



Axon C1

Programmable IP Controller



User Manual

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614-00050

IMPORTANT SAFETY INSTRUCTIONS

The symbols below are internationally accepted symbols that warn of potential hazards with electrical products.



This symbol, wherever it appears, alerts you to the presence of un-insulated dangerous voltage inside the enclosure -- voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and third grounding prong. The wider blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by Attero Tech
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. When permanently connected, on all-pole mains switch with a contact separation of at least 3mm in each pole shall be incorporated in the electrical installation of the building.
16. If rack mounting, provide adequate ventilation. Equipment may be located above or below this apparatus but some equipment (like large power amplifiers) may cause an unacceptable amount of hum or may generate too much heat and degrade the performance of this apparatus.



TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

WARRANTY INFORMATION

For a copy of the QSC Limited Warranty, visit the QSC website at www.qsc.com

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and EN55022. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.





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1 - Overview



Figure 1 - C1 Front Panel

The Axon C1 is an assignable IP-based control solution for networked AV systems.

The C1 features a small form factor, single gang Decora in-wall design with an OLED display and rotary encoder for simple AV systems control of volume, mute and preset recall. Extended control functionality can be developed using the C1 menu customization tools found with Attero Tech's unIFY Control Panel software.

Given the flexibility of the C1 product, virtually any audio DSP or AV equipment with Ethernet-based 3rd party control can be controlled using the C1 controller. In addition, a Q-SYS Designer plug-in is readily available that minimizes the need for any custom programming.

1.1 - What's in the Box

The C1 comes supplied with the following:

- Axon C1 device (P/N: 900-00223-01)
 - Includes interchangeable white and black Decora-style inserts
- (1) White US Single Gang Decora® cover plate
- (1) Black US Single Gang Decora® cover plate

2 - Device Installation

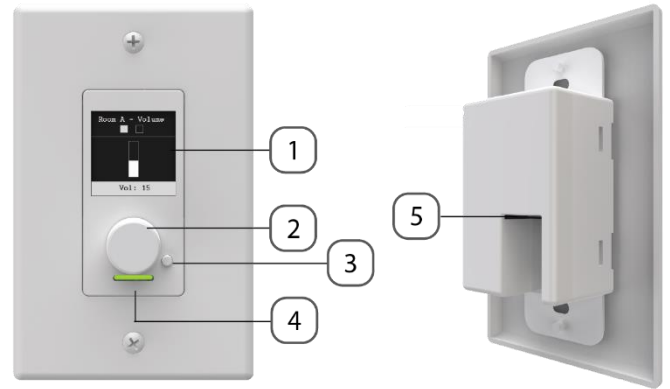


Figure 2 - Product Overview

ID	Description
1	OLED Display
2	Rotary Encoder/Button
3	Menu/Toggle Button
4	Status Indicator
5	Ethernet interface connector and indicators

***Note:** The C1 has a label on the back of the unit that shows the device MAC address. This is important for initial device identification as the last 6 digits make up part of the device default network name that is shown when the device is detected by Attero Tech's unIFY Control Panel software.

2.1 - Mounting

A typical installation will involve mounting the wall plate into a pre mounted wall box or mounting bracket. Before installation, make sure the wall box where the C1 is to be installed is pre-wired with a suitable cable back to a PoE-enabled network switch or mid-span injector. If a mid-span injector is being used, the cable should be connected to the port that supplies both Ethernet and power (refer to the devices manual if unsure which port is which).

Attach the network cable from the switch/mid-span injector to the Ethernet port of the C1. If the switch or mid-span injector is already running and PoE is enabled, the unit will power up and the green status LED on the front of the device will turn on.

With the cable attached, carefully place the C1 into the wall box taking care to not trap the cabling. Once in place, secure it with the screws provided. Once the unit is secured in the wall box, fit the Decora plate and secure it with the screws provided.

The C1 comes in a single gang US Decora style form factor and may be mounted in most US single old and new work back boxes and mud-rings. Given the single gang size, the C1 may be mounted in larger gang boxes with other single gang form factor products to provide flexible AV system modularity where needed.

**Note: CAD drawings can be downloaded from the Attero Tech website. Please contact Attero Tech for any further product related information that is not accessible on the website.*

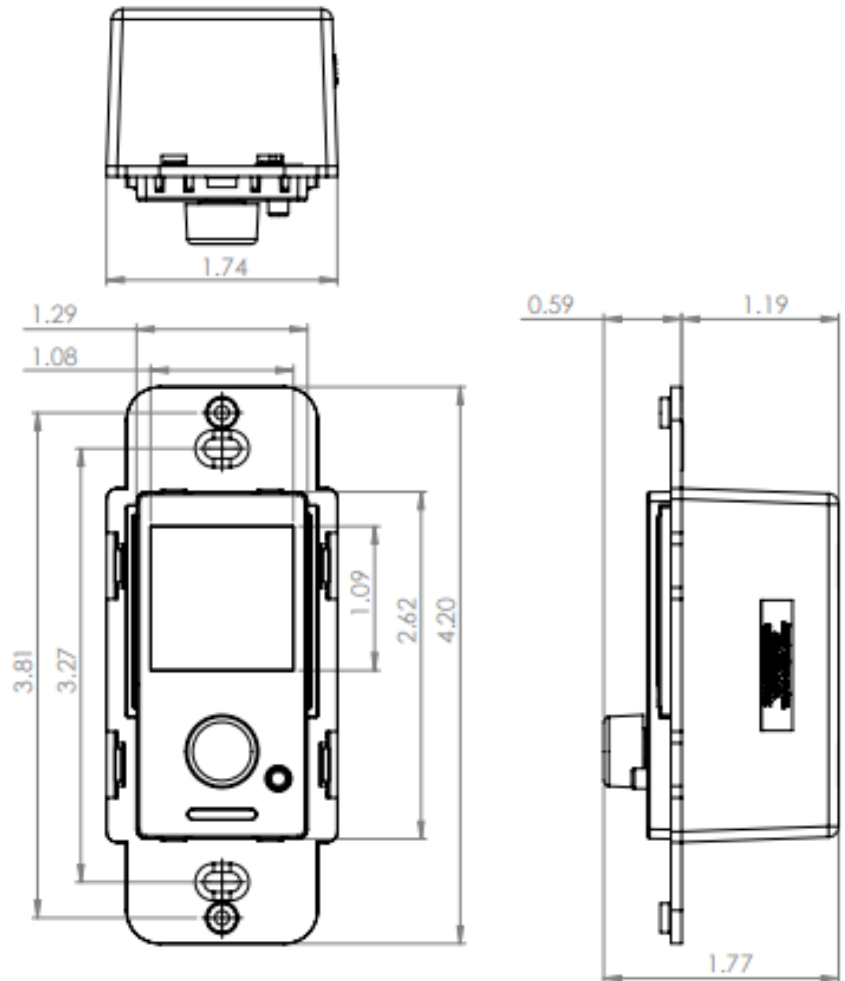


Figure 3 - Dimensional Drawing

2.2 – Display Status Indications

On power up, the C1 will present a splash screen. Below it, three small boxes are displayed. These boxes indicate the state of the initialization process of the C1 and the boxes will be filled in as each initialization step is completed.

These indications mean something slightly different based on what mode the C1 is set to run in.

When the C1 is configured in “3rd Party” mode, the boxes indicate:

1. The C1 acquired an IP address.
2. The C1 received the configured “Startup Synchronization” message (optional).
3. The C1 sent the configured “Initialization Macro” messages (optional).

When the C1 is configured in “Q-SYS” mode, the boxes indicate:

1. The C1 acquired an IP address.
2. The C1 has received an initialization command from a C1 Q-Sys plug-in.
3. Unused (Filled also fill in when step 2 complete)

Once the initialization is complete, the C1 will then begin normal operation.

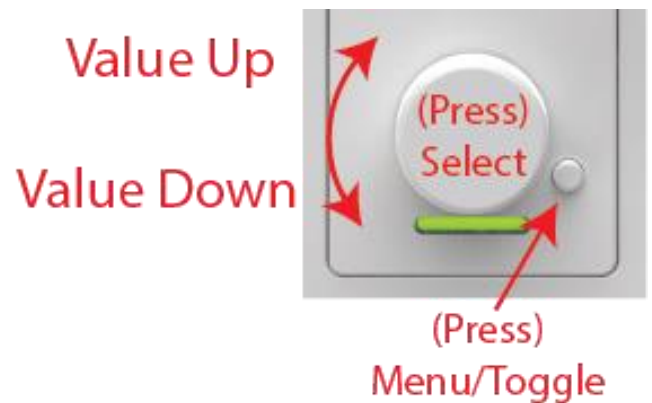
2.3 – LED Status Indications

The C1 is equipped with an LED indicator below the rotary encoder. The following chart indicates the available LED status information:

LED State	Status
Slow Flashing White	Identify function active
Green	If audio metering is enabled, the audio level > -40 dBFS and < -20dBFS
Yellow	If audio metering is enabled, The audio level ≥ -20 but < 3
Red	If audio metering is enabled, The audio level ≥ 3 dBFS
Blue	Mute is active
Flashing Blue	Firmware update in progress
Steady White	Main menu is active
Quick Flashing White	A menu selection has been executed

2.4 – Controls

Once configured, the C1 controls the desired devices simply by using the encoder knob and menu/toggle button.



3 – Device Configuration and Workflow Overview

The C1 may be programmed to interface with many 3rd party products supporting networked control over UDP or TCP/IP based protocols.

Integrators will first use unIFY Control Panel to create the basic menu structure required for the end user application requirements. Then depending on the target system or products to be controlled, the integrator will configure the underlying control mappings.

In addition, Attero Tech C1 Integration Guides and supporting integration materials are also located on the online support desk to expedite the integration of C1 controllers with common AV systems such QSC Q-SYS based DSP systems.

Refer to the the 3rd Party API Documentation under the Documents tab on the [Axon C1 product page](#) for a complete list of these features.

3.1 – IP Address Setup

***** IMPORTANT *****

Failure to correctly configure IP addresses will not allow a C1 device to correctly authenticate in the unIFY Control Panel software, and configuration and control to and from the C1 will not be possible.

In order to configure a C1 or to update C1 firmware, a PC will need to be able to communicate with it over the network. While all C1 devices will be discovered regardless of the IP address setup on the PC (the C1 utilizes mDNS for device discovery), full communication can only occur if the PC and the device have compatible IP addresses.

By default, C1 is set to get a dynamic IP address. If the C1 device does not find a DHCP server to retrieve an IP address from, it will give itself an automatic private IP address (APIPA) instead. An APIPA is always in the range 169.254.x.y.

To ensure communication, the PC can either be set to get a dynamic IP address, or be given a static IP address in the range 169.254.x.y. The PC may require a restart for the changes to take effect.

3.2 – Factory Reset

***** IMPORTANT *****

The factory reset returns the entire device to its factory defaults. Using this feature will mean all custom settings will be cleared.

**NOTE: The factory reset is a useful way of quickly restoring communications with a device which has an unknown static IP address, as a factory reset returns the device's network settings to getting a dynamic IP. Having successfully completed a factory reset of the device, setting the PC's IP address to also obtain a dynamic IP address should then allow the PC to communicate fully with that device.*

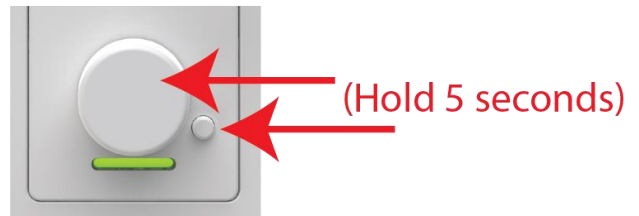


Figure 4 - Reset button access

**Note: The factory reset can only be initiated when the device is "awake". If the C1 display is asleep, it needs waking up first. If the C1 has security lockout enabled, the factory reset cannot be applied until the code has been entered.*

The factory reset is performed on the front panel of the unit. The function is activated by pressing and holding the encoder button and the menu toggle button simultaneously for 5 seconds. The unit will initialize and all user settings including any assigned menu content will be cleared.

3.3– Device Info Screen

The C1 includes a Device Info screen that may be accessed by pressing and holding the menu button for 1 second. This screen will display the following information:

- IP address
- IP assignment mode
- MAC address
- Current device name
- Firmware version

This feature is not available when the C1 front panel lock is active.

3.4 – Firmware Updates

The C1 supports field firmware updates. The updates are applied via the network using Attero Tech unIFY Control Panel's smart firmware update tools within the application. The latest C1 SFU file is available from the [Attero Tech Firmware page](#) on the QSC website.



ARCHITECTS & ENGINEERS SPECIFICATION

The single gang mount interface unit shall have an OLED display screen and a pushbutton encoder knob and secondary pushbutton for controls.

The device shall support mounting the mounting of multiple units side by side in a multi-gang wall box or one unit in a single gang US wall box.

The unit shall accept either IEEE 802.3af standard PoE from an IEEE 802.3af PoE compliant network switch or mid-span injector.

The unit shall support a flexible programming interface for targeting control of 3rd party AV systems and products.

The unit shall include a software plugin for simple interfacing with QSC Q-SYS based DSP systems.

The network control interface shall be compliant with the RoHS, WEEE and REACH directives.

The network control interface unit shall be Compliant with the EMC/ESD requirements for FCC and CE.

The unit shall be the Attero Tech Axon C1 product.

Device Specifications

Controls	
User Interface	One rotary/pushbutton encoder knob One pushbutton toggle selector
Display	
Display Type	1.5" (Diagonal) High Contrast OLED Display
Status Indicator	RGB LED bar, adjustable brightness

Network	
Physical Layer	Ethernet
Connector (s)	RJ-45
Cable Quality	CAT-5e or better, UTP
Transmission Speed	100 Mbps
Power Specifications	
PoE Power	802.3af Class 0
Power Consumption	< 2W Max
Physical Dimensions	
Width	1.74"
Height	4.2"
Depth	1.77" (1.19" in-wall)
Weight	0.25 lbs.
Regulatory Compliance	
Certifications	FCC Part 15, Subpart B, Class A EMC CE (EN55032 EMC / EN55035 ESD) WEEE RoHS REACH
Environmental Operating Specifications	
Operating Temperature	0 to 40° C