

# AXN/CHS/03U

Axon chassis - 3 user-slots

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## Overview

The AXN/CHS/03U is a 3 user-slot Axon chassis, which along with the housing and backplane, includes an isolated 50W power supply for the controller and user-modules.

A wide input operating range, advanced protection with fault monitoring and glitch immunity all contribute to robust operation with a variety of power sources.

Any user-module can be placed in any user-slot, in any combination. User-modules may also be remotely located via the use of an Axonite housing.

## Key Features

- 50W power supply unit and 3 user-slots
- 18 to 68 VDC isolated power supply
- Rugged aluminum housing
- Supports remote Axonite mounting of user modules
- LED power and status indicator

## Applications

- Flight Test Instrumentation
- Flight Data Acquisition
- Space Data Acquisition

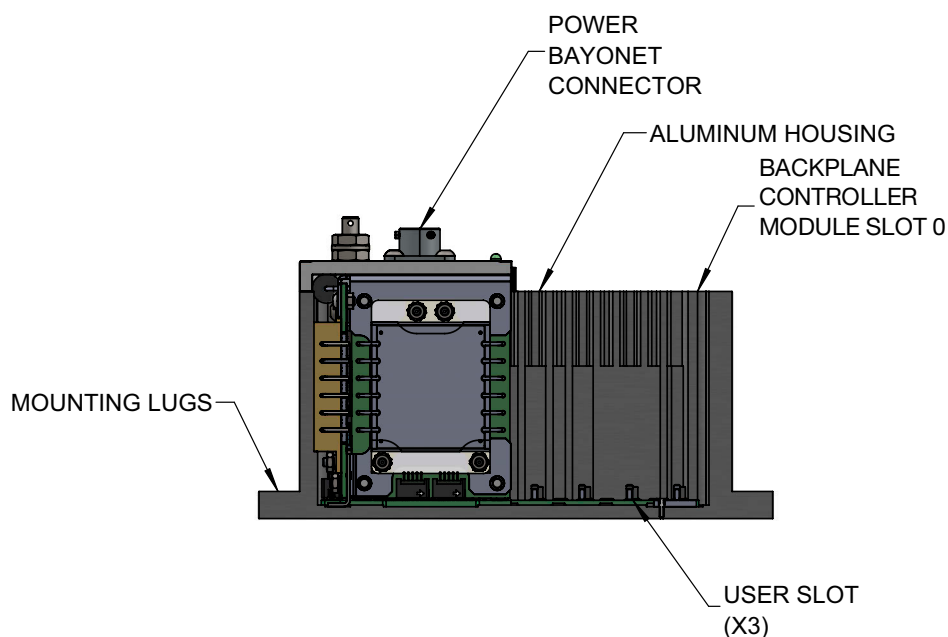


Figure 1: AXN/CHS/03U with PSU and 3 user-slots

# Specifications

All values provided in the following specification tables are valid within the operating temperature range specified under “Environmental ratings” in the “General specifications” table.

TABLE 1		General specifications				
PARAMETER	MIN.	TYP.	MAX.	UNITS	CONDITION/DETAILS	
User slots	-	-	3	-		
Dimensions					Design metric is millimeters.	
height	-	89.00	-	mm	Includes module retention screws and ground bolt.	
height	-	3.50	-	in.	Includes module retention screws and ground bolt.	
length	-	151.50	-	mm	Includes mounting lugs.	
length	-	5.96	-	in.	Includes mounting lugs.	
width	-	55.00	-	mm		
width	-	2.17	-	in.		
Mass					Design metric is kilograms.	
no modules	-	0.57	-	kg	Includes power supply.	
no modules	-	1.25	-	lb	Includes power supply.	
fully populated	-	0.79	-	kg	Typical module weight of 55 g.	
fully populated	-	1.74	-	lb	Typical module weight of 1.94 oz.	
Environmental ratings					See <i>Environmental Qualification Handbook for Axon products</i> .	
operating temperature	-40	-	85	°C	Chassis base/side plate temperature.	
storage temperature	-55	-	125	°C		
Finish						
top parts	-	-	-	-	Painted REINORANGE RAL2004.	
side and end plates	-	-	-	-	Painted black GRIGIO SCURO OPACO C604.	
base plate	-	-	-	-	Electroless nickel-plated.	
Chassis material	-	-	-	-	Aluminum alloy 6082-T6 (Din No: AIMgSi1).	

TABLE 2		AXN/BCU/40x M3 captive screws				
PARAMETER	MIN.	TYP.	MAX.	UNITS	CONDITION/DETAILS	
Tightening torque	-	-	-	-	The AXN/CHS/03U ships with a backplane controller module (AXN/BCU/40x) preinstalled in slot 0 of the chassis. When replacing the controller module, tighten the three M3 screws to a torque of 0.6 Nm (0.44 foot pound-force) when using a nut-locking solution. When not using a nut-locking solution, tighten to a torque of 0.7 Nm (0.52 foot pound-force). Double-click this link <a href="#">to open the embedded Axon handling precautions data sheet for details.</a>	

TABLE 3		Electrical specifications			
PARAMETER	MIN.	TYP.	MAX.	UNITS	CONDITION/DETAILS
Input range	18	28	68	V	This is compliant with all DO-160G Section 16.6.1.1 Cat B (28 Vdc) requirements and Mil Std 704A-F normal operating requirements. The operating range of 16V - 29V defined in Mil Std 704F Section 5.3.2.3 for emergency operation is also supported, but it is not recommended that the nominal power supply rail be below 18V.
Reverse polarity protection	-68	-	-	V	Applied indefinitely.
Input transient protection	-600	-	600	V	For 10 $\mu$ s, 50 $\Omega$ source impedance. Compliant with DO-160G Section 17 and Mil Std 704A Fig 17.
Output power	-	-	50	W	Power available to controller and user-modules.
Glitch immunity	104	-	753	ms	Dependant on load (see "Getting the most from the AXN/CHS/03U" on page 4). This satisfies Mil Std 704A-F and DO-160G Section 16.6.1.3 Cat B brownout immunity requirements for all possible loads.
Efficiency	-	84	-	%	At full load (50W).
Peak inrush current	-	-	2.26	A	Measured with an input voltage of 28V and a 50W load. This equates to a 6.6% increase over the maximum steady state current draw of the system (2.12A), satisfying DO-160G Section 16.7.5.2 requirements.

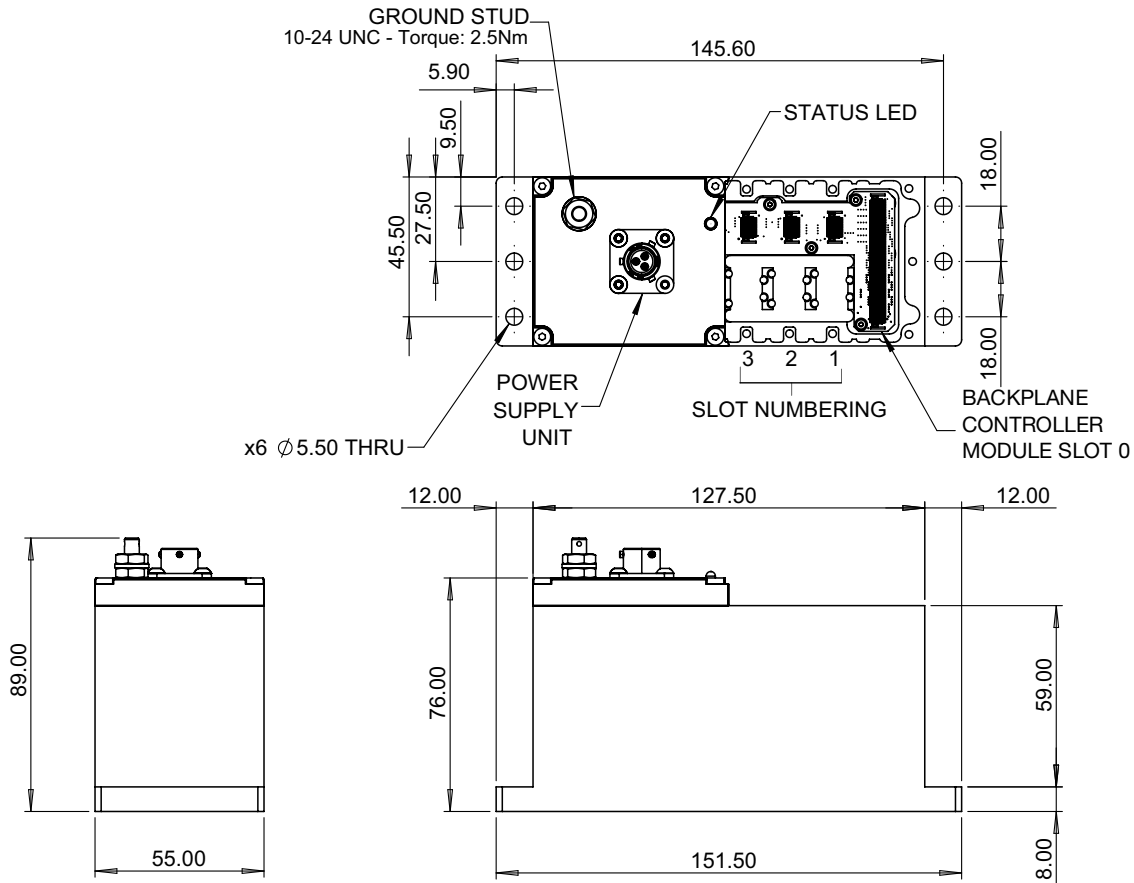


Figure 2: AXN/CHS/03U mechanical drawing showing slot numbering 1 - 3

## Getting the most from the AXN/CHS/03U

The AXN/CHS/03U chassis incorporates a capacitor bank for power glitch and brownout immunity. This provides a hold-up time of 106 ms into a 50W load. The hold-up time depends on the load as shown in the following figure.

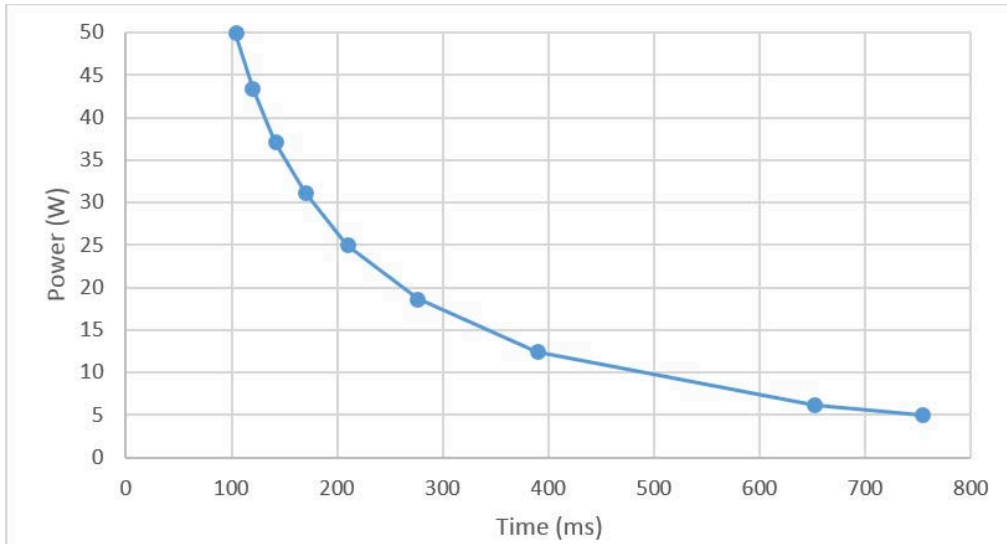


Figure 3: Glitch immunity versus load

**NOTE:** In the figure above, the minimum load tested (5W) represents the minimum useful configuration of one controller and one user-module.

Slot 0 is always reserved for the AXN/BCU/40x backplane controller module. A backplane controller module is required for control and programming of user-modules. The LED on top of the AXN/CHS/03U is used for system status indication, which is received from the AXN/BCU/40x. Refer to the *AXN/BCU/40x* data sheet for status definitions.

## Connector pinout of the AXN/CHS/03U

PIN	NAME	DESCRIPTION	COMMENT
A	P+	Nominal 28V supply	Isolated internally; aircraft power
B	P-	Return for nominal 28V	Isolated internally; aircraft power
C	GND	Internal ground	

## Ordering information

PART NUMBER	DESCRIPTION
AXN/CHS/03U	Axon chassis - 3 user-slots

By default, the standard power connector (CON/PSU/008 and BAC/PSU/007) is included with each chassis in the shipment, while a standard power cable (CON/PSU/008/FL/100) is included with each order. Their part numbers will be added to the Confirmation of Order unless an alternative option is specified (see the *Cables* data sheet). In addition, a 2-mm Allen key (ACC/TOL/004) and a 5-mm nut driver (ACC/TOL/041) are included in each order. Their part numbers will be added to the Confirmation of Order. Additional items must be ordered separately; refer to Related products for options.

## Revision history

REVISION	DIFFERENCES	STATUS
AXN/CHS/03U	First release	Recommended for new programs

## Supporting software

SOFTWARE	DETAILS
DAS Studio 3	User interface for setup and management of data acquisition, network switches, recorders and ground stations in an integrated environment

## Related products

MODULE	DETAILS
GS Works 9	Real-time and post-test data visualization and analysis software
AXN/LID/002	Spare lids for the Axon system (10 pack)
CON/PSU/008/FL/100	PSU interface cable (1 m long) terminated with banana plugs (4 mm diameter)
CON/PSU/008	3-way bayonet connector (female)
BAC/PSU/007	Backshell for CON/PSU/007 and CON/PSU/008

## Related documentation

DOCUMENT	DETAILS
DOC/MAN/030	DAS Studio 3 User Manual
DOC/DBK/011	AXN Databook
DOC/HBK/008	Environmental Qualification Handbook for Axon Products.

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