

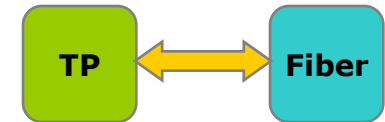
Media Conversion



- **Media Conversion Overview**
- **Market Forecast**
- **Topology & Applications**
- **Advantage of PLANET's Solution**
- **Product Features**
- **Solutions**

Media Conversion

- Convert signals between copper and fiber optic.
- Cost-effective solution to extend fiber networking compared with adopting optic fiber only.



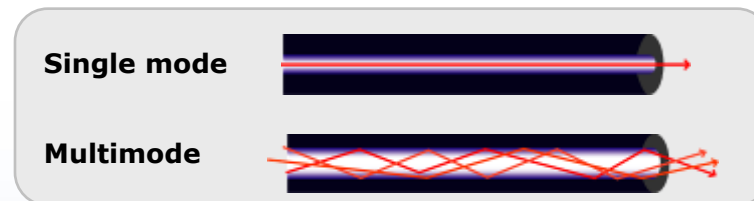
Fiber connector type

- Types of connector will vary on the network installation demand and usage.



Cable Type

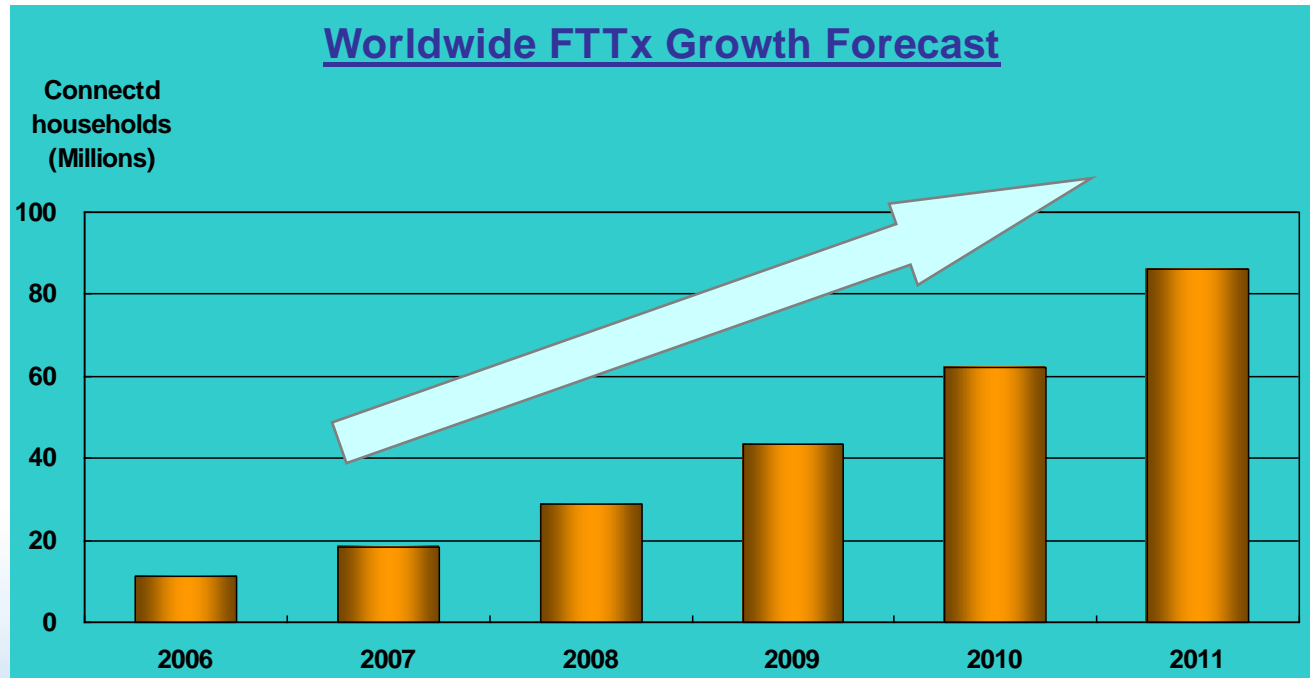
- Single mode / Multimode:



Transmission mode

- Two-wire / Single wire (WDM)
- WDM (Wavelength Division Multiplexing) runs in pair yet saving wiring cost

- According to Heavy Reading, **the total number of homes connected to fiber** will grow from about 11 million at the end of 2006 to **about 86 million at the end of 2011**, representing about 5% of all households worldwide.
- On the other hand, **Worldwide Ethernet FTTH equipment revenue** jumped 58% **and port shipments** jumped 54% in 2006. Both **will grow in the double digits annually through 2010**, according to Infonetics Research.

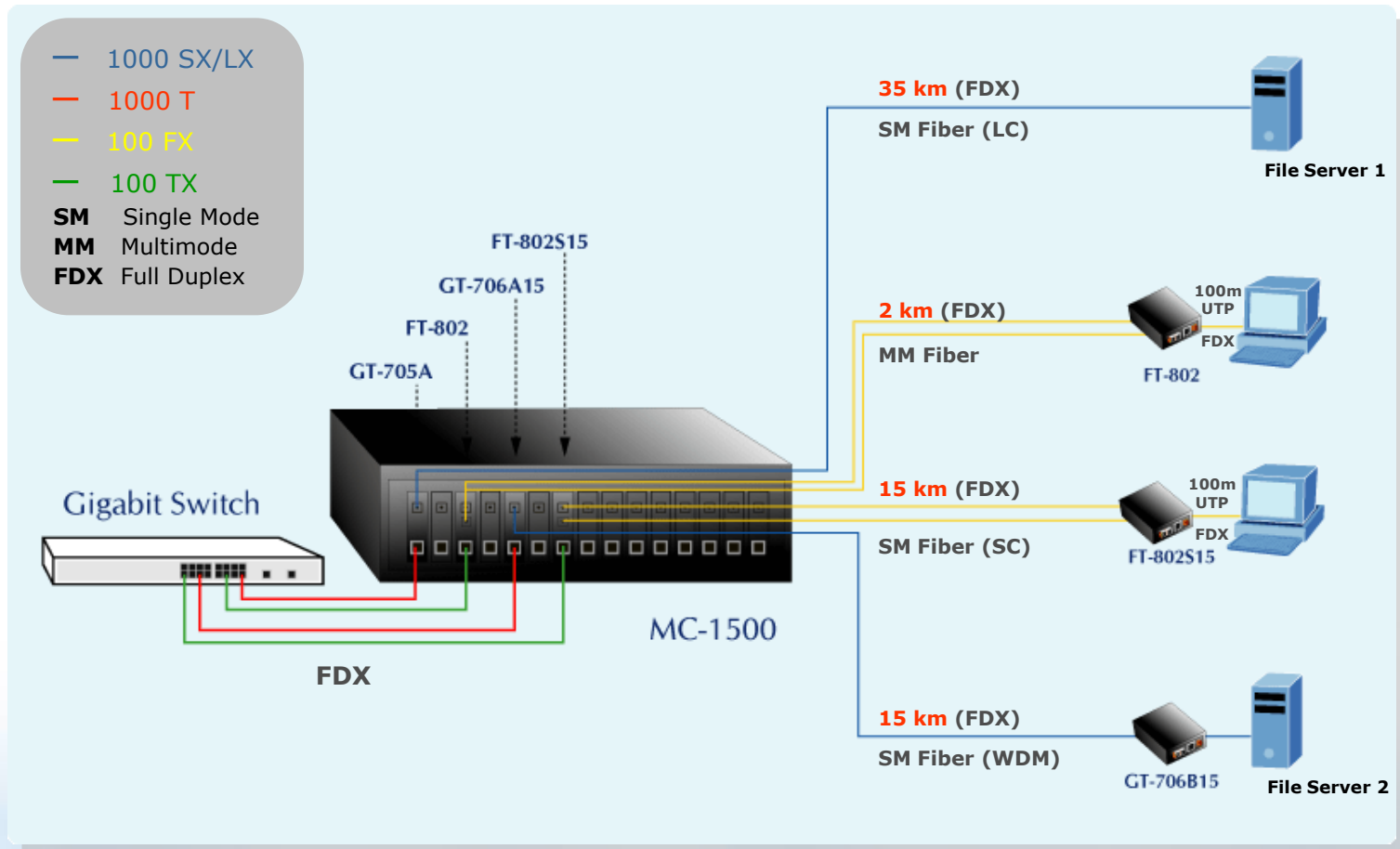


Source: Heavy Reading, USA.

Topology & Applications



■ Extend Fiber Networking Distance Efficiently



■ Full Range of Media Converters

- 10Mbps up to 1000Mbps
- ST, SC, LC, mini-GBIC, to WDM converter

■ Full Range of Distance

- From 2km to 120 km

■ For All Aspect of Fiber-Networking

- Standard, Smart and Management Converter
- Standard and Management Chassis



Product Features



Media Converter

Model	Manageable/ Smart		Web Smart	PoE
Item	GST-70x	FST-80x	FT-90x	FTP-80x
Product Type	TP to Fiber	TP to Fiber	TP to Fiber	TP to Fiber TP with PoE injector
Transmission Speed	1000T to 1000SX/LX	10/100TX to 100FX	10/100TX to 100FX	10/100TX to 100FX
Distance	550 m~100 km	2~50 km	> 2km, pending on SFP module	2~15 km

Model	Non-Management						
Item	FT-80x	GT-70x	GT-80x	FT-1105A	FT-1205A	VC-201	VC-202
Product Type	TP to Fiber	TP to Fiber	TP to Fiber	TP to Fiber (TP Redundancy)	TP to Fiber (Fiber redundancy)	TP to VDSL	TP to Coaxial
Transmission Speed	10/100TX to 100FX	1000T to 1000SX/LX	10/100/1000T to 1000SX/LX	10/100TX to 100FX	10/100TX to 100FX	Max. down/up 100 / 60Mbps	Max. down/up 100 / 60Mbps
Distance	2~50 km	550 m ~ 70 km	550 m~70 km	2~60 km	2~60 km	~1 km	~1.6 km

Media Converter Chassis

Item \ Model	Non-Management			Management
	MC-700	MC-1500	MC-1000R	MC-1600MR/ MR48
Interface	10 inch	19 inch	19 inch	19 inch
Number of Converter Slot	7	15	10	16
Redundant Power	-	-	V	V

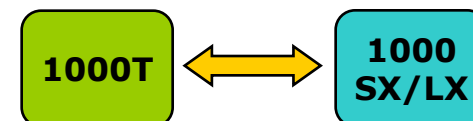
Product Features

Manageable/ Smart Media Conversion



1000T to 1000SX/LX Smart Gigabit Media Converter

- Support Link Loss Carry Forward (LLCF) / Link Loss Return (LLR)
- DIP switch for Forced mode or Auto-negotiation and LLR (enable/disable)
- Auto MDI/MDI-X for TX port
- SFP interface support for GST-705A
- WDM interface support for GST-706A/706B
- Standalone or work with PLANET Web-Smart Media Converter Chassis (**MC-1600MR**)

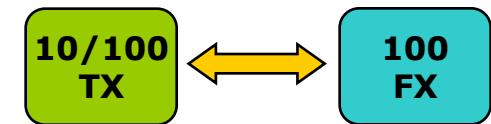


GST-70x

Model	GST-702	GST-702S20	GST-705A	GST-706A	GST-706B
Transmission Speed	1000T to 1000SX	1000T to 1000LX	1000T to 1000SX/LX	1000T to 1000LX	1000T to 1000LX
Fiber Connector	SC	SC	SFP	WDM (Wavelength: TX: 1310nm, RX: 1550nm)	WDM (Wavelength: TX: 1550nm, RX: 1310nm)
Mode	Multimode	Single mode	Single mode/ Multimode	Single mode/ Multimode	Single mode/ Multimode
Max. Fiber Distance	550m	20 km	70 km	20 km	20 km

10/100TX to 100FX Smart Media Converter

- Support Link Loss Carry Forward (**LLCF**) / Link Loss Return (**LLR**)
- Auto-MDI/MDIX for 10/100-TX port
- DIP switch for FDX/HDX, Forced/Auto-negotiation
- Store and Forward switch mechanism
- Standalone or work with PLANET Web-Smart Media Converter Chassis (**MC-1600MR**)



FST-80x

Model	FST-801	FST-802	FST-802S15	FST-806A20	FST-806B20
Fiber Connector	ST	SC	SC	WDM (Wavelength: TX: 1310nm, RX: 1550nm)	WDM (Wavelength: TX: 1550nm, RX: 1310nm)
Mode	Multimode	Multimode	Single mode	Single mode	Single mode
Max. Fiber Distance	2 km	2 km	15 km	20 km	20 km

Web Smart Media Converter Chassis

- 19-inch (MC-1600MR) rack-mountable, 2.4U high
- **16-slot media converter chassis, with hot swappable slot**
- Per-slot power isolation for hot-swap and per slot protection
- **Redundant power – dual power slot either universal power or 48VDC power system**
- Sufficient power supply system
- Reduce the effort of converter maintenance and management
- **Support PLANET FST and GST series media converters**
- Web Smart support
- Redundant link support



MC-1600MR



-48V DC

RPS-MR48

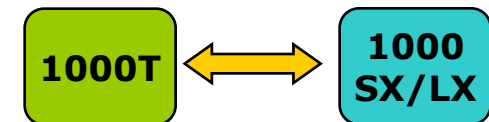
Product Features

Standard Media Conversion



1000T to 1000SX/LX Gigabit Ethernet Converter

- DIP switch for Auto-Negotiation mode or Forced Full-duplex mode
- Auto MDI/MDI-X for TP port
- Full-Duplex mode support
- SFP (mini-GBIC) port support (GT-705A)
- WDM interface support (GT-706A/706B)
- Standalone or work with PLANET MC-family



GT-70x

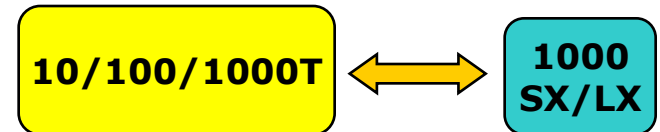


GT-705A
SFP (mini-GBIC) support

Model	GT-702	GT-702S	GT-705A	GT-706A15 / A60	GT-706B15 / B60
Transmission Speed	1000T to 1000SX	1000T to 1000LX	1000T to 1000SX/LX	1000T to 1000LX	1000T to 1000LX
Fiber Connector	SC	SC	SFP	WDM (Wavelength: TX: 1310nm, RX: 1550nm)	WDM (Wavelength: TX: 1550nm, RX: 1310nm)
Mode	Multimode	Single mode/ Multimode	Single mode/ Multimode	Single mode/ Multimode	Single mode/ Multimode
Max. Fiber Distance	550 m	10km	70 km	15 km / 60 km	15 km / 60km

10/100/1000Base-T to 1000SX/LX Gigabit Ethernet Converter

- TP port supports 10/100/1000Base-T auto-negotiation and auto-MDI/MDI-X
- IEEE 802.3x Full-Duplex Flow-Control eliminate the loss of packets
- Auto MDI/MDI-X for TP port
- Full-Duplex mode support
- SFP (mini-GBIC) port support (GT-805A)
- WDM interface support (GT-806A/806B)
- Standalone or work with PLANET MC-family
- Wall-mountable design



GT-80x

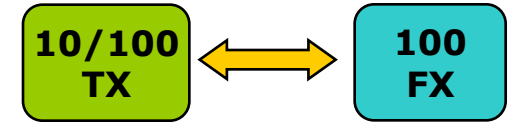


GT-805A
SFP (mini-GBIC) support

Model	GT-802	GT-802S	GT-805A	GT-806A15 / A60	GT-806B15 / B60
Transmission Speed	10/100/1000T to 1000SX	10/100/1000T to 1000LX	10/100/1000T to 1000SX/LX	10/100/1000T to 1000LX	10/100/1000T to 1000LX
Fiber Connector	SC	SC	SFP	WDM (Wavelength: TX: 1310nm, RX: 1550nm)	WDM (Wavelength: TX: 1550nm, RX: 1310nm)
Mode	Multimode	Single mode/ Multimode	Single mode/ Multimode	Single mode	Single mode
Max. Fiber Distance	550 m	10km	70 km	15 km / 60 km	15 km / 60km

10/100TX to 100FX Fast Ethernet Converter/ Bridge

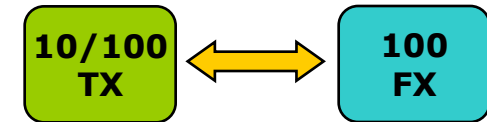
- Support Link Loss Carry Forward (LLCF) / Link Loss Return (LLR)
- Auto-MDI/MDIX for 10/100-TX port
- DIP switch for FDX/HDX, Forced/ Auto-negotiation (exclude FT-807)
- Store and Forward switch mechanism
- Full range of wiring distance, from 2 km up to 100km distance support upon request
- WDM interface support (FT-806A20/B20)
- Standalone or work with PLANET MC-family



Model	FT-801	FT-802	FT-802Sn	FT-803	FT-804	FT-806A20	FT-806B20
Fiber Connector	ST	SC	SC	MT-RJ	VF-45	WDM (Wavelength: TX: 1310nm, RX: 1550nm)	WDM (Wavelength: TX: 1550nm, RX: 1310nm)
Mode	Multimode	Multimode	Single mode	Multimode	Multimode	Single mode	Single mode
Max. Fiber Distance	2 km	2 km	15, 35, 50 km	2 km	2 km	20 km	20 km

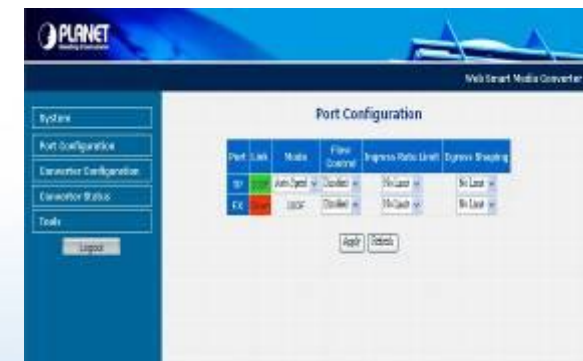
10/100TX to 100FX Web Management Media Converter

- **Web Smart** Management
- Store and Forward Switch mechanism
- Monitor and setup the converter, speed, duplex through web browser
- Compact size work with **MC-7/10/15** family media chassis
- LLCF/LLR, Loop back test support



FT-90x

Model	FT-902	FT-905A
Fiber Connector	SC	100Base SFP
Mode	Multimode	Multimode, Single Mode and WDM
Max. Fiber Distance	2 km	Depends on SFP module

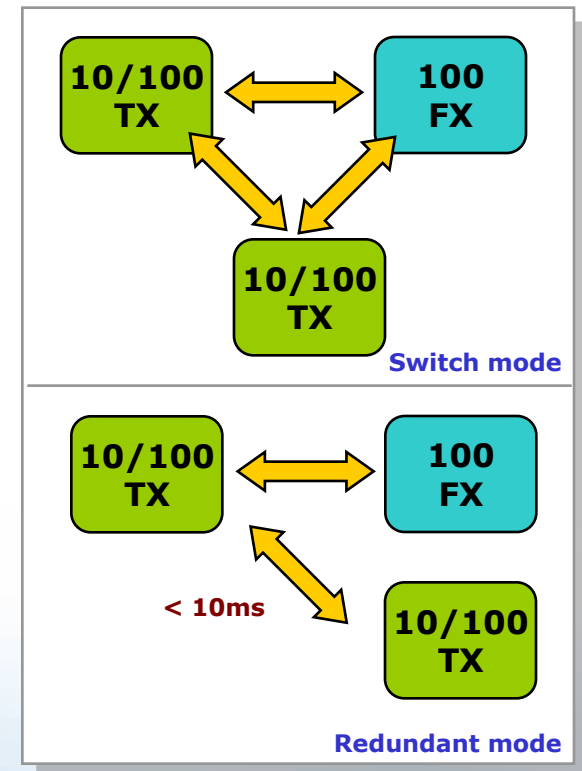


10/100TX to 100FX Redundant Media Converter

- **3-port Media Converter**
 - Dual 10/100Base-TX TP
 - One 100Base-FX Fiber optic
- **Store and Forward Switch mechanism**
- **Either 3-port switch mode or 2-port conversion with redundant mode**
- **Compact size work with MC family media chassis**
- **LLCF/LLR, Loop back test support**
- **Standalone or work with PLANET MC-7/10/15 family Media Chassis**



FT-1105A

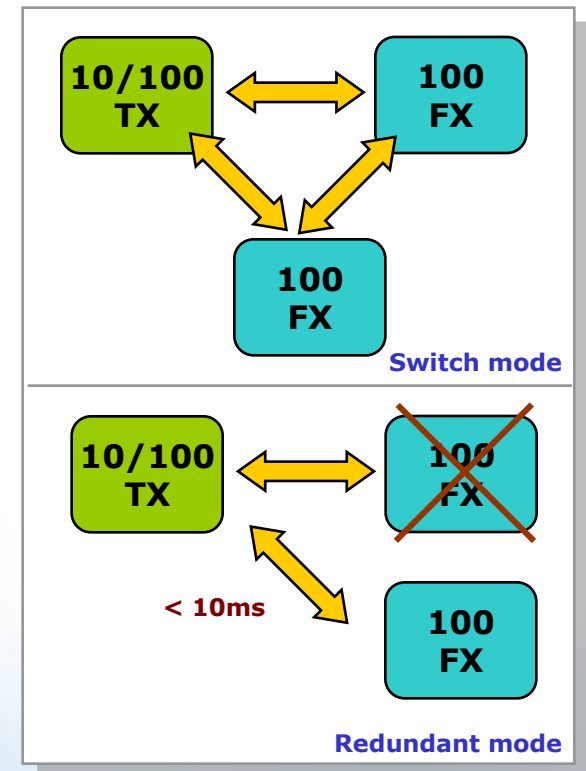


10/100TX to 100FX Redundant Media Converter

- **3-port Media Converter**
 - Dual 100Base-FX fiber optic
 - One 10/100Base-TX TP
- **Store and Forward Switch mechanism**
- **Either 3-port switch mode or 2-port conversion with redundant mode**
- **Compact size work with MC family media chassis**
- **LLCF/LLR, Loop back test support**
- **Standalone or work with PLANET MC-7/10/15 family Media Chassis**



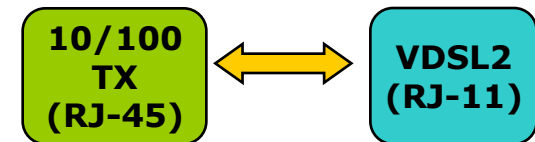
FT-1205A



VDSL2 CO/CPE Ethernet over VDSL Converter

➤ VDSL-DMT

- ITU-T G.993.1 VDSL
- ITU-T G.997.1
- ITU-T G.993.2 VDSL2 (Profile 12a Support), Annex A



➤ DIP Switch for CO/CPE Mode selection

➤ Full VDSL2 bandwidth of up to 30 MHz offering up to:



- 300M -> **100/60Mbps**
- 1km -> **25/15Mbps**

➤ Built-in POTS splitter (VC-201)

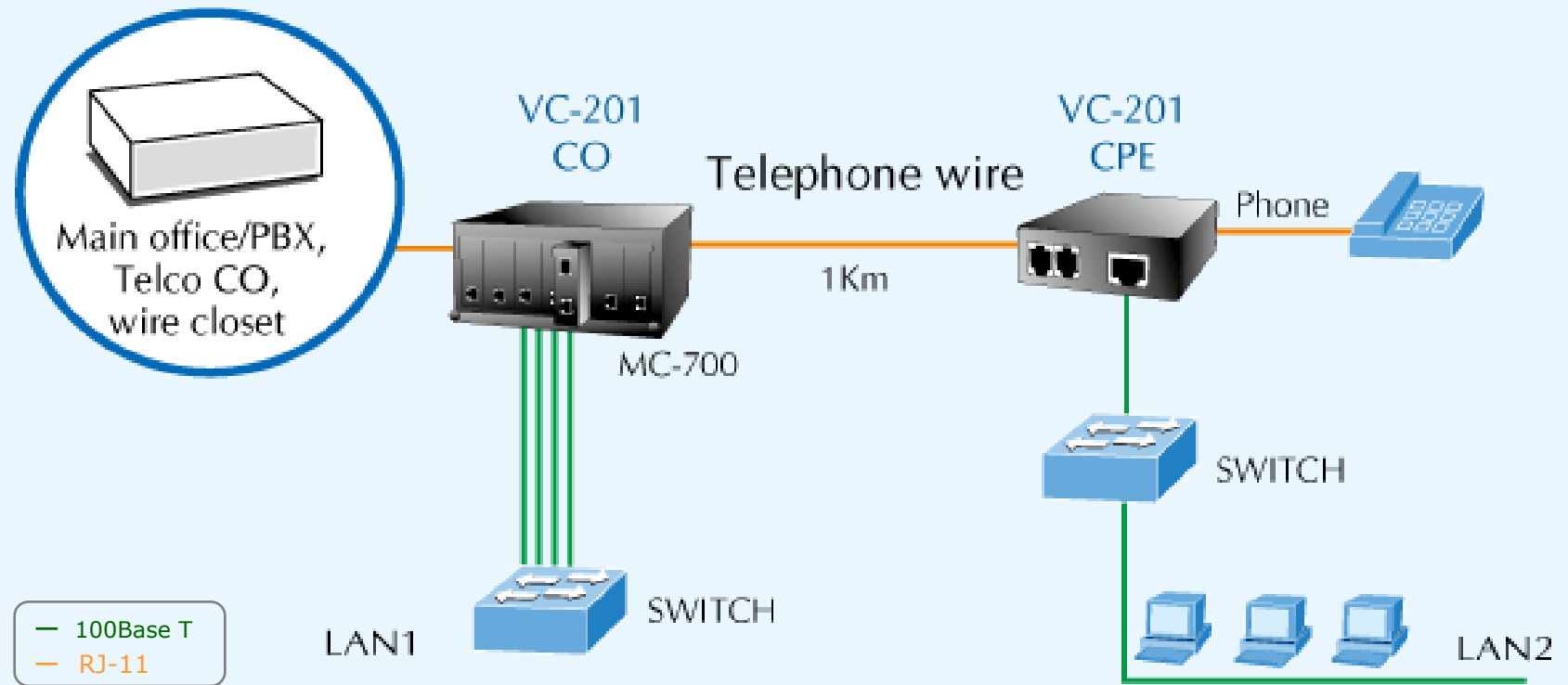
➤ Auto-MDI/MDIX for 10/100-TX port

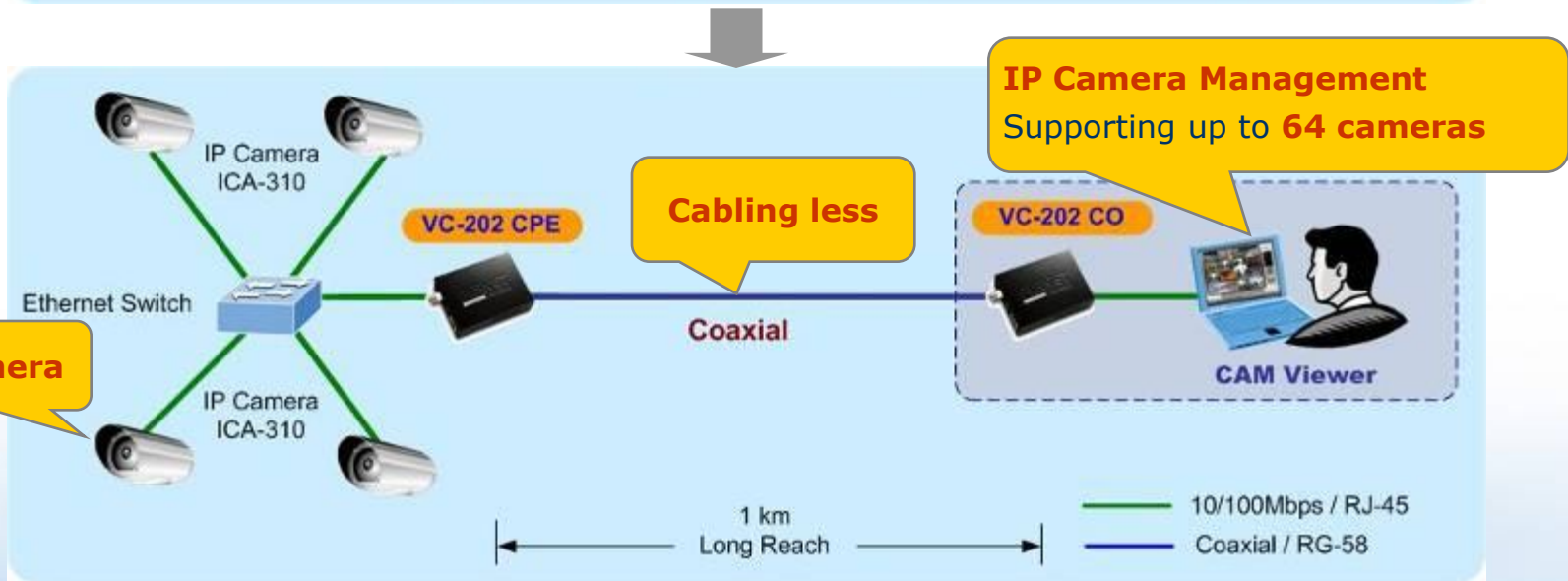
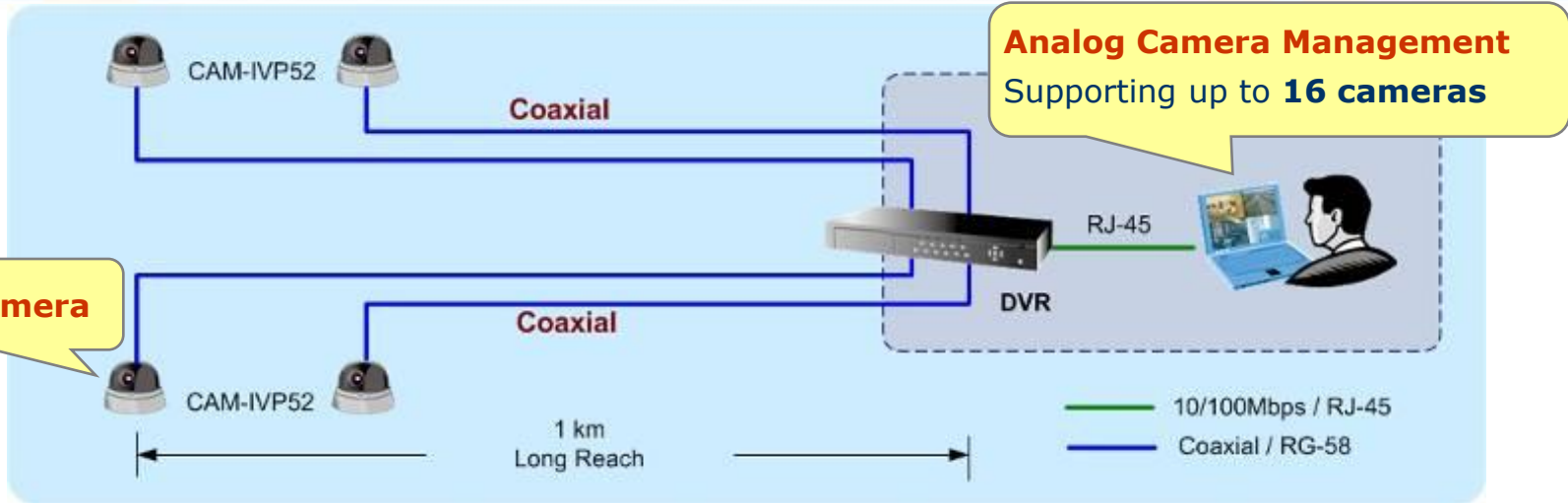
➤ Selectable target data rate to **50/20Mbps**

➤ Standalone or work with PLANET MC-7/10/15 family Media Chassis

Model	VC-201	VC-202
		
Long Reach Connector	RJ-11	Coaxial / RG-58
Max. Down/Up Stream	100/60 Mbps	100/60 Mbps
Max. Fiber Distance	1 km	1.6 km

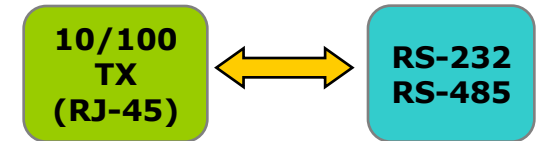
Ethernet over VDSL Solution



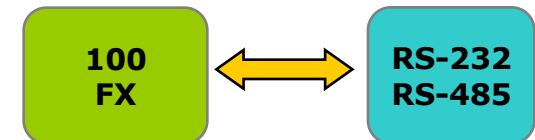


RS-232/422/485 over Fast Ethernet Media Converter / Device Server

- 1 RS-232/422/485 port to 1 10/100Base-TX or 100Base-FX Media Converter / Device Server
- Built-in IP-Based Web interface for remote management
- Standard TCP/IP interface and versatile operation modes
- Supports asynchronous serial data rates up to 921600bps
- Serial Operation mode selected via Web management
- Easy wall mounting and DIN-Rail mounting (optional accessory)
- Compact size can be work standalone or co-work with PLANET MC family Media Chassis (MC-700/1000R/1500)
- PLANET Smart Discovery utility automatically finds the device on the network



ICS-100

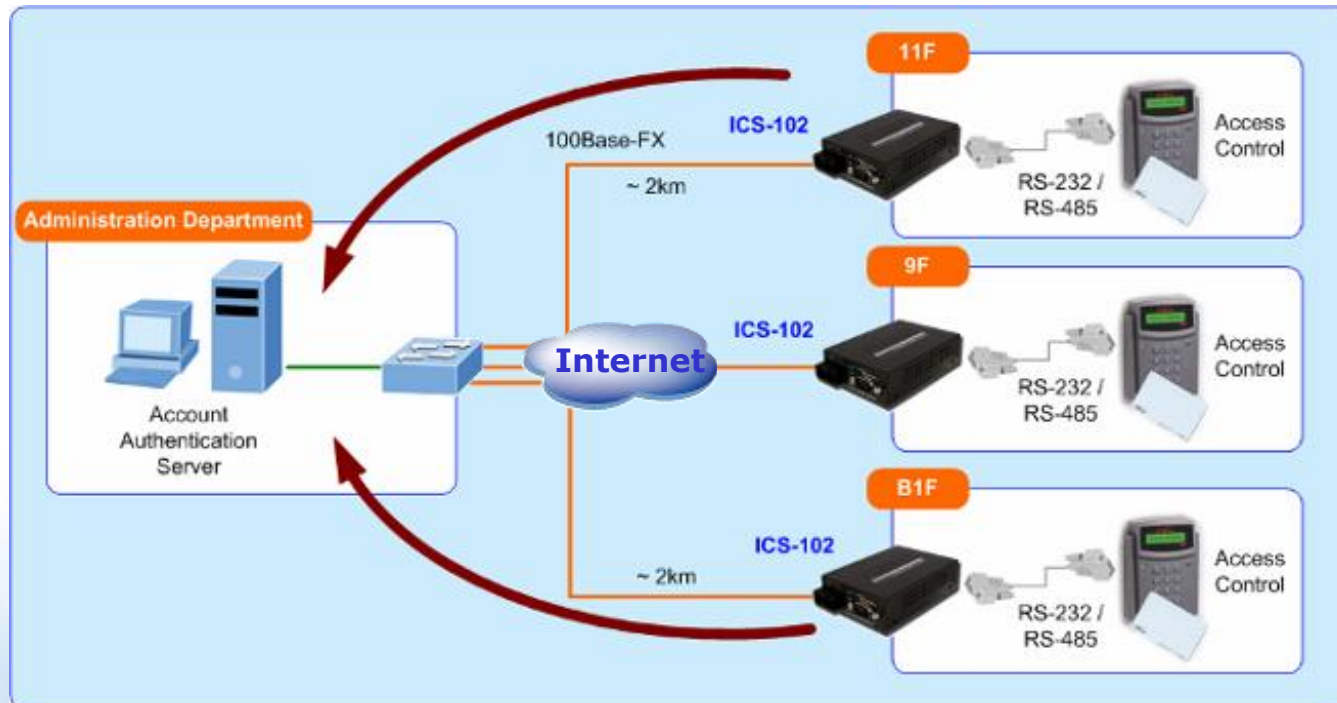


ICS-102

Model	ICS-100	ICS-101	ICS-102	ICS-102S15	ICS-105A
Serial Interface	DB9 RS-232 / RS-422 / RS-485				
Fast Ethernet Interface	10/100Base-TX	100Base-FX			
Connector	RJ-45	ST	SC	SC	SFP
Mode	-	Multimode	Multimode	Single mode	Vary on module
Max. Distance	100m	2km	2km	15km	Vary on module

● Access Control System

- With ICS-10x Serial over Fast Ethernet Converter connected, the access control machine networking is able to be extended over longer distance up to 2km. Via fiber optical interface, the distance can also be up to 20km or 100km in a local range (ICS-105A in SFP interface connector).
- The ICS-10x can be linked to a xDSL router to get the internet access capability, the access control thus can be monitored and set over internet.



Standard Media Converter Chassis

- **10-inch (MC-700), 19-inch (MC-1000R, MC-1500) rack-mountable, 2.4U high**
- **7, 10, 15-slot media converter chassis, with hot swappable slot**
- **Per-slot power isolation for hot-swap and per slot protection**
- **Redundant power (RPS-120W) with options for MC-1000R**
- **Sufficient power supply system**
- **Reduce the effort of converter maintenance and management**
- **Support PLANET FT and GT series media converters**

**MC-1000R****RPS-120W**
(Redundant Power Supply)**MC-1500****MC-700**

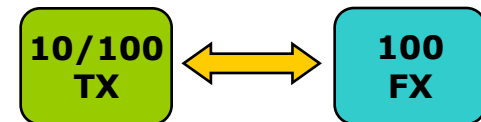
Product Features

Standalone Media Converter



10/100TX to 100FX SMI PoF Media Converter

- **Complies with IEEE802.3/802.3u 10/100Base-T, 100Base-FX**
- **IEEE 1394b SMI patch interface for 100Bas-FX fiber-optic**
- **Store and Forward Switch mechanism**
- **Multi-mode SMI POF, 650nm wavelength**
- **Support fiber distance up to 50m**
- **Compact packet size**



FT-807

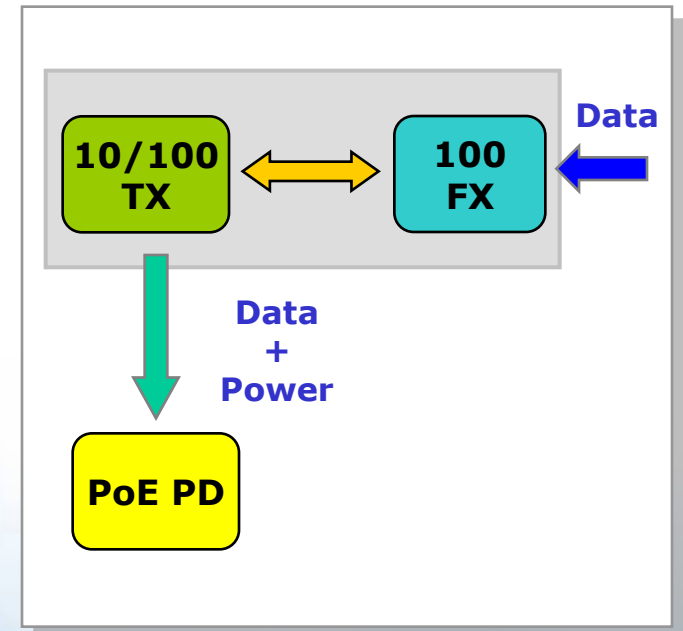
10/100TX to 100FX Fast Ethernet Converter/ Bridge

- Comply with IEEE 802.3af power over Ethernet
- Provides 48V DC power over RJ-45 Ethernet cable to device (Mid-span)
- Support Link Loss Carry Forward (LLCF) / Link Loss Return (LLR)
- Auto-MDI/MDIX for 10/100-TX port
- Store and Forward switch mechanism
- Full range of wiring distance, from 2 km up to 50km distance support upon request



FTP-80x

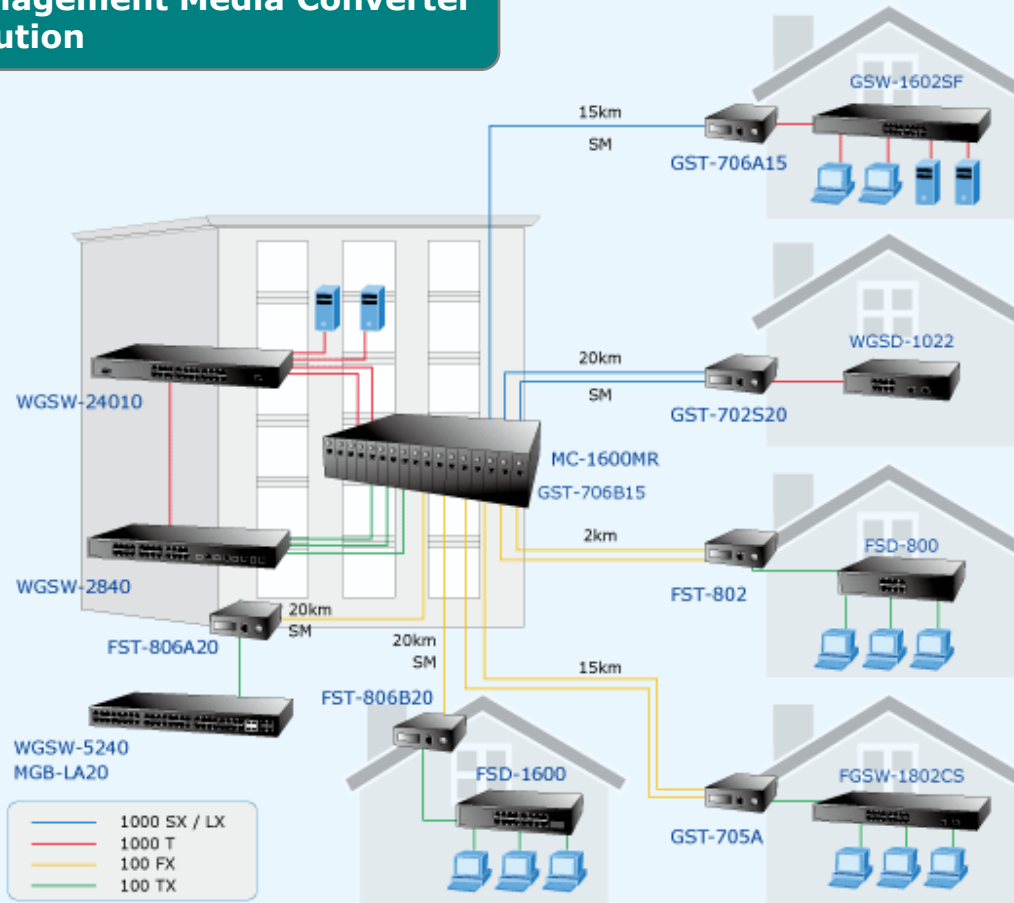
Model	FT-802	FT-802Sn
Fiber Connector	SC	SC
Mode	Multimode	Single mode
Max. Fiber Distance	2 km	15, 35, 50 km



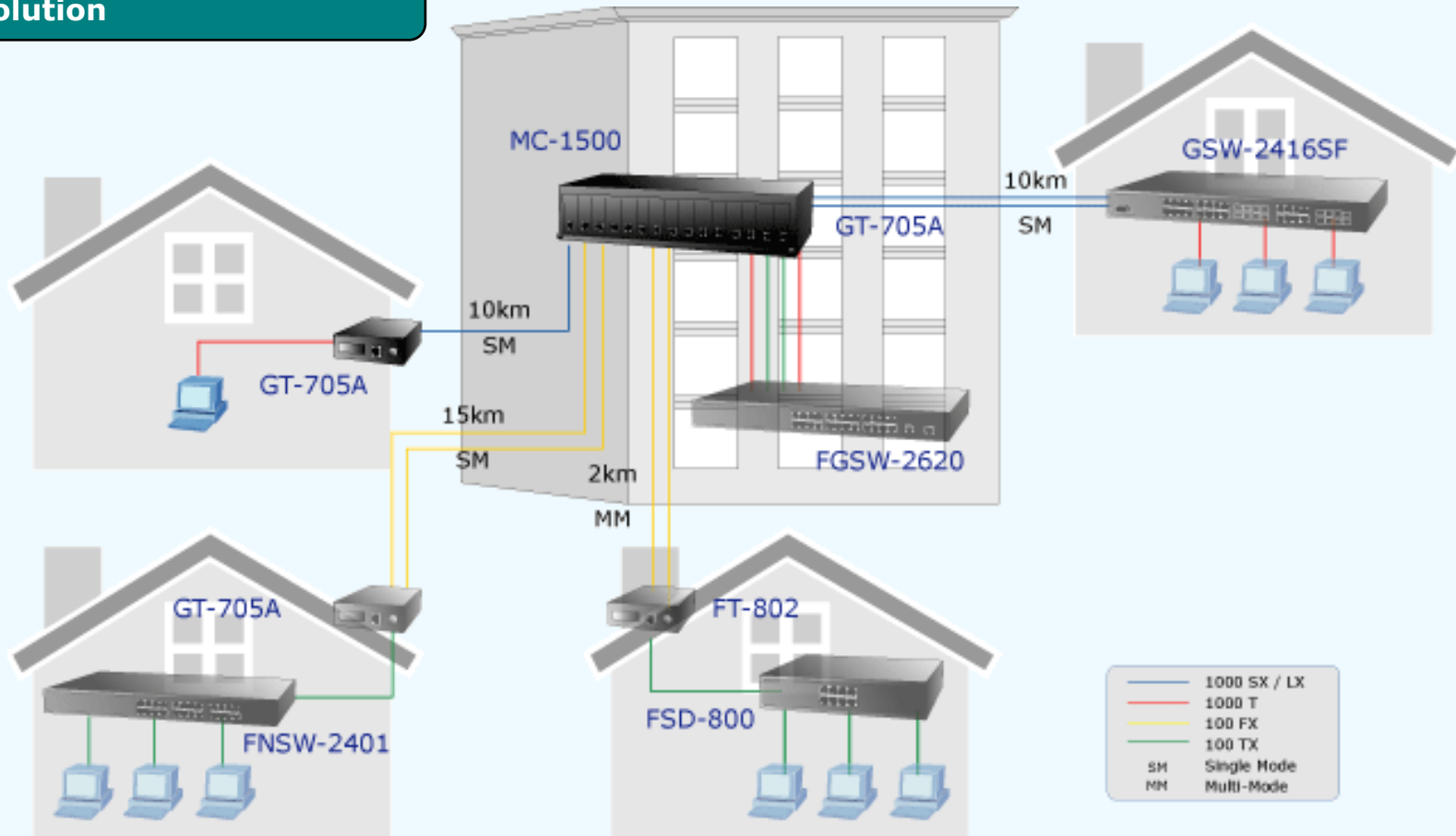
Solutions



Management Media Converter Solution



Standard Media Converter Solution



ACTIVATING IP POWER

