

**Please read this  
document carefully  
before installation!**

**ADSL Loop Extender Power Supply**  
**AEC-RACK**  
**AEC-C2P & AEC-C1PL**  
**Installation Manual**

**Version: 6.1**

**Widearea Telecommunication Technology Co., Ltd**

Add: 2<sup>nd</sup>,3<sup>rd</sup> East Round Longtan Industry Garden 10#,Chengdu, Sichuan, China

Tel: (86)28 84207501 (86)28 84207506 Fax: (86)28 84209696

E-mail: [master@widearea.com.cn](mailto:master@widearea.com.cn) Web Site: <http://www.widearea.com.cn>

## **Preface**

This manual provides information on how to use this product. To make the best use of this product, read this manual thoroughly before use and keep this manual handy for ease of reference.

- The contents of this document may be updated in the future, without prior notice.
- This booklet was created with thorough attention to the content. If, however, you have a question, spot an error, or find a description lacking, please refer to the end of this booklet for information on how to contact us.
- All brand names and trademarks are the property of their respective owners.

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# 1. General Description

**ADSL Loop Extender** can extend the coverage of ADSL lines. It will provide systems with higher performance-to-cost ratio, improve the equipment utilization rate, optimize the network. This product will allow you to double the number of subscribers that you can reach while offering more consistent high bandwidth services to your existing customers.

**ADSL Loop Extender** is an active element installed in the outside loop plant. It operates as an amplifier and equalizes the signal. Generally, it is span-powered. You can use the ADSL Loop Extender Power Supply to provide the span-power.



Figure 1 AEC-RACK and the power card

- AEC-RACK is a rack for AEC-C2P or AEC-C1PL embedded. One rack can be inserted into 13 cards.
- AEC-C2P is two output power supply for express power supply ADSL Loop Extender AER800-xP. Each outlet can supply for one AER800-1P or AER800-2P, or two ports Extender and additional copper pairs are required to supply power.
- AEC-C1PL is one outlet power supply for line power supply ADSL Loop Extender AER800-xPL. Each outlet can supply for one port line power Extender. no additional copper pairs are required to supply power.

## Benefits

- Centralized and regular power supply, make the CO clean
- Comprehensive over-voltage protection.
- Easy to install, deploy and maintain

## 2. Technical Specifications

**Table 1 –Technical Specifications of AEC-RACK, AEC-C2P & AEC-C1PL**

Operating Environment	Temperature	-10°C ~ +45°C
	Relative Humidity	5% ~ 95% (Non-condensing)
Input Voltage	DC48V ( 36V ~ 72V )	
Output Voltage	DC 122V o155V per port	
Output Current	Less than 50mA	
Fuse Rating	10A	
Dimension of RACK	485mm ( L ) ×153mm ( W ) ×133mm ( H )	

## 3. Physical Structure

- **AEC-RACK**

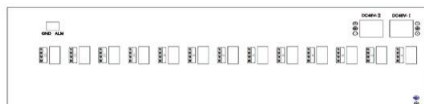


Figure 2 the back panel of AEC-RACK

In figure 2, you can input DC48V through the 2×3 cords “DC48V-I”. The “DC48V-II” is only used in testing in the factory. In the lower right hand corner,

there is a screw through which the rack is grounded. “COM ALM” In the higher left hand corner is only used in testing in the factory.

The outlet “J1 ~ J13” are the DC122V or DC155V output terminal.

- When the card is AEC-C2P, you can get 2xDC122V or 2xDC155V from each card, supply power for express Extender. The instruction of the DC122V/DC155V switch of AEC-C2P, please see the remark below.
  - when the card is AEC-C1PL, you can get 1x155V and ADSL signal from “A2,B2” outlet, supply power for the signal line power Extender.
- **AEC-C2P**

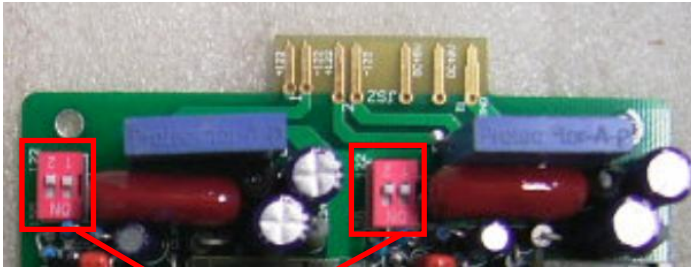


Figure 3 the panel of AEC-C2P

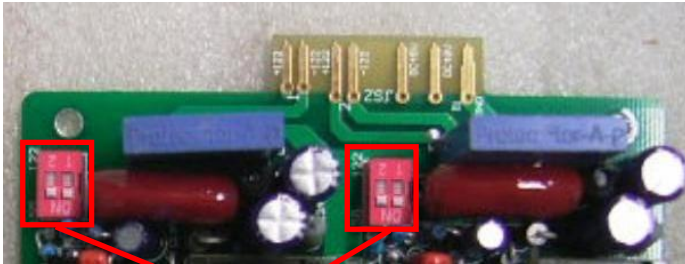
In figure 3, indicators “PWR1” and “PWR2” indicates the status of the equipment. After power supply is connected, press the button “K1” and “K2”, and the corresponding PWR indicator should be solid on. Flashing indicator indicates short circuits or over-current alarm condition.

**Remark:**

In the inner of AEC-C2P, there is two switch setting positions as shown below:



**Switch: In this status, the Output is DC122V**



**Switch: In this status, the Output is DC155V**

The application of DC122V and DC155V:

DC122V can power for one port or two ports ADSL Loop Extender, and DC155V can power for four ports ADSL Loop Extender.

- **AEC-C1PL**



Figure 4 the panel of AEC-C1PL

In figure 4, “PWR” indicates the status of the equipment. After power supply is connected, press the button “K”, and the corresponding PWR indicator should be solid on. Flashing indicator indicates short circuits or over-current alarm condition. “OFF-HOOK” is on indicates the telephone is picking, the light will be on. “Sequence” is on indicates that line sequence inputted incorrectly, please exchange “A1, B1” line sequence, to input correctly, the light will be off.

## 4. Application

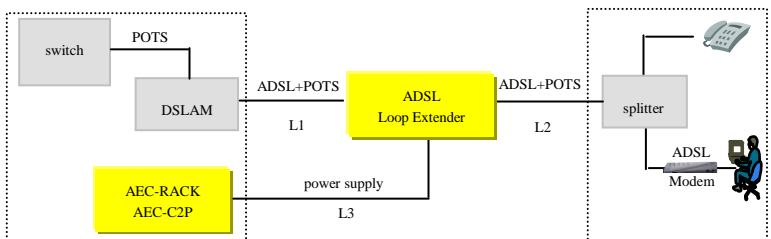


Figure 2 AEC-C2P Application Diagram

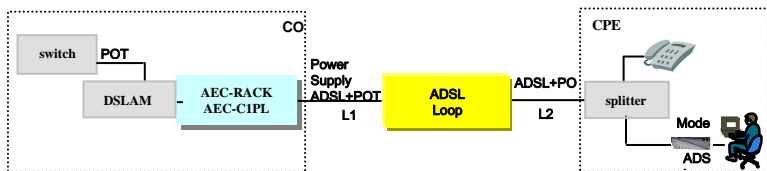
L1: The signal wire pair connecting ADSL Loop Extender to DSLAM.



L2: The signal wire pair connecting ADSL Loop Extender to Modem.

L3: The power wire pair connecting ADSL Loop Extender to power supply.

**Note:** ADSL Loop Extender with remote power supply AEC-C2P from central office, additional copper pairs are required to power the Extender.



**Figure 3** AEC-C1PL Application Diagram

L1: The signal twist pair connecting power supply to Extender

L2: The signal twist pair connecting ADSL Loop Extender to Modem.

**Note:** Signal line power supply Extender with remote power supply AEC-C1PL from central office, no additional copper pair required to power the Extender.

## 5. Installation Procedure

### 1. Unpack

Unpack equipment carefully; check for completeness against the purchase order.

Notify the supplier if items are missing.

**Note:** Save packing material. All equipment returned must be packed in the original packing material.

Inspect equipment for shipping damage, including bent or loose hardware, and broken connectors.

If equipment was damaged in transit, contact the supplier.



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## 2. Install the power supply

**Attention:** ADSL Loop Extender's power supply should NOT be turned on until the Extender installation is finished. When the power supply wire is active, wires carry DC122V or DC155V. Do not touch wire A and wire B simultaneously, or allow wires to contact anything!

- (1) Fix the AEC-RACK in the 19" cabinet, ground the RACK through the grounding screw in the lower right hand corner at the back of the RACK.

**Attention:** Copper-core wire with no less than 2.5mm<sup>2</sup> section area is required as ground wire. One end of the wire should connect to Loop Extender's ground terminal. The other end of the wire should connect to a good ground point.

- (2) Insert Power Supply card AEC-C2P or AEC-C1PL into AEC-RACK.  
 (3) Connect the power supply cable

**Attention:** The cable connecting of AEC-C2P and AEC-C1PL is different, please make sure the type of your card and follow the respective method below.

- **AEC-C2P**

An additional copper pair(L3 as shown in Fig. 1) is required for one output power. The supply voltage will pass through power converter and feed to this additional pair.

**Table 2- the Description of the buttons, indicators and outlets**

Buttons, Indicators and Outlets			description	
K 1	PWR1	J		First output, connect the twist pair to Extender through an additional twist pair.
		A1	B1	



K2	PWR2	J		Second output, connect the twist pair to Extender through an additional twist pair.
		A2	B2	

Note: 1. In this table, the “J” indicates any of the outlet “J1 ~ J13”

PWR11~PWR22 indicators should be on. Flashing indicator indicates short circuits or over-current alarm condition.

- **AEC-C1PL**

No additional copper pair is required for power. Choose the signal line from the DSLAM/Switch, connect it to the “A1, B1” terminal of AEC-C1PL. Choose the signal line linked to the Extender, connect it to “A2, B2” terminal of AEC-C1PL.

**Attention: Do not connect the cable linked to the Extender to the “A1, B1” terminal, and do not connect the cable of the DSLAM /Switch to the “A2, B2” terminal, or else, the equipment would be damaged.**

**Table 3- the Description of the buttons, indicators and outlets**

Buttons, Indicators and Outlets			description
J	A1	B1	Signal line input, connect the twist pair from DSLAM.
	A2	B2	Signal and Power supply output, connect the twist pair to Extender.
Power			Power indicator
OFF-HOOK			The status of telephone indicator
Sequence			The signal line sequence inputted indicator

Note: 1. In this table, the “J” indicates any of the outlet “J1 ~ J13”

PWR11~PWR22 indicators should be on. Flashing indicator indicates short circuits or over-current alarm condition.



(4) Connect power cord(do not apply power yet)

The supplied accessories include power cord for DC48V. Connect it to the DC 48V power source with good connection. Please connect the cord according to the sign of polarization.

**Attention: ADSL Loop Extender’s power supply should NOT be turned on until the Loop Extender installation is finished.**

## 6. Troubleshooting

**Table 4 AEC-C2P Troubleshooting**

Problem Description	Possible Reason	Suggested Resolution
Equipment does not work after power-up. Status LED is OFF.	Power cord is not correctly connected.	Check power cord connection.
Power indicator flashes.	Power output circuitry fails.	Check whether the connection is shorted.
Output is OK but the Extender does not work.	Power output cable connection is error or short.	Correct the power output connection or check cable.

**Table 5 AEC-C1PL Troubleshooting**

Problem Description	Possible Reason	Suggested Resolution
“Power” is off	Power cord is not correctly connected.	Check power cord connection.
	Power switch is not open	Press the power switch

“sequence” is on	The line sequence connected incorrectly	Exchange line sequence of “A1” and “B1”.
Output is OK but ADSL extender does not work.	Signal cable connection is error or short	Correct the Signal cable connection or check cable.