Overview

The CE family of ICSLan Control Extender Boxes provides Ethernet-based remote port expansion for AMX Central Controllers and other Harman HControl-enabled gear.

CE-series Control Extender – Product Family		
Name	**FG#**	**Description**
CE-IRS4	AMX-CEB001	Control Extender – 4 IR
CE-REL8	AMX-CEB002	Control Extender – 8 Relay
CE-COM2	AMX-CEB003	Control Extender – 2 COM
CE-IO4	AMX-CEB004	Control Extender – 4 I/O

Common Features

CE-Series Common Features	
Dimensions	1" x 4 1/16" x 4 3/32" 2.5 cm x 10.3 cm x 10.4 cm (1/4 RU Width x <1 RU Height)
Weight	1lb 454 g
Power Requirements	PoE – 802.3af Class 1 15.4W Maximum
Enclosure	Powder-coated steel w/ grey matt finish
Certifications	FCC Part 15 Class B, CE, and IEC 60950
Environmental Requirements	*Operating Temperature*: 0° C (32° F) to 40° C (104° F) *Storage Temperature*: -10° C (14° F) to 60° C (140° F) *Operating Humidity*: 5% to 85% RH (non-condensing) *Heat Dissipation (Max)*: 52.5 BTU/hr Designed for indoor use only.
Front Panel Components	
ID Pushbutton	
Status LED	A multi-colored LED indicating the device status (see fig 1)
L/A LED	A network link/activity light
Rear Panel Components	
Ethernet	RJ-45 connector provides IP communication and PoE
Phoenix Connector	Module-specific captive wire connectors (See below)

LED Patterns

The CE-series features one tri-color LED for status.

Color	Frequency	Status
Green	Solid	Power, no connection
Green	1 Hz	HControl connection
Yellow	Solid	Booting
Cyan	3 Hz	Updating*
White	Solid	Locate mode
Red	1 Hz	Error, not running

* - Please do not disconnect from power when updating
Fig1 – Led Patterns

SAFETY INSTRUCTIONS

• For UL compliance, the CE family of ICSLan Device Control Boxes should be powered directly via any listed external IEC/UL 60950-1 2nd edition certified LPS PoE switch or injector, such as the AMX NXA-ENET8POE or PS-POE-AF.

Getting Connected

By default, the CE-series is set to DHCP, so an IP address will be requested. To find the IP address the CE-series module received, use the CloudworX Desktop Manager application to discover HControl devices on your network. See www.amx.com for more information.

Configuration

Once you have the IP address of the CE-series module, you can configure the device via the on-board web server. Open a browser and point it to the discovered IP address. The default credentials are:

Default Credentials	
Username	admin
Password	password

Upon the first successful login, you will be prompted to create a new username and password. Once entered, the default credentials will no longer be valid. See the CE-Series Hardware Instruction Manual for more details.

Module-Specific Connectors

CE-COM2

Port 1 (RS-232, RS-422, RS-485 configurable):

CE-COM2 – Port 1 Pinout					
		Port Configuration			
Signal	Function	RS-232	RS-422	RS-485	
GND	Signal Ground	X			
RXD	Receive Data	X			
TXD	Transmit Data	X			
CTS	Clear to Send	X			
RTS	Request to Send	X			
TX+	Transmit Data		X	X	strap to RX+
TX-	Transmit Data		X	X	strap to RX-
RX+	Receive Data		X	X	strap to TX+
RX-	Receive Data		X	X	strap to TX-
12VDC	Power				

Port 1 (RS-232 Only)

CE-COM2 – Port 2 Pinout	
Signal	Function
GND	Signal Ground
RXD	Receive Data
TXD	Transmit Data
CTS	Clear to Send

CE-IO4

Configurable as voltage sensing or digital output

CE-IO4 – Pinout	
Signal	Function
GND	Signal Ground
1-4	Individually configurable I/O
+12vdc	Vcc

- Each pin is individually as a voltage sense input or a digital output.
- Threshold settings are available to determine the high/low points for the digital input and the required voltage change to generate an update.
- Digital Output can push or pull 100mA

CE-IR4

Configurable as voltage sensing or digital output

CE-IR4 - Pinout			
Signal	Function	Signal	Function
1-	IR 1 GND	3-	IR 3 GND
1+	IR 1 Signal	3+	IR 3 Signal
2-	IR 2 GND	4-	IR 4 GND
2+	IR 2 Signal	4+	IR 4 Signal

- Each pair is configurable as IR or 1-way RS-232
- Baud rates for RS-232 are limited. See manual.
- RS-232 voltages are 0-5v, not +-12v

CE-REL8

- 8 Normally open, single pole contacts

CE-REL8 - Pinout			
Signal	Function	Signal	Function
1A	Relay 1 Common	1B	Relay 1 NO
2A	Relay 2 Common	2B	Relay 2 NO
3A	Relay 3 Common	3B	Relay 3 NO
4A	Relay 4 Common	4B	Relay 4 NO
5A	Relay 5 Common	5B	Relay 5 NO
6A	Relay 6 Common	6B	Relay 6 NO
7A	Relay 7 Common	7B	Relay 7 NO
8A	Relay 8 Common	8B	Relay 8 NO

- Connectors are labeled A and B.
- These relays are independently controlled, isolated and normally open.
- The relay contacts are rated for a maximum of 1 A @ 0-24 VAC or 0-28 VDC (resistive load).

Network Configuration

DHCP with Auto Private Fallback

The CE-series Control Extender boxes default to requesting a DHCP address. If it fails to obtain an address from the DHCP server, a Link Local address will be assigned in the 169.254.0.0/16 range.

HControl Network Discovery

The CE-series Control Extender boxes use HControl to talk to other Harman devices that use HControl.   HControl includes a discovery protocol to allow new devices to be found on the network. CloudworX Manager Desktop software will find nearby HControl devices, including the CE-series Control Extender boxes.

Built-in Web Server

The CE-series Control Extender boxes contain a built-in web server to allow for configuration and control of the boxes. On the web server, you can:

- Configure the IP address
- Load security certificates
- Update firmware
- Configure baud rate
- Send serial messages
- Configure input/output parameters
- Load .irl files for IR control
- Send IR commands without a program
- Actuate relays without a program

Please consult the CE-Series Hardware Instruction Manual for details.