1-Port 10/100/1000/2.5G/5G Base-T IEEE802.3bt PoE++ 90W to 1-Port 10/100/1000/2.5G/5G Base-T

Mini Industrial AI Smart Managed PoE++ Injector with Voltage Booster

Features

► Self-developed intelligent management system by E-link, supporting mobile APP and PC Web UI

► One-click LED screen display real-time data dashboard: system current, voltage, internal temperature; Ethernet port link speeds and more

► Intuitive graphical interface under APP/Web for full device status visualization

► Lightweight simplified UI replaces complicated traditional management pages, enabling easy on-site debugging and maintenance even for non-professional operators

► Wide DC input range 9V-54V, built-in voltage boost module

► Compliant with IEEE 802.3af/at/bt, total PoE++ PSE budget up to 90W

► Customizable versions available for Starlink Gen 2 / Gen 3 compatibility

► Flexible PoE power output matching different input voltages:

- 12V input →60W PoE output
- 24V input →90W PoE output
- 48V input →90W PoE output

► 6KV lightning surge protection on all ports

► Wide operating temperature: -40° C ~ +75° C (-40° F ~ 167° F)



Overview

The LNK-AINJ501M90 series is a compact AI smart managed industrial PoE Injector independently developed by E-link. It is a Hardened 5G High Power PoE Injector allows you to connect the IEEE 802.3 af/at/bt PoE++ device such as camera and access point with a non PoE LAN switch within the distance of 100m.

This world-first innovative switch combines the dual advantages of managed and unmanaged switches. Engineers can monitor device status via multiple methods: mobile APP, PC web management interface and LED Display without additional test tools.

Data cover:voltage,current, temperature, Ethernet port status, PoE status,

We innovated this product based on standard switches:

Device function: Scheduled System Reset, PoE Scheduled Restart. The redundant-mode supports auto -recover function. If the destination port of a packet is link-down, it forwards the packet to the other port of the backup pair

Meets IP40, aluminum housing, works stably under harsh industrial temperatures from -40℃ to 75℃.

Equipped with dual redundant power supplies, it keeps Ethernet working stably 24X7.

Application Scenarios:

Intelligent Manufacturing & Automation: data transmission and multi-device interconnection

Power & New Energy: Surveillance communication and cluster networking.

Rail Transit & Tunnel Engineering: Real-time video monitoring and signal transmission.

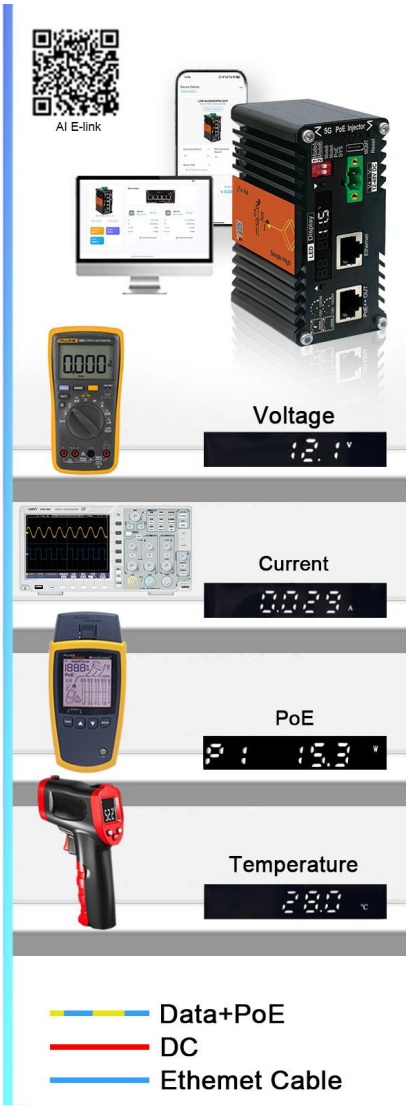
Oil, Gas & Mining Sites: Stable communication

Smart City & New Infrastructure Deployment

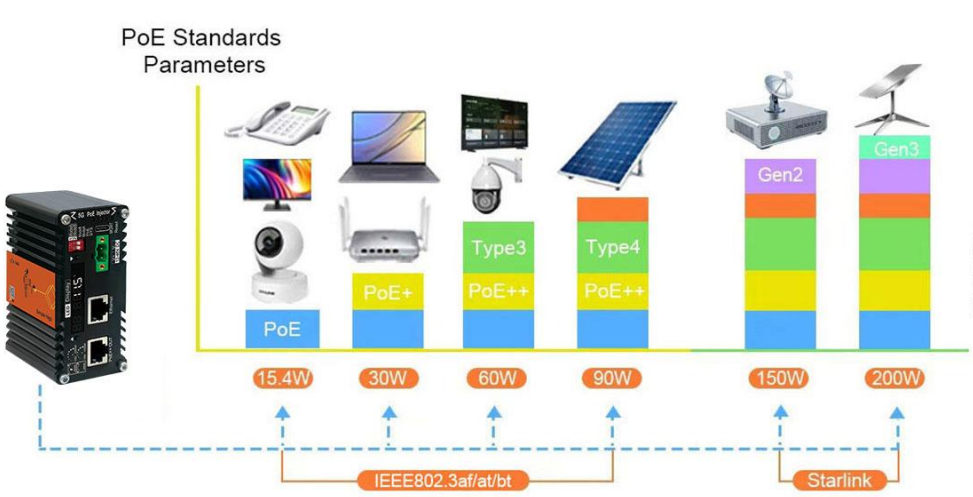
In addition, this product can be used in fields such as autonomous driving, humanoid robots, AI computing, metallurgy, chemical engineering, outdoor research base stations and field weather monitoring.

Application

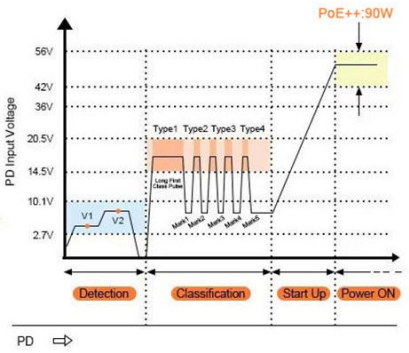




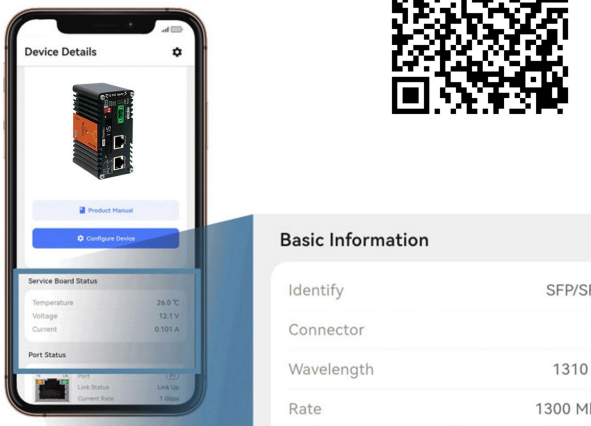
PoE Standards Parameters							
PoE Standards		**Input(V)**	**Current(A)**	**Output(V)**	**Power(W)**	**PoE Pin**	**Mode**
IEEE802.3af/at/bt	af/at/bt	9-12	5	48V	60	1/2(+),3/6(-); 4/5(+),7/8(-)	ModeA&B
	af/at/bt	19-24	5	48V	90	1/2(+),3/6(-); 4/5(+),7/8(-)	ModeA&B
	af/at/bt	48-54	5	48V	90	1/2(+),3/6(-); 4/5(+),7/8(-)	ModeA&B
Starlink PoE	Gen2	48-56	2.67	56	150	1/2(+),3/6(-); 4/5(+),7/8(-)	
	Gen3	48-56	3.57	56	200	1/2(+),3/6(-); 4/5(+),7/8(-)	

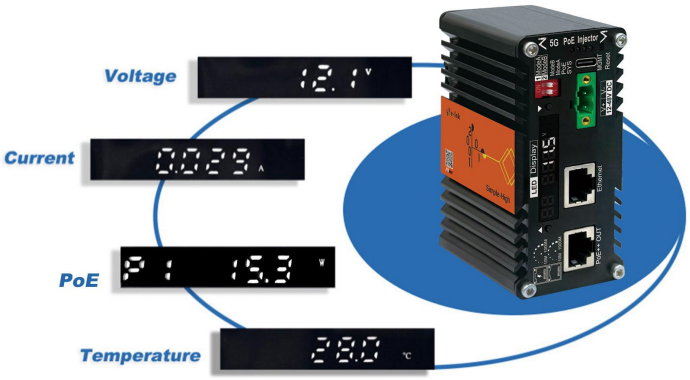


Utilizing hardware IEEE802.3af/at/bt PoE chipset, it automatically powers up PD device with 4 steps (PD Detection -> PoE Classification -> Start Up -> Power ON). Itallocates appropriate power to IEEE802.af/at/bt PoE devices, and no power for non-PoE devices.It ensures high safety for PoE and Non-PoE devices.



E-link App and PC Web



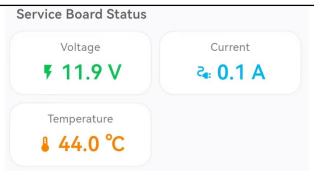
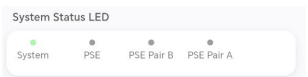
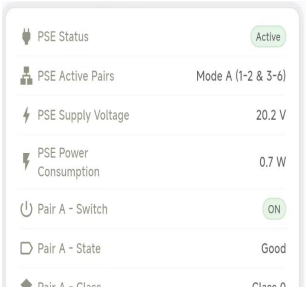


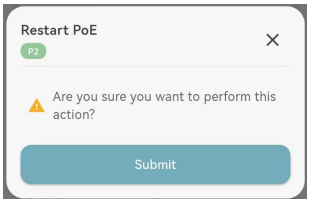
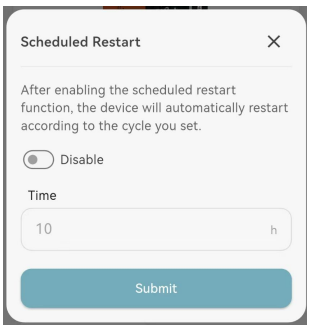
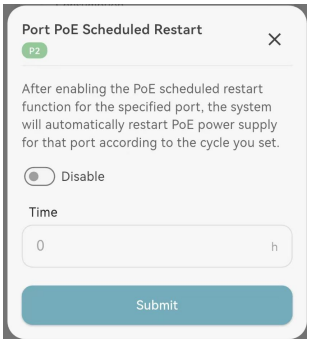
Basic Information	
Identify	SFP/SFP+
Connector	LC
Wavelength	1310 nm
Rate	1300 Mbps
Distance	SM 20 km

DDM Information	
Temperature	33.9 ℃
VCC	3.3 V
Tx Bias	18.2 mA
Tx Power	-5.9 mW
Rx Power	-40.0 mW



Technical Indexes

Industrial AI Smart Managed PoE++ Injector with Voltage Booster		
Access Mode	10M~5G BASE-T RJ45 to 10M~5G BASE-T RJ45 PSE IEEE802.3af/at/bt	
Ethernet		
Standards:	Standards Compliance IEEE 802.3 Ethernet	
	IEEE 802.3u Fast Ethernet	
	IEEE 802.3ab Gigabit Ethernet	
	IEEE 802.3x Full-Duplex Flow Control	
	IEEE 802.3az Energy Efficient Ethernet (EEE)	
Processing Type	Store-and-Forward	
Forward Filter Rate	14,880pps (10Mbps) and 148,800pps (100Mbps)	
	1,488,000pps (1000Mbps) ; 3,720,000pps (2.5Gbps) ; 7,440,000pps (5Gbps)	
Packet Buffer Memory	1 Mbit	
Max Packet Length	9K Bytes	
Switching Capacity	10 Gbps/non-blocking	
PC (Support MacOS, Windows)		
MacOS Browser:	Microsoft Edge 89+ (Release date: 2021-03-04 or later version) Google Chrome 89+ (Release date: 2021-03-02 or later version) Opera 75+ (Release date: 2021-03-24 or later version)	
Windows Browser:	Microsoft Edge 89+ (Release date: 2021-03-04 or later version) Google Chrome 89+ (Release date: 2021-03-02 or later version) Opera 75+ (Release date: 2021-03-24 or later version)	
Mobile App (Support Android, Not Support iOS)		
Mobile Phone APP(Android)	Support all Android Mobile Phone and Android Tablet	
Mobile iPhone APP(iOS)	Not Support iPhone or iPad	
AI Smart Managed Functions		
Service Board Status	Temperature	
	Voltage	
	Current	
System Status LED	Mode B	
	Mode A	
	PSE	
	SYS	
RJ45 Port Status	PSE Status	
	PSE Active Pairs	
	PSE Supply Voltage	
	PSE Power Consumption	
	Pair A/B - Switch	

	Pair A/B- State			
	Pair A/B- Class			
DIP Switch	DIP1	Mode A		
	DIP2	Mode B		
Restart PoE	Support			
Scheduled Reset	Support			
Port PoE Scheduled Restart	Support			
Interface port				
Ethernet Port	1-Port 10/100/1000M/2.5G/5G BASE-T Ethernet RJ45 interface Auto-negotiation, auto MDI/MDI-X			
	1-Port 10/100/1000M/2.5G/5G BASE-T RJ45 Support IEEE802.3af/at/bt			
	Cable: Cat 5e or above; Distance: ≤100 meters at 1000M data rate, ≤250 meters at 10M data rate			
PoE (Power over Ethernet)				
Standard	IEEE 802.3af/at/bt PoE++ PSE (af: 15.4W, at: 30W, bt type3: 60W, bt type4: 95W)			
PoE Power Output	90 Watts max.			
Power Pin Assignment	End-span + Mid-span:1/2(+), 3/6(-); 4/5(+),7/8(-)			
PoE Budget	Up to 90-watt PoE budget (9-54VDC)			
PoE Power Supply Type	802.3af/at/bt, End-span + Mid-span (If need passive PoE please contact customer service)			
PoE Mode	Compatible with Mode A and Mode B			
Voltage Booster	DC 9-12V Input	PoE 48V Output, max 60W	DC 19-24V Input	PoE 48V Output, max 90W
	DC 24-36V Input	PoE 48V Output, max 90W	DC 48-54V Input	PoE 48V Output, max 90W

Electrical and Mechanical	
Input Power	9~54V DC, 2-pin terminal block
Power Consumption	5W Max. (When PoE not used)
Dimensions (W x D x H)	98 x 67x 46 mm
Weight	300g
Casing	Aluminum Case
Mounting Options	DIN-Rail
LED Indicators	
Mode B	Green Solid On: Mode B on
Mode A	Green Solid On: Mode A on
PoE	Yellow LED Solid On: Connected PD
	Yellow LED Off: Not connected PD
SYS	Green LED Blinking: Operating normally
Environmental	
Operating Temperature	-40°C to 75°C (-40°F to 167°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Relative Humidity	5% to 95% non-condensing
MTBF	> 200,000 hrs
Regulatory Approvals	
ISO9001, CE, FCC Part 15 Class A, RoHS	
EMI: EN55022:2010+AC: 2011, Class A EN 61000-3-2: 2006+A1: 2009+A2: 2009 EN 61000-3-3: 2013 EN55024: 2010	
EMS: IEC 61000-4-2: 2008 (ESD) IEC 61000-4-3: 2010 (RS) IEC 61000-4-4: 2012 (EFT) IEC 61000-4-5: 2014 (Surge) IEC 61000-4-6: 2013 (CS) IEC 61000-4-8: 2009 (PFMF)	

Ordering Information

Model	Description
LNK-AINJ501M90	Industrial AI Smart Managed 1-Port 10/100/1000M/2.5G/5G BASE-T RJ45 to 1-Port 10/100/1000M/2.5G/5G BASE-T IEEE802.3bt 90W PoE++ Injector, 9V to 54V DC power input, with Voltage Booster.

Mounting Options	► Default DIN-Rail bracket included.
Power Options	► 120W/48V 2.5A Power Supply. Open Wire for Terminal Block
	► Power Supply is to be purchased separately.