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Advantech AE Technical Share Document

Date	2017/11/30	**SR#**	
Category	■FAQ □ SOP	**Related OS**	N/A
Abstract	Trouble Shooting for PoE Power Failed.		
Keyword	Managed PoE Switch, PoE LED Indicator, PoE Distance		
Related Product	EKI-7710E-2CP, EKI-7710E-2CPI, EKI-7710G-2CP, EKI-7710G-2CPI, EKI-7712E-4FP, EKI-7712E-4FPI, EKI-7712G-4FP, EKI-7712G-4FPI, EKI-7428G-4CPI, EKI-7659CPI, EKI-9312P, EKI-9316P		

■ Problem Description:

1. The PoE LED has light up but the PD doesn't work. How can we trouble shooting on this issue?
2. The PoE LED off, but I have connected with PD (such as IP Cam). What's the problem on this?

■ Answer:

Please follow below steps to figure out the problem.

❖ Step 1. *Check LED status on PoE managed switch*

Check PoE LED indicator whether turn on or not **(Fig.1)**. If not please refer to **Step 2** otherwise refer to **Step 3**.

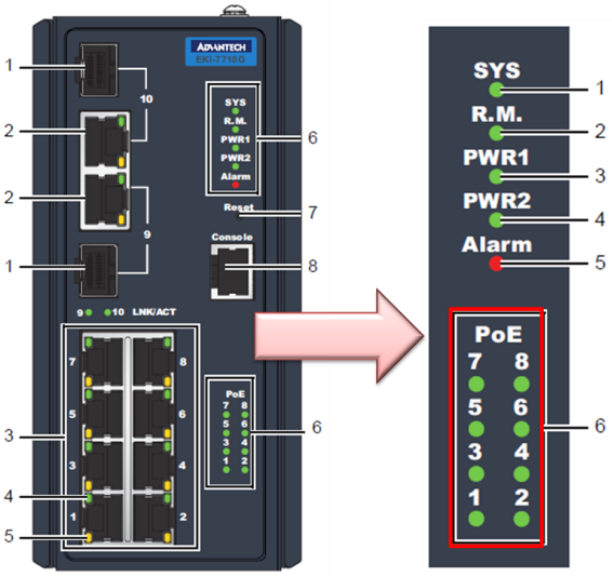

Fig.1. EKI-7710 PoE LED Panel.

❖ **Step 2.** ***Confirm PD complies with IEEE 802.3af / at***

All Advantech PoE managed switch follow IEEE 802.3af (PoE) and IEEE 802.3at (PoE+) specification. Only EKI-7659CPI is IEEE 802.3af. The difference is range of power. PoE is 15.4W and PoE+ can up to 30W. Based on IEEE 802.3af/at standard, PSE must detection whether the connection device is a standard PD or not. If not, PSE won't supply PD power.

In problem 2 this case, you can find PoE LED indicator and port link LED is off. So, please check two things. **The first thing** is whether ethernet cable (RI45 cable) broken. We suggest RJ45 cable should use upper than CAT5e. **The second thing** is PD whether complies with IEEE 802.3af or IEEE 802.3at. **Fig.2** is an example of IP camera's spec, it indicate that satisfies with IEEE 802.3af PoE Class 1.

General	
Connectors	RJ-45 cable connector for 10/100Mpbs Network/PoE connection Digital input*1
LED Indicator	System power and status indicator
Power Input	IEEE 802.3af PoE Class 1
Power Consumption	Max. 3 W
Dimensions	Ø 90 x 50 mm

Fig.2. IP Camera (PD) Spec.

❖ **Step 3.** ***The distance between PSE and PD***

The maximum PoE transmission distance is 100 meter. Once over this transmission limitation, the power to PD is not enough. Take Fig.3 for an example, the spec of IP camera is IEEE 802.3af class1. It means PSE must supply PD power 0.44W~3.84W for working.

In problem 1 this case, you can find PoE LED indicator is on but port link LED is off. Please check **the distance between PSE and PD whether less than 100 meter.** As over 100 meter please change their location. If shorten the distance the PD still can not work, please **measure PD's power (voltage) by power meter.** The problem may be caused by environment

or load.

- **How to measure PD's voltage?**

Stay PSE and PD connection, measure the PIN 1 or PIN 2 (DC+) and PIN 3 or PIN 6 (DC-) near PD by power meter. (Refer to Fig.4)

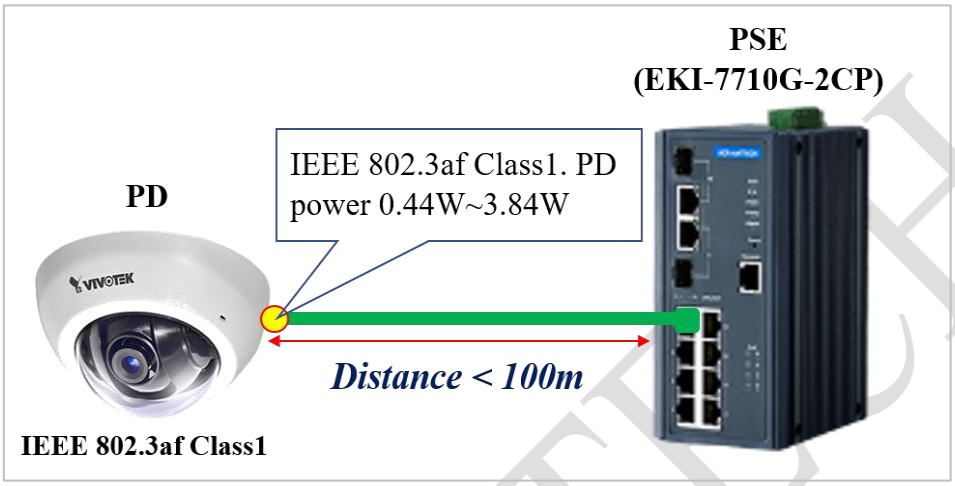

Fig.3. Distance between PSE and PD.

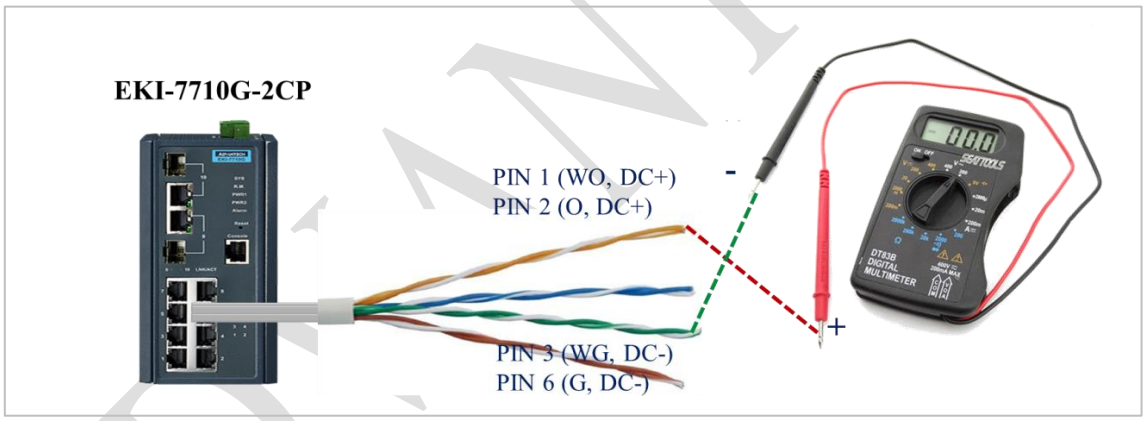

Fig.4. Measure Input Voltage by Power Meter.

❖ **Step 4.** ***Contact with local FAE or ICG.Support***

Before contacting with local FAE or ICG.Support, please provide us below information.

1. What is your problem?
2. The results of ***Step1 to Step3***.
3. Network topology. (Include power supply spec, network device connected on the switch, RJ45 cable length between PSE and PD, Cable specification (Cat.5e..)).
4. The states of port LINK LED and PoE LED.
5. PD's datasheet.