

User Guide

LX100

10/100Base-TX Ethernet LAN Extender



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Introduction

LX100 are LAN extenders which are designed to extend data beyond 100M (328ft). Traditionally, standard Ethernet supports Ethernet transmission distance up to 100 meters. However, by using a pair of LAN extenders, they can break the limitation of Ethernet transmission of 100M and extend transmission distance up to 800M over Cat. 5e or Cat. 6 cable.

Each LX100 LAN extender is a compact size device which can be used as a standalone extender or can be optionally inserted into FMC-CH08 and FMC-CH17 chassis for centralized concentration. All in all, for long distance data transmission, LX100 is the most cost-effective and efficient solution for data transmission deployments.

Package List

- One LX100 device

Features

- Long distance data transmission up to 800 meters on 1 or 2-pair UTP Cat. 5e or Cat. 6 cable
- Quick deployment and easy maintenance
- Supports Link Fault Pass Through (LFPT) function
- Compatible with FMC-CH08 and FMC-CH17 chassis

Specifications

Ethernet Interface

- **Standards** IEEE 802.3, 802.3u
- **Connector** 1 x 10/100Base-TX RJ-45 LAN port
1 x RJ-45 LINE port
- **Data Rate** 10Mbps or 100Mbps
 - The LINE speed between LX100 pair will be 10M or 100M depending on extension length.
 - The LAN speed of LX100 is same as LINE speed.
- **Cable**
 - 1 or 2-pair UTP cable (Cat. 5e or Cat. 6)
 - Ethernet pins 1 & 2 and 3 & 6 are used for data communications.

DIP Switch

LFPT, Speed, Negotiation Mode

LED Indicators

Power, LFPT, LAN Link, Line Speed 100, Line Speed 10, Local

Power

- **Power Input** 12VDC
- **Power Consumption** <3W

Dimensions

23mm (W) x 96.5mm (D) x 73.4mm (H)

Weight

73.5g (Each)

Environment

- **Operating Temperature** 0~50°C
- **Storage Temperature** -10~70°C
- **Humidity** 5~90% (Non-condensing)

MTBF

>65000 Hours

Accessory

Wall-mounting kit (one bracket & two screws)

Panel

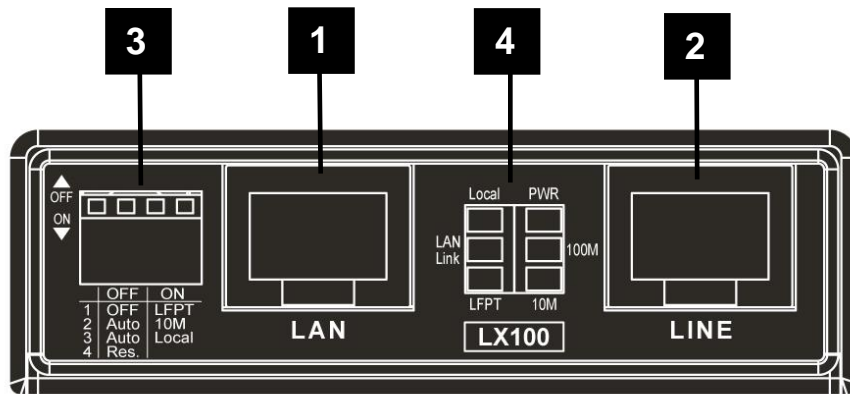


Figure 1. Front Panel



Figure 2. Rear Panel

No.	Description
1	RJ-45 LAN Connector
2	RJ-45 LINE Connector
3	DIP Switch
4	LED Indicators
5	12VDC Power Input

Connectors

LX100 has two standard shielded RJ-45 connectors for Ethernet cable connections. In the local side, the connector labeled LAN connects to Ethernet devices such as switch or NVR; while the connector labeled LINE connects to the LINE side of the remote device for distance extension. In the remote side, the connector of LX100 labeled LAN connects to Ethernet devices such as IP Camera, Access Point, IP Phone, Digital Signage or any other Ethernet devices. See the diagram below for connection example.

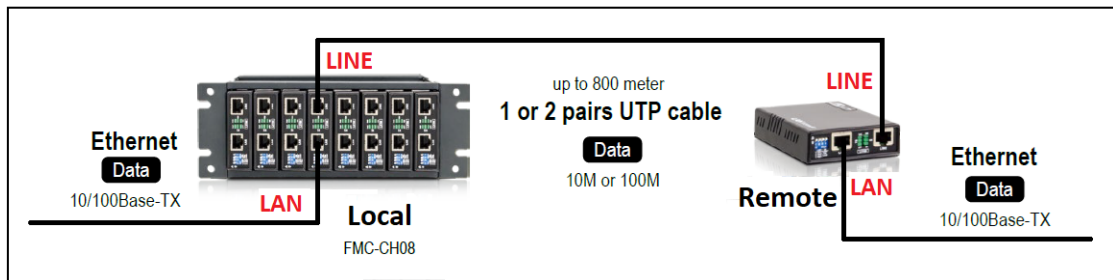


Figure 3. Connector Diagram

Extension Distance vs. Speed of LINE Side

The following table shows the extension distance and link speed between two LX100 devices (LINE side). If the DIP switch of the link speed is set to Auto, the actual link speed will be determined by the extension distance.

Extension Distance (Meters)	Cat. 5e or Cat. 6 UTP Link speed (Mbps)	
	2 Pairs	1 Pair
100	100	100
200	100	100
300	100	100
400	100	10
500	100	10
600	100	10
700	10	10
800	10	10

Note: Please note that the LAN speed is determined by LINE speed which means that if LINE speed is forced to 10Mbps, the LAN speed will be set to 10Mbps as well. When speed rate is set to Auto, the LINE speed will be determined by the extension distance. If the extension distance is between 100M and 600M (2 pairs), the LINE speed is 100Mbps (LAN speed is 100Mbps as well); whereas if the extension distance is beyond 700M (2 pairs), the LINE speed is 10Mbps (LAN speed is 10Mbps as well).

DIP Switch

The table below shows the concise DIP switch functions:

Position \ DIP NO.	DIP 1	DIP 2	DIP 3	DIP 4
	LFPT	Speed	Mode	Reserved
OFF	LFPT Off	Auto	Auto	
ON	LFPT On	10M	Local	

The table below shows the detailed descriptions of DIP switch functions:

DIP NO.	Position	Descriptions
DIP 1	OFF	Disable LFPT function. <i>Note: When LFPT is set to OFF, it is important to remain correct LINE & LAN side cable connections (refer to page 7). If LINE cable connection is not connected properly, the LAN connection (both local and remote side) will be affected (such as LED indicators will not be lit).</i>
	ON	LFPT function is enabled. When the remote device is link down, the link of the local device will be forced down. <i>Note: To make LFPT work normally, it is important to have correct cable connections. Please refer to page 7 for LINE & LAN side cable connections.</i>
DIP 2	OFF	The device automatically learns the link speed. The link speed can be either 10Mbps or 100Mbps depending on the extension distance.
	ON	This setting forces port speed to 10Mbps.
DIP 3	OFF	This sets the device to Auto mode which will automatically learn the most appropriate mode depending on the current link status.
	ON	This setting forces the device to Local (Master) mode. Please note that in the same application, if you manually set one device to Local mode, the DIP switch 3 of the other device should be set to OFF position (Auto). The network will not work properly when two devices are set to Local at the same time.
DIP 4	OFF	This DIP switch is reserved for future use. Please place this DIP Switch in the default OFF position.

LED Indicators

LED	Color	State	Descriptions
PWR	Green	On	Power is on.
		Off	No power inputs.
Local	Green	On	Local (Master) mode.
		Off	Slave mode.
10M	Green	On	LINE is link up and operates at 10Mbps.
		Off	LINE is link down.
100M	Green	On	LINE is link up and operates at 100Mbps.
		Off	LINE is link down.
LAN Link	Green	On	LAN link is up.
		Off	LAN link is down.
LFPT	Green	On	LFPT function is activated and link accidents occur.
		Off	LFPT function is off or link operates normally.

Wall Mounting Installation

Each LX100 standalone extender has the option of adding wall mount capability. One wall mount kit is required for installing a single standalone unit on the wall. Each wall mount kit provides all the necessary hardware for a complete installation.

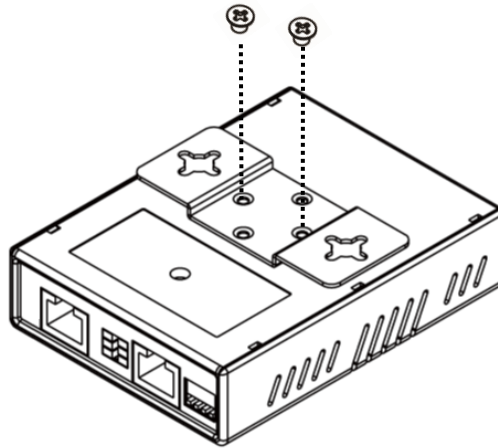


Figure 4. Extender with Wall Mounting Bracket

Application

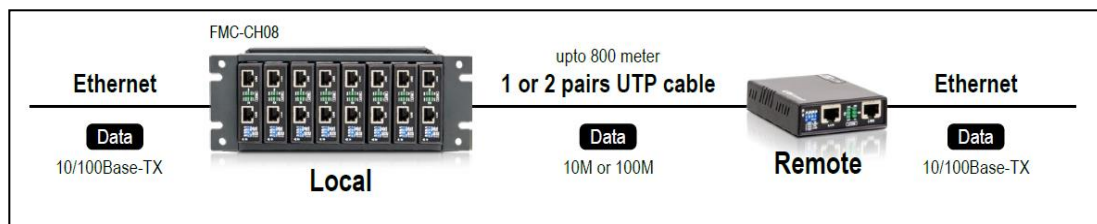


Figure 5. Application Diagram

