Passive Optical LAN

Bringing more technology into buildings increases network complexity and costs as additional endpoints connect and bandwidth demands intensify.

As an alternative to a traditional LAN network, a **passive optical local area network (POLAN)** is a point-to-multipoint network that relies on FTTx architecture and protocols. It reduces complexity and costs by eliminating the need for hundreds of additional connections, removing distance constraints, lowering the amount of power required to support the system and decreasing cable requirements.

To establish a POLAN, a strand of singlemode fiber runs from the headend or OLT (optical line terminal) to the desired location and connects to a passive fiber optic splitter that divides the signal to other fiber strands through optical distribution. Each of these strands is connected to an ONT (optical network terminal) that supports anywhere from one to hundreds of devices. Often, these ONTs have PoE-enabled ports that supply power to the devices as well.

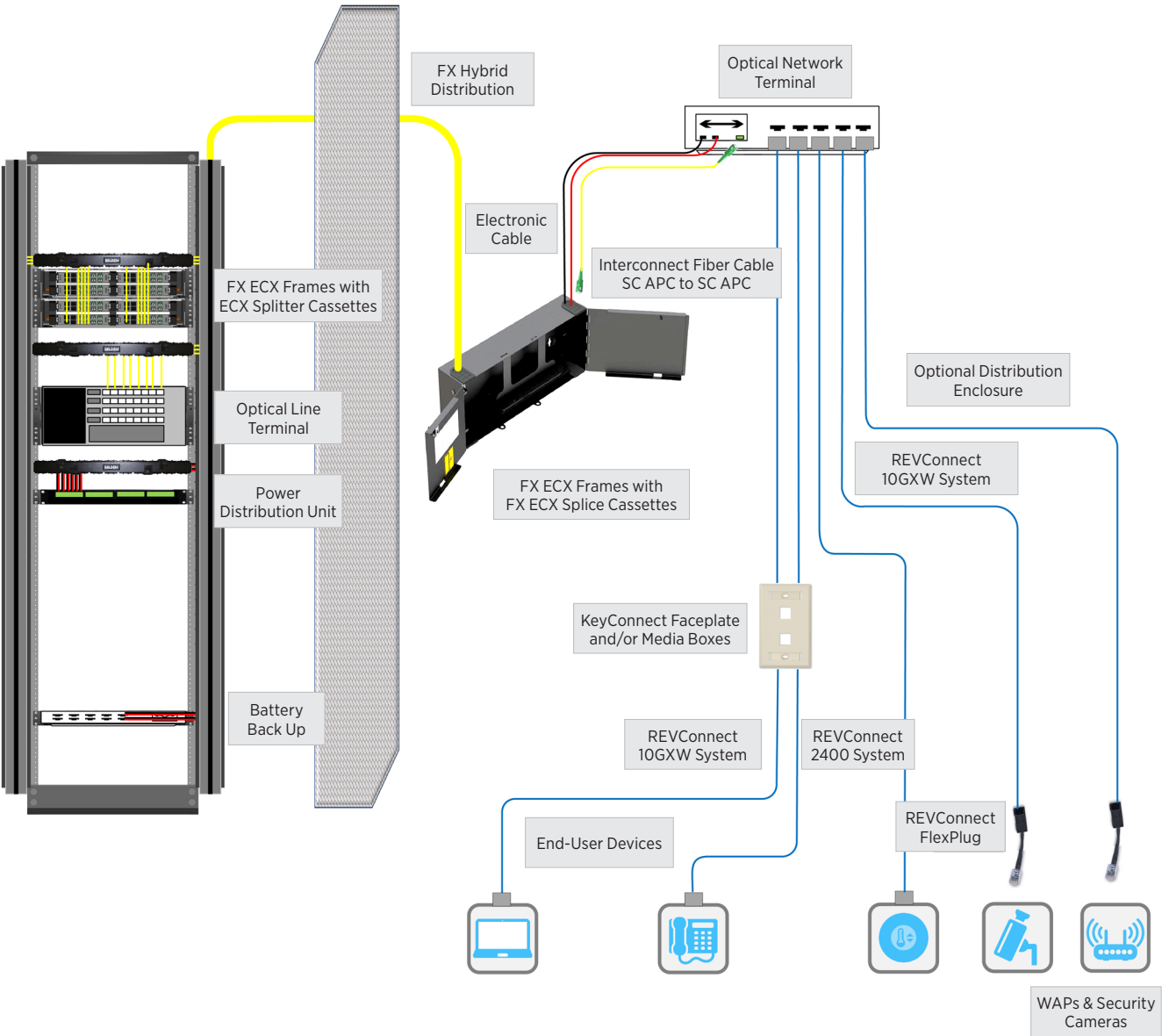**A passive optical LAN (POLAN) is a type of passive optical network (PON).**

Learn more: Use this **QR code** to access literature, applicable products and more information on the FX ECX LAN Fiber System.
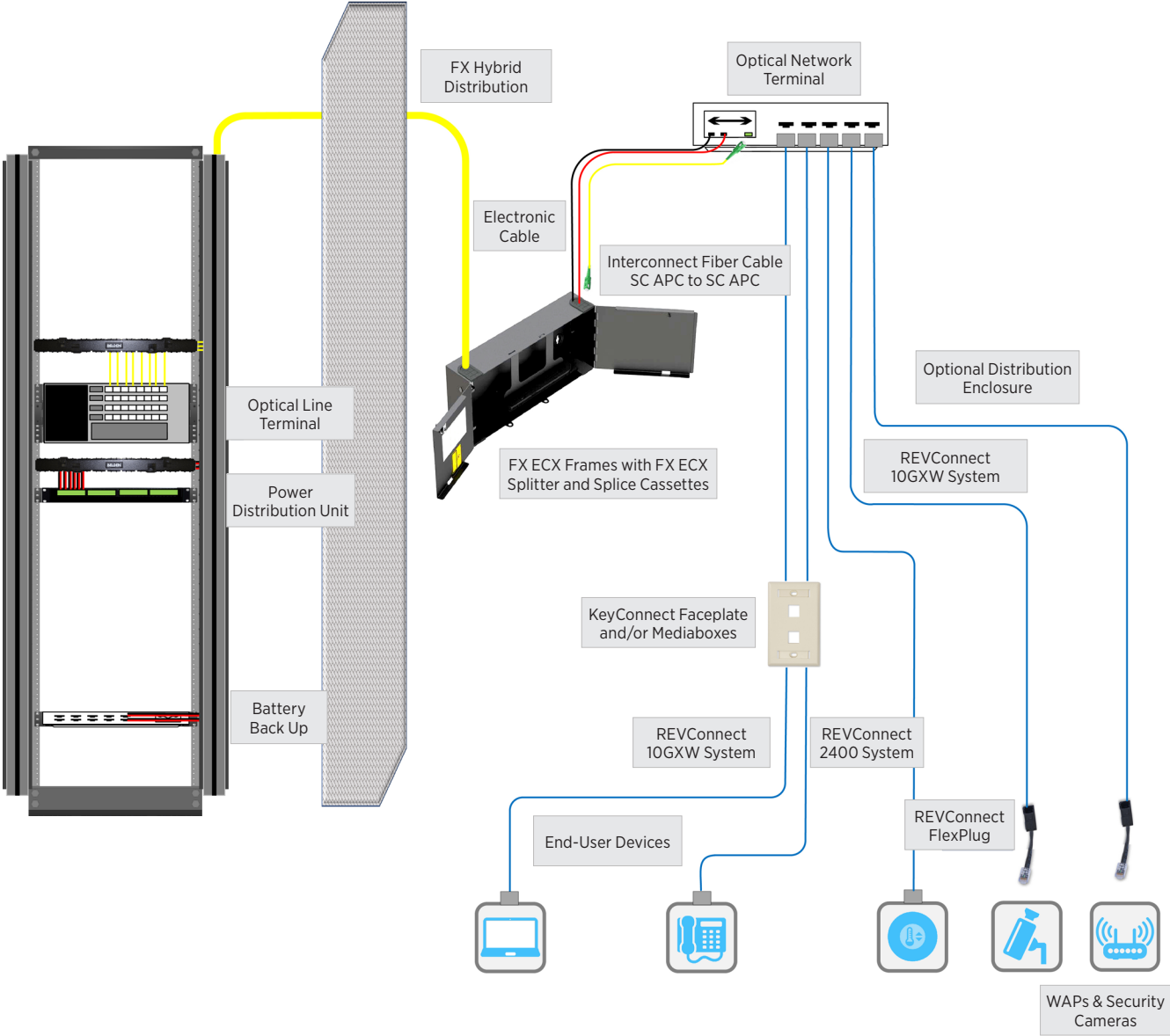
Centralized Split Example

FX Hybrid Distribution

Optical Network Terminal

Electronic Cable

Interconnect Fiber Cable SC APC to SC APC

FX ECX Frames with ECX Splitter Cassettes

Optical Line Terminal

Power Distribution Unit

FX ECX Frames with FX ECX Splice Cassettes

Optional Distribution Enclosure

REVConnect 10GXW System

Battery Back Up

KeyConnect Faceplate and/or Media Boxes

REVConnect 10GXW System

REVConnect 2400 System

REVConnect FlexPlug

End-User Devices

WAPs & Security Cameras

ONT Connected Devices

Device	Bandwidth	Power	Recommended Cable System
Wireless Access Points	up to 10G	15-25W	REVConnect 10GXW
Digital Signage	up to 10G	up to 100W	REVConnect 10GXW
Security Cameras	less than 1G	15-50W	REVConnect 2400
IP Phones	less than 1G	less than 25W	REVConnect 2400
Sensors	less than 1G	less than 25W	REVConnect 2400

✳ The system configurations shown are illustrative. We offer a variety of options to meet your specific use case and project constraints. Please reach out to Belden, and our solutions consultants will gladly assist you in configuring the systems you need.
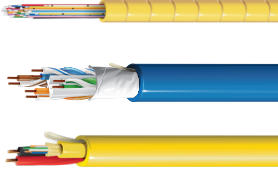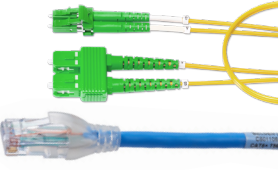
Distributed Split Example

Labels in diagram:
- FX Hybrid Distribution
- Optical Network Terminal
- Electronic Cable
- Interconnect Fiber Cable SC APC to SC APC
- Optical Line Terminal
- Optional Distribution Enclosure
- Power Distribution Unit
- FX ECX Frames with FX ECX Splitter and Splice Cassettes
- REVConnect 10GXW System
- KeyConnect Faceplate and/or Mediaboxes
- Battery Back Up
- REVConnect 10GXW System
- REVConnect 2400 System
- REVConnect FlexPlug
- End-User Devices
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POLAN Checklist Example

	Belden Part Number	Description
Cables		
	FISX006W0	FX Indoor OS2 OptiTuff® Mini Fiber Cable 6 Fibers OFNP
	FISX012W0	FX Indoor OS2 OptiTuff™ Mini Fiber Cable 12 Fibers OFNP
	10GXW13	REVConnect® 10GXW, 4 Pair, 23 AWG Solid Bare Copper
	82740	Electronic Cable, 2 Conductor 18 AWG (19x30)
	HISD0020218PJ	Indoor Hybrid Copper-Fiber Cable, OS2, 2 Fibers Distribution, #18-2c, CMP-OF
	HISD0060218PJ	Indoor Hybrid Copper-Fiber Cable, OS2, 6 Fibers Distribution, #18-2c, CMP-OF
Assemblies and Cordsets		
	FPSSASAxxxM	FX Patch Cord OS2 SC_DX/A SC_DX/A xxxM OFNR DX_3.0 A-B YL_JKT
	FPSLASAxxxM	FX Patch Cord OS2 LC_DX/A SC_DX/A xxxM OFNR DX_2.0 A-B YL_JKT
	C601106007	REVConnect CAT6+ Modular Patch Cord, UTP, Bonded-Pair, 24 AWG Solid, CMR, T568A/B-T568A/B, Blue, 7 ft
Plugs and Jacks		
	RVAMJKUBK-S1	REVConnect 10GX Jack
	RVAFPUBK-S1	REVConnect 10GX UTP Plugs
ECX Patch Panels and Cassettes		
	ECX-01U	FX ECX 1U Housing - 2 Cassettes or Frames
	ECX-02U	FX ECX 2U Housing - 4 Cassettes or Frames
	ECX-04U	FX ECX 4U Housing - 12 Cassettes or Frames
	SCSX1102SLF	1 x 2 OS2 SC/APC to LC/APC
	SCSX1104SLF	1 x 4 OS2 SC/APC to LC/APC
	SCSX1108SLF	1 x 8 OS2 SC/APC to LC/APC
	SCSX2116SLF	1 x 16 OS2 SC/APC to LC/APC
	SCSX1132SLF	1 x 32 OS2 SC/APC to LC/APC
	FCSX06LAMF	LC Duplex 12F, OS2-APC, MPO12(F)
	FCSX12LAMF	LC Duplex 24F, OS2-APC, MPO12(F)
	FCSX06LAFP	LC Duplex APC 06 PORT
	FCSX12LAFM	LC Duplex APC 12 PORT
Cabinets and Enclosures		
	XDR8419-3122836	Four-Post Distribution Rack
	BHVHHXX	High-Density Vertical Cable Managers
	BHH191UR	Horizontal Cable Management
	BHH192UR	
	BHH193UR	
	XHW-2424-GD	24H Wall-Mount
	XRES4214FC	Consolidation/MDU Enclosures: In-Suite Distribution
Outlets and Faceplates		
	AX102655	KeyConnect Faceplate Electric White - 2 Port
	AX102249	KeyConnect Faceplate Electric White - 4 Port
	AX102291	KeyConnect Modular Furniture Adapter Electric White - 3 Port
	AX102900	KeyConnect Modular Furniture Adapter Electric White - 4 Port