ASTRA V Server

Technical Reference Sheet

TRS-1036-01

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Aveco
www.aveco.com

Publication Date: December 2022

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INTRODUCTION

OVERVIEW

Aveco's automation servers are industrial computers with a Linux operating system that are used as a platform for Aveco's automation systems. Automation software consists of a large set of dedicated software modules that can be used to build the required solution, from an all-in-one automation server providing MCR and Studio automation together with media asset workflow orchestration, up to large networks of geographically distributed redundant automation servers providing distributed functionality.

The role of our automation has always been to integrate the third-party products of our customers' choice to deliver optimum solutions for their business models; we make a working playout facility out of a customer-selected of third-party components.

DESCRIPTION

With features including multi-site disaster recovery, multi-path architecture for flexible control and redundancy options, with hot-swappable modules for expansions, upgrades, and repairs, you can be certain of your on-air status.

Equipped with ASTRA MCR or ASTRA Studio, the ASTRA V server becomes the most powerful, reliable, and user-friendly broadcast automation system on the market.

PACKAGE CONTENTS

Delivery varies depending on the redundancy model and the license to control serial devices and GPI. For serial and GPI control, an ASTRA V Breakout Box is used. The system could scale up by adding more ASTRA servers into the so-called “orbital architecture”.

SINGLE SERVER

Qty	Content
1	ASTRA V Server (equipped with VRP7 card)
2	Power cable, 1m

SINGLE SERVER WITH BREAKOUT BOX

Qty	Content
1	ASTRA V Server
2	Power cable, 1m
1	ASTRA V Breakout Box
1	Patch cable (Data I/O)

MIRRORED SERVERS

Qty	Content
2	ASTRA V Server (equipped with VRP7 card)
4	Power cable, 1m

MIRRORED SERVERS WITH BREAKOUT BOX

Qty	Content
2	ASTRA V Server
4	Power cable, 1m
1	ASTRA V Breakout Box
2	Patch cable (Data I/O), 1m

CABLES TO CONTROLLED DEVICES

Cables to connect the ASTRA V Breakout Box with interfacing devices are not provided by Aveco.

When supplying cables to connected devices, refer to the below pinout of the GPI, and the RS422 connectors.

INSTALLATION

The ASTRA V Server comes pre-installed. For basic functionality, it is only necessary to connect it to the ethernet network. Please consult with the assigned contact person on how to proceed with this step.

TECHNICAL SPECIFICATIONS

ASTRA V SERVER SPECIFICATIONS

Figure 1. ASTRA V Server - Front Panel Schematic

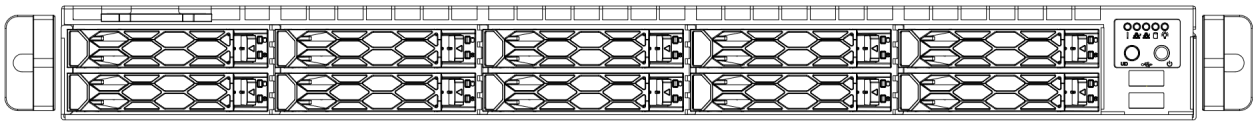
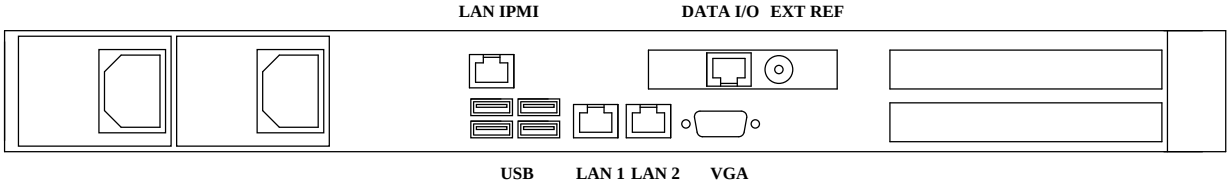


Figure 2. ASTRA V Server - Back Panel Schematic



Connectivity	
Ethernet	3x RJ45 (2x LAN, 1x IPMI)
Video Reference Input	Black burst or Tri-level (format: PAL, NTSC, 1080i), BNC terminated
Breakout Box	1x RJ45 data cable with PoE

Physical	
Dimensions	1U, depth 600mm
Weight	~12kg

Power	
Power Supply	Redundant, hot swap, two power cords
Voltage	Input voltage 110-240V, 50-60Hz
Power Consumption	280 W

ASTRA V BREAKOUT BOX SPECIFICATIONS

Figure 3. Breakout Box - Front Panel

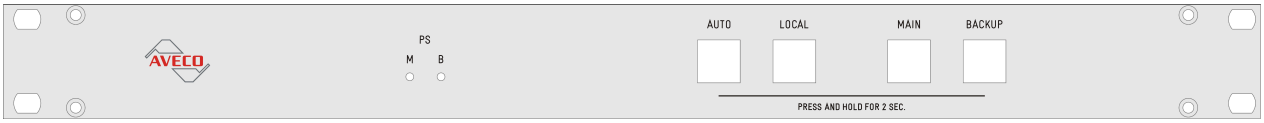
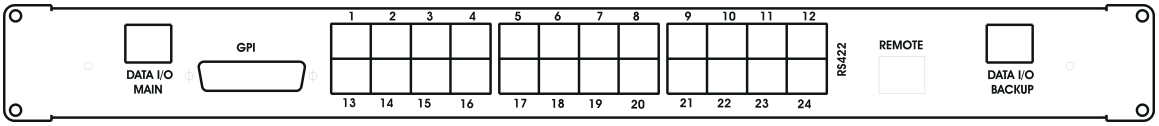


Figure 4. Breakout Box - Back Panel Schematics



Connectivity	
DATA I/O	2x RJ45 data cable connecting to ASTRA V server
RS 422	24x RJ45
GPI I/O	1x D-SUB 25 F
REMOTE	Interface for remote control panel (not part of the standard supply)

Physical	
Dimensions	1U, depth 200mm
Weight	~1,5kg

Power	
Power Supply	PoE from ASTRA V servers

ASTRA V BREAKOUT BOX CONNECTORS

RS422 ports	24 ports, max. baud rate 115200 bps
GPI OUT	8 ports, max. switching capacity 24V DC, 200 mA
GPI IN	8 ports

Figure 5. Serial Connectors

Serial Connectors 1-24 RJ45 8 pin female RS422	
1	Tx A(-)
2	Tx B(+)
3	Rx A(-)
4	NC
5	NC
6	Rx B(+)
7	GND
8	GND

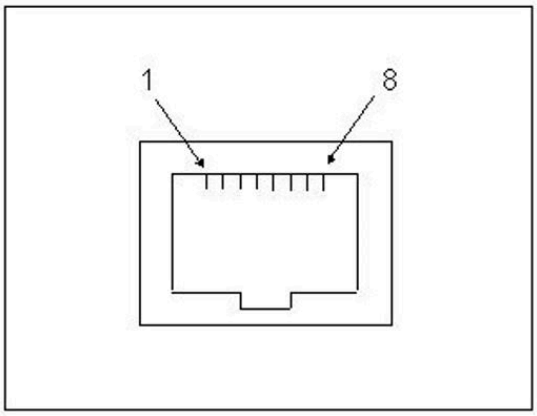


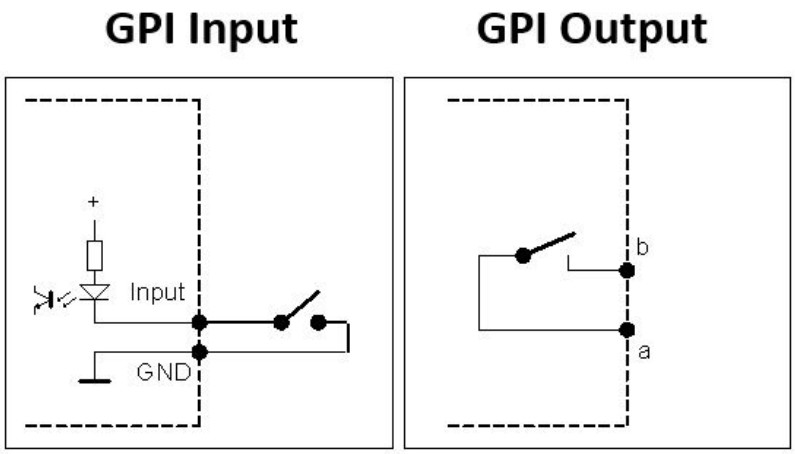
Figure 6. GPI Connectors

Connectors GPI
D-SUB 25 pin female

GPI OUT, GPI IN

1	GPI OUT 1 a	14	GPI OUT 5 a
2	GPI OUT 1 b	15	GPI OUT 5 b
3	GPI OUT 2 a	16	GPI OUT 6 a
4	GPI OUT 2 b	17	GPI OUT 6 b
5	GPI OUT 3 a	18	GPI OUT 7 a
6	GPI OUT 3 b	19	GPI OUT 7 b
7	GPI OUT 4 a	20	GPI OUT 8 a
8	GPI OUT 4 b	21	GPI OUT 8 b
9	GPI IN 1	22	GPI IN 6
10	GPI IN 2	23	GPI IN 7
11	GPI IN 3	24	GPI IN 8
12	GPI IN 4	25	GND
13	GPI IN 5		

Figure 7. Schematic of GPI input and output

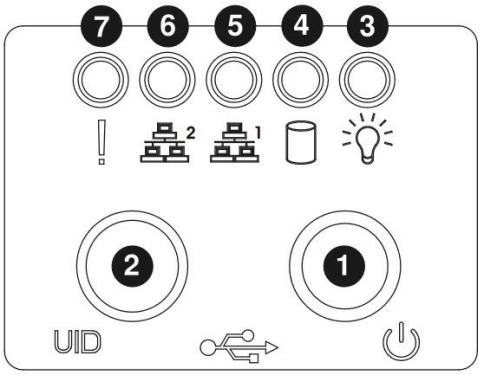


OPERATION

CHASSIS CONTROL PANEL

The chassis control panel is found in the upper right corner of the front panel. The control panel contains a power button, reset button, and several LED indicators.

Figure 8. Control Panel



POWER SWITCHES AND STATUS LED INDICATORS OF THE SERVER

Control Panel Features		
Item	**Features**	**Description**
1	Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power.
2	UID button	The unit identification (UID) button turns on or off the UID LED on the rear of the chassis. This is useful for locating the server in a large rack environment.
3	Power LED	Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.
4	HDD	Indicates activity on the hard drive when flashing.
5	NIC LED	Indicates network activity on LAN1 when flashing.
6	NIC LED	Indicates network activity on LAN2 when flashing.
7	Information LED	Alerts operator to several states, as noted in the table below.

Information LED	
Status	**Description**
Continuously On and Red	Overheating has occurred (This may be caused by cable congestion.)
Blinking Red (1Hz)	Fan failure, check for an inoperative fan
Blinking Red (0.25Hz)	Power failure, check for a non-operational power supply
Solid Blue	UID has been activated locally to locate the server in a rack environment

Information LED	
Blinking Blue (300ms)	UID has been activated using IPMI to locate the server in a rack environment

POWER ON THE SERVER

The server is switched on using the POWER button on the front panel of the server. The ASTRA system starts automatically. During the startup process, it is possible to interrupt the startup sequence.

POWER OFF THE SERVER

It is necessary to shut down the system gracefully. In order to proceed, use the attached VGA monitor and PC keyboard or use the IPMI interface. To switch off the server, follow the instructions on the monitor.

1. Stop the system - press “S” and confirm with “Y”
2. Power off - press “P”

Alternatively use “R” or “P” to confirm the first option and then no more action is needed.

BREAKOUT BOX OPERATIONS

Should you have a redundant ASTRA V server with the Breakout Box, it functions as a switch-over unit (SOU) between the main and backup ASTRA V server.

The SOU has two modes of operation:

• MAIN mode: all serial and GPI control lines are connected to the main automation server

• BACKUP mode: all serial and GPI control lines are connected to the backup automation server

The front panel of the SOU also has two modes of operation:

• AUTO mode: the SOU is controlled by the automation, the MAIN/BACKUP manual controls on the front panel are inactive

• LOCAL mode: the MAIN/BACKUP manual controls are active, the automation cannot control the SOU

CONTROL

The Breakout Box provides the following controls on its front panel:

• AUTO button: when held for 2 seconds, it switches to AUTO mode

• LOCAL button: when held for 2 seconds, it switches to LOCAL mode

• MAIN button: when held for 2 seconds in LOCAL mode, it turns on the MAIN

• BACKUP button: when held for 2 seconds in LOCAL mode, it turns on the BACKUP

STATUS INDICATORS

The Breakout Box provides the following indicators on its front panel:

• AUTO: button is illuminated blue if the SOU is in AUTO mode

- LOCAL: button is illuminated red if the SOU is in LOCAL mode
- MAIN: button is illuminated blue when the SOU is in MAIN mode
- BACKUP: button is illuminated red when SOU is in BACKUP mode.
- PS lights M and B: when ON, power is available on the respective lead

SPECIAL SITUATIONS

In MIRRORED SYSTEMS, if the Breakout Box is not connected or malfunctioning, then the ASTRA system starts in SLAVE mode (and thus does not control devices).

In SINGLE SYSTEM, the AUTO and LOCAL buttons on the Breakout Box front panel are deactivated in order to prevent misuse, and it is not possible to switch manually between MAIN and BACKUP modes.