wireless access points can be located where they will be most efficient. Moves, adds and changes are easy, so devices are relocated and repositioned quickly.
- Fiber Connections Chameleon System is the perfect solution to extend PoE distances to even greater lengths.**

CHAMELEON PoE DISTANCE CONSIDERATIONS

Maximum composite cable limits are determined by considering:

- the max length of fiber based on fiber type and Ethernet speed, AND
 - the max length of copper required based on wire gauge and power levels
- whichever is less.

Power distance limits when mated with a compatible Source unit

Remote GatorLink Configuration	Remote GatorLink Part Numbers	Cable with 4X 12awg conductors		Cable with 2X 12awg conductors		Cable with 2X 16awg conductors	
		Max distance if Ethernet cord is <20 meters or less	Max distance if Ethernet cord is >20 meters	Max distance if Ethernet cord is <20 meters or less	Max distance if Ethernet cord is >20 meters	Max distance if Ethernet cord is <20 meters or less	Max distance if Ethernet cord is >20 meters
1 Port PoE (15w load)	GR10YPBY0B-004 & GR10xPSyC0S-001	7500	7000	3750	3500	925	875
1 Port PoE+ (30w load)	GR10YPBY0B-004 & GR10xPPyC0S-001	2800	2250	1400	1100	350	275
1 Port PoE++ (60w load)	GR10YPBY0B-004 & GR10xPHyC0S-001	1305	990	650	540	160	135
1 Port PoE-bt (90w load)	GR10YPBY0B-004	745	245	370	125	140	45
2 Port PoE (2x15w load)	GR20xPSyB0B-001	3000	2220	1500	1110	600	460
2 Port PoE+ (2x30w load)	GR20xPPyB0B-001	1200	600	600	300	240	120
4 Port PoE (4x15w load)	GR40xPSyM0B-001	1500	1200	750	600	300	230
4 Port PoE+ (4x30w load)	GR40xPPyM0B-001	600	320	300	165	120	60
4 Port PoE+ (Dual Class 2 - 4x30w load)	GR40xPPyD0B-002	600	300	NA	NA	NA	NA
6 Port PoE (6x15w load)	GR60xPSyM0B-001	1000	800	500	400	200	150
6 Port PoE+ (6x30w load)	GR60xPPyM0B-001	400	200	200	100	80	40

x
x
x
x
x
x
x
x
x
x
x
x
x

Exceeds class 2 circuit power levels

x= variable for fiber comm type
y= variable for fiber type

Fiber Distance Limits

	Comm protocol	Fiber Type	Distance (m)
Standards based fiber max distances (Meters)	100BaseFx	50/125 OM3	2000
	100BaseFx	50/125 OM4	2000
	100BaseLx	SM	5000
	1000Base Sx	50/125 OM3	550
	1000Base Sx	50/125 OM4	1100
	1000Base Lx	SM	5000



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