Fiber Management

Amphenol Broadband Solutions®

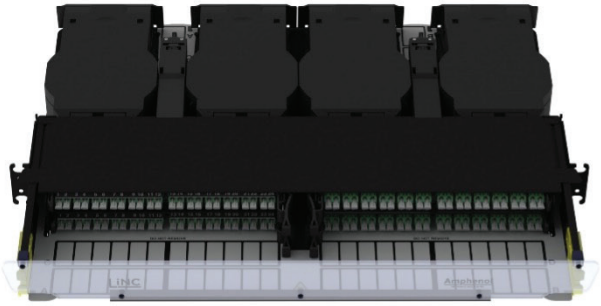
DS-60-2069 Rev. 1.0

LiNC & ESTR - Slack Storage Tray

LiNC is Amphenol's revolutionary rapid-deployment multi-fiber end-to-end solution. LiNC consists of our streamlined 1RU 19/23" rack/cabinet mount LiNC chassis, up to four 12 or 24 fiber LiNC MPO breakout modules, and the time-saving option of ready-to-use 12/24F MPO-MPO factory integrated spooled trunk cables, with up to 200 feet of fiber for rapid deployment.

The LiNC system provides instantaneous 12/24 Fiber MPO-MPO trunk cable deployment with 12 or 24 breakout ports; just unspool the factory terminated MPO cable assembly from the near-end chassis integrated reel and run the MPO cable to the far-end LiNC chassis equipped with the MPO 12/24F breakout module for highly reliable, high-performance fiber networks. The chassis-mount reel of 12/24F trunk cable eliminates the need to measure exact lengths and then wait for cable fabrication and delivery. Unspooling just the exact cable length needed eliminates the slack management issues that come from ordering cable assemblies with added in slack margin. LiNC eliminates the need for fiber-expert installers or data center technicians.

Amphenol's LiNC takes the complexity out of fiber deployment with its ready-to-use MPO plug-and-go technology. It is cost-effective, reliable, and easy to install for instantaneous deployment in central offices, data centers, headends, PONs and premise LAN applications.



LiNC with 96 LCU 4x24F MPO Spooled

LiNC Module (24F LC/APC)

Features:

- Single Part Ordering Near-End and Far-End System
- 1RU Chassis supports 4 Integrated Spool mounts
- Up to 48 SC or 96 LC Breakout ports
- Up to four 12F and 24F MPO LiNC modules per chassis
- Rapid-deploy MPO-MPO connectorized factory spooled trunk cables per chassis
- Eliminates fiber slack storage needs
- Hassle free magnetic quick view Clear Front Door
- Chassis slide-back top cover for ease of access
- Designed for simplified connector cleaning process
- Single handed module pull-out to access LC connectors safely and securely

LiNC System Specifications:	
Chassis Dimensions	18.6" W x 14.3" D x 1.75" H
Chassis Mounting	19 in, 23 in EIA or WECO
Trunk Spool Qty per Chassis	4
Standard Trunk Spool Max Length*	45 ft* with 24 Fiber, 100ft* with 12 Fiber
Distribution Connector Types	LC/UPC, LC/APC, SC/UPC, SC/APC
Ports per LiNC Module	12 SC or LC, 24 LC
Ports per LiNC Chassis	48 SC, 96 LC
Fiber Modes	SM - G.657.A1, MM - OM4 MM
Trunk Spool Connector (Far-end)	MPO (Pinned) or (Unpinned)
LiNC Module Trunk Connector	MPO (Unpinned)
MPO Trunk Fiber Capacity (Size)	12 Fiber (2mm) or 24 Fiber (2mm or 3mm)

* Optional auxiliary spool available for lengths up to 200 ft

ESTR Tray Routing Guide

Features:

- Available in 1RU (single tray) and 2RU (3 tray) configurations
- Robust bend radius protection throughout
- Multiple routing options for different slack lengths
- Multiple trays for fiber segregation for reduced fiber disturbance when accessing jumpers
- Scalable and low profile

Fiber: Amphenol E-Series Storage Tray

The E-Series is a shallow depth (ETSI compatible <12") platform that uses trays with integrated articulating links to maintain bend radius while accessing the fibers. The ESTR Storage tray provides numerous paths for routing excess jumper slack depending on the length needed.

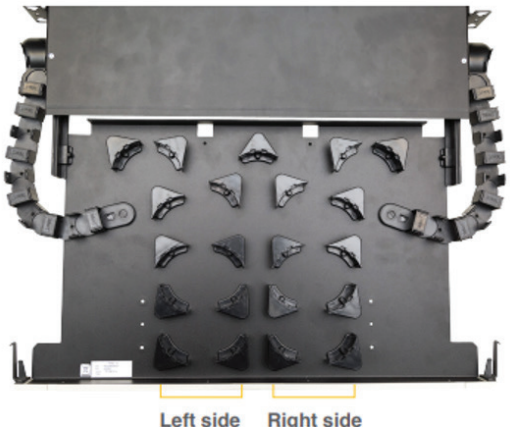
This document shows various routing methods for 3-6 ft slack lengths. Either the left set or right set of bend radius managers may be used to take slack.

ESTR - Tray Capacity Counts

Slack Amount	2.0 mm	1.6 mm	1.2 mm
2 FT	40 Strands	48 Strands	72 Strands
3 FT	40 Strands	48 Strands	72 Strands
4 FT	40 Strands	48 Strands	72 Strands
5 FT	24 Strands	24 Strands	36 Strands
6 FT	24 Strands	24 Strands	36 Strands

1RU = 1 Tray
2RU = 3 Tray

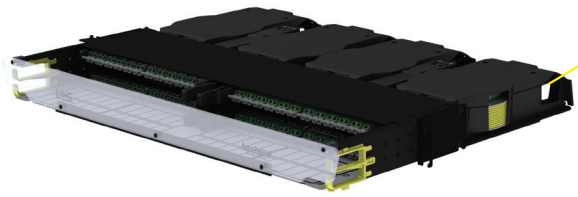
Empty Tray - Top view



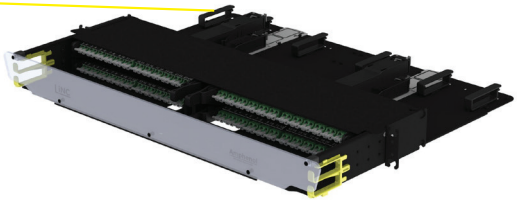
Ordering Information

Description	Part Number
Paired Solution Kits *	
LINC SYSTEM, 1RU KIT, 48 LC/APC CAPACITY, 100F (NEAR and FAR-END CHASSIS)	LINC-1RUK-48LCA1-100F
LINC SYSTEM, 1RU KIT, 48 LC/APC CAPACITY, 200F (NEAR and FAR-END CHASSIS)	LINC-1RUK-48LCA1-200F
LINC SYSTEM, 1RU KIT, 96 LC/APC CAPACITY, 45F (NEAR and FAR-END CHASSIS)	LINC-1RUK-96LCA2-45F
LINC SYSTEM, 1RU KIT, 96 LC/APC CAPACITY, 100F (NEAR and FAR-END CHASSIS)	LINC-1RUK-96LCA2-100F
LINC SYSTEM, 1RU KIT, 96 LC/APC CAPACITY, 200F (NEAR and FAR-END CHASSIS)	LINC-1RUK-96LCA2-200F
Spare MPO Modules	
LINC MODULE: 12F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, POSITION A	LINC-M121GS-A
LINC MODULE: 12F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, POSITION B	LINC-M121GS-B
LINC MODULE: 12F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, POSITION C	LINC-M121GS-C
LINC MODULE: 12F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, POSITION D	LINC-M121GS-D
LINC MODULE: 24F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, LEFT	LINC-M241GS-L
LINC MODULE: 24F MPO, LC/APC, SM, BREAKOUT, A POLARITY, ULL, RIGHT	LINC-M241GS-R
Spare Trunk Spools **	
SPOOL ASSY: CARTRIDGE, OFNP, SM BIF, 12F, ULL MPO(F), 100FT, 2MM, MINI BOOT, A POLARITY	LINC-C121FF-SB-100F-A
SPOOL ASSY: CARTRIDGE, OFNP, SM BIF, 12F, ULL MPO(F), 200FT, 2MM, MINI BOOT, A POLARITY	LINC-C121FF-SB-200F-A
SPOOL ASSY: CARTRIDGE, OFNP, SM BIF, 24F, ULL MPO(24)(F), 45FT, 3MM, MINI BOOT, A POLARITY	LINC-C241FF-SB-045F-A
SPOOL ASSY: CARTRIDGE, OFNP, SM BIF, 24F, ULL MPO(24)(F), 100FT, 3MM, MINI BOOT, A POLARITY	LINC-C241FF-SB-100F-A
SPOOL ASSY: CARTRIDGE, OFNP, SM BIF, 24F, ULL MPO(24)(F), 200FT, 3MM, MINI BOOT, A POLARITY	LINC-C241FF-SB-200F-A
ESTR Chassis	
E-Series Storage Tray in 1RU Chassis with 19/23” BRKTS-BLK	ESTR-1RU-BLK
E-Series Storage Tray in 2RU Chassis with 19/23” BRKTS-BLK	ESTR-2RU-BLK

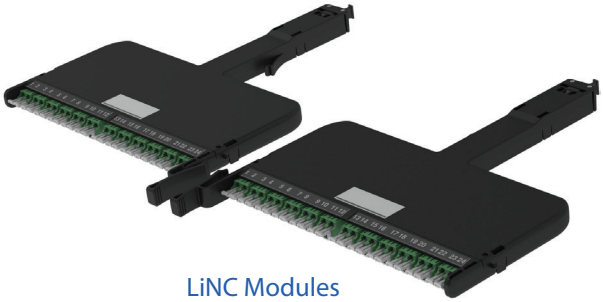
* Additional solution kits available.
** Example available Trunk Spool part numbers, additional configurable options available.



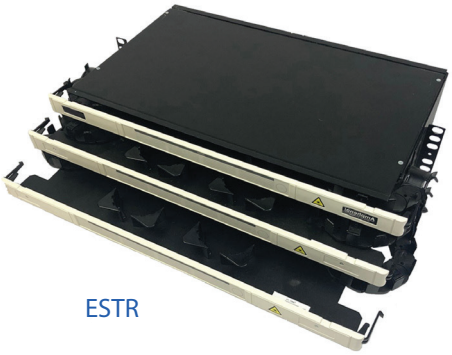
Near-end (LiNC with Spools)



Far-end (LiNC without Spools)



LiNC Modules
(Left/Right 24-Port LCU/APC)



ESTR

Limitless adaptability, fully scalable and complete flexibility

The C2X fiber optic distribution platform brings a new level of simplicity to the fiber world. The C2X chassis is a streamlined bulkhead solution engineered to deploy multiple configurations such as patch, patch/splice, pre-terminated fiber as well as modularity with our C2 Advance Optic Modules. With a comprehensive range of options, compatibility with standard equipment racks and cabinets, a compact yet expandable footprint, and a broad selection of function modules for advanced capabilities, the C2X provides users with a single platform for multiple locations and topologies.

Answering today's connectivity needs.

The C2X is a robust interconnect or cross-connect solution for any part of the network. This platform supports a wide variety of flexible connectivity and up to 432 LCU fibers with the 4RU chassis. C2X cable management features support and organize fiber as it exits the chassis. The design promotes proper bend radius for fiber up to 3.0 mm, as well as any boot type.

Key Benefits

Adaptable to use in any application

- Mountable in 19" or 23" racks or cabinets
- Capable of deploying all LC or all MPO, up to 3.0 fiber and long boot adapters
- Fully movable/removable front fiber management bezel

Scalable for migration to 40G, 100G and beyond

- Grow as you go, chassis available separately from modules
- Available in 2RU, 3RU and 4RU chassis options
- External or Internal Cable Clamping

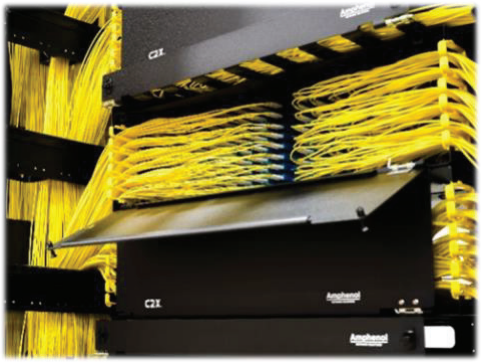
Flexibility

- Configured as Bulkhead Patch, Bulkhead Patch and Splice, Pre-Terminated, or Tray/Module based
- Diverse modular offering via the AOM product line
- MPO Base-8, Base-10, Base-12, (8f, 10f, 12f, 24f)

Applications

C2X is the most adaptable chassis available that can fit into any application. This chassis is offered in a configuration with or without the front cable management door. There is also an option when space is limited or when fiber protection is already provided by a cabinet or enclosure to completely remove the front bezel.

- Headend
- Central office
- Data center
- Edge networks
- Metro networks
- Cell sites
- Access networks



C2 Advanced Optical Modules

The C2X chassis is designed to deploy the C2 AOMs in any mix and configuration. Modules are interchangeable with the higher density C2E panel in any of the following options:

- Patch only
- Patch and splice
- Pre-terminated
- MPO Base-8, Base-10, Base-12 (8f, 10f, 12f, 24f)
- TAPs
- Splitters
- CWDM & DWDM

Chassis Dimensions

Chassis	Dimensions
2RU	3.5" H x 18.98" W x 17.72" D as “shipped” with front bezel in non-extended position.
3RU	5.23" H x 18.98" W x 17.72" D as “shipped” with front bezel in non-extended position.
4RU	7" H x 18.98" W x 17.72" D as “shipped” with front bezel in non-extended position.

Note: The C2X Front Bezel is both removable (for certain cabinet/enclosure applications) and adjustable out to a maximum chassis depth of 18.50”. The C2X with the bezel removed is 13.75” D. The C2X width is 17.25” W behind the front bezel which is designed to mount in front of the frame.

Chassis Density

Chassis	LC Ports	SC or MPO Adapters	Dual AOM Modules	Single AOM Modules	Tray Capacity for AOMs
2RU	192 LC	96 SC or MPO	8 dual AOMs	16 Single AOMs	8x C2X-TRAY
3RU	288 LC	144 SC or MPO	12 dual AOMs	24 Single AOMs	12x C2X-TRAY
4RU	432 LC	216 SC or MPO	16 dual AOMs	32 Single AOMs	16x C2X-TRAY

Amphenol's bulkhead-style fiber optic panels provide cost-effective capabilities in an industry-standard LGX® footprint. LCX panels mount in a 19" or 23" rack and range from 1RU to 4RU.

The densities ranging from 48 LC/UPC terminations in a 1RU to 288 LC/UPC terminations in a 4RU, LCX panels can support virtually any applications or requirements.

Fig. 1: LCX 4RU

Primary Features

- Bend radius management (panel exit cable arcs)
- Pre-loaded configurations accelerate deployment
- Tray-based in 1RU for improved access
- Custom pre-terminated solutions available
- Universal designation label included for circuit tracking
- Shallow chassis design
- IFC/OSP brackets for cable mounting
- LGX® footprint adapter plates
- Available with LC, SC or MPO adapters
- 19" or 23" mounting brackets

Chassis Size and Density

Chassis Densities			
RUs	**LGX Plates**	**Max SC or MPO Adapters**	**Max LC Ports**
1	2	24	48
2	4	48	96
	6	72	144
3	8	96	192
4	12	144	288

Fig. 2: LCX 4RU – 144 SCA with Pre-term IFC cable and spool

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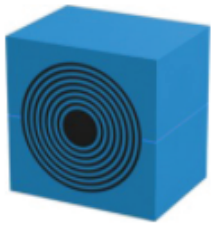
LCX Specifications

Dimensions and Weights (Spool and cable not included)		
All Panels	**Width**	**Depth**
	17” (432 mm)	11" (280 mm)
	Height	**Weight**
1RU patch panel	1.75" (44 mm)	5 lbs. (2.27 kg)
2RU patch panel	3.5" (89 mm)	6 lbs. (2.72 kg)
3RU patch panel	5.10” (130 mm)	7 lbs. (3.18 kg)
4RU patch panel	7" (178 mm)	8 lbs. (3.63 kg)
Mechanical		
Enclosure type	Rack-mounted panel	
Capacity	6-1728 fibers based on configuration	
Connector type	LC, SC, or MPO	
Material	Aluminum	
Panel mounting	19" or 23"	
Clamping	From 0.2 to 1.2 inches Left or Right	
Temperature	-5° to 55°C	
Compliance		
Agency compliance	NEBS, ETSI, Zone 4 seismic reliability	

LCX Specifications

LCX cable clamp includes a CM module with a solid core that can be peeled off and adaptable to any OD cable from 0.374” to 1.28”



CM 40 10-32

Number of cables/pipes	1
For cable/pipe Ø (in)	0.374 - 1.28
External dimensions WxHxD (in)	1.575 x 1.575 x 1.181
Weight (lbs)	0.16
Art. No	C000140101000

Ordering Information

Part Number	Description
LCX-F141GDAG-F1503RU	LCX PRE-TERM CHASSIS 3RU:144F STRANDED SM BIF OSP, OFNP, LC/APC 150F STUB, TOP/RIGHT
LCX-F141NDAG-F1504RU	LCX 4RU PRE-TERM CHASSIS:144F STRANDED SM BIF OSP, OFNP, SC/APC 150F STUB, TOP/RIGHT
LCX-P141G	LCX-144 PATCH.LC/APC.19" STD, 3RU
LCX-F141N	LCX-144 PATCH.SC/APC.19" STD, 4RU