

DENSITÉ 3+ ACE-3901

Agile Computing Engine for Densité 3+



High-density, cost-effective SDI/IP processing platform for HD to 4K UHD and HDR live production — with seamless AMPP integration.

The Densité® 3+ ACE-3901 from Grass Valley® is a high-density, cost-effective and agile processing platform designed for premium live production. It supports HD, 1080p, 4K UHD and HDR, delivering exceptional image quality and flexibility for modern broadcast workflows.

This platform is a bridge for the hybrid world, consisting of today's proven SDI technology and the new IP SMPTE ST 2110 connectivity. To meet customers' needs both now and in the future. The ACE-3901 Agile Compute Engine is driven by a high-performance FPGA architecture, enabling dynamic reconfiguration through software updates. This allows it to support a wide range of evolving application requirements with unmatched flexibility.

The ACE-3901 Agile Computing Engine provides a versatile array of rear interface options, supporting high-density I/O configurations of up to 64x 3G-SDI or 32x 12G-SDI channels. Equipped with dual 200 GbE QSFP cages, the platform delivers reliable, high-bandwidth support for SMPTE ST 2110 IP I/O and GRID-based applications, ensuring

seamless integration into next-generation broadcast workflows and AMPP integration.

The ACE-3901 is installed in the established Densité modular frame, packing class-leading audio/video processing power in a small form factor results in savings in terms of space, power and weight. With advanced processing capabilities and minimal power requirements, the ACE-3901 is supported by both Densité 3+ FR1 and FR4 frames. The high density allows 384 (192 SDI->IP and 192 IP->SDI) gateways per 4 RU Densité 3+ FR4 frame, saving substantial rack space in high channel count environments. Its modular scalability is ideal for addressing increasing content demands.

The ACE-3901 Agile Computing Engine offers up to 400 Gb IP bandwidth, meeting the demand for high-density IP gateways. It delivers the highest IP input/output density in the market, protecting customers' CAPEX investments in HD, UHD SDI, and IP infrastructure. The application-based licensing model adapts to new workflows

with different software applications, creating a truly virtualized hardware environment.

The ACE-3901 is centered around the GV Media Universe, offering seamless integration of modular devices as distributed edge processing units within a larger system. This hybrid approach combines modular hardware, commercial off-the-shelf (COTS) computing, and software within a larger AMPP system to create a highly flexible and agile solution tailored to your needs. It can be configured using the on-board HTML5 web interface and documented REST API, and controlled via NMOS IS-04/05. Additionally, it can be configured, controlled, and monitored natively within the AMPP platform or by GV Orbit® from Grass Valley.

The ACE-3901 agile computing engine provides full functionality of up/down/framesync-gearbox processing capability delivered through multiple applications that allow your live productions — either from trucks, venues or stadiums — to make the most of the new 4K UHD and HDR formats.

Key Features

- Very high density with 64 I/O per card/384 channels per 4 RU Densité 3+ FR4 frame
- Supports up to 32 3G/HD SDI inputs and 32 3G/HD SDI outputs or up to 16 12G SDI inputs and 16 12G SDI outputs
- Multiple SDI standards and formats supported, including UHD Single Stream SMPTE ST 2110 and 12G SDI I/O
- Flexible IP connectivity through two distinct QSFP ports for optical or electrical modules:
 - 100/200 GbE Optical QSFP
 - SMPTE ST 2110, JT-NM TR-1001-1 IP and GRID input/output
- Seamless integration with GV Media Universe and GV Orbit Control, Configuration and Monitoring software including logging and reporting
- HTML5 web-based configuration interface
- Open configuration management and monitoring with the REST API
- Individual ACE-3901 applications licensed, purchased as needed
- Rapid switching between ACE-3901 applications

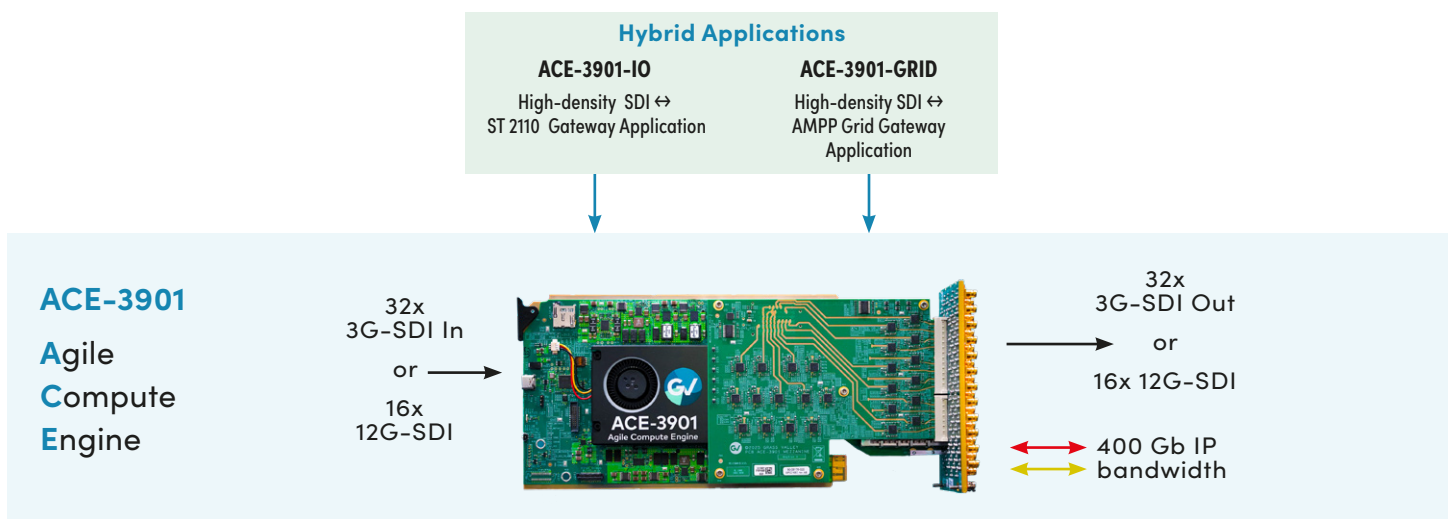


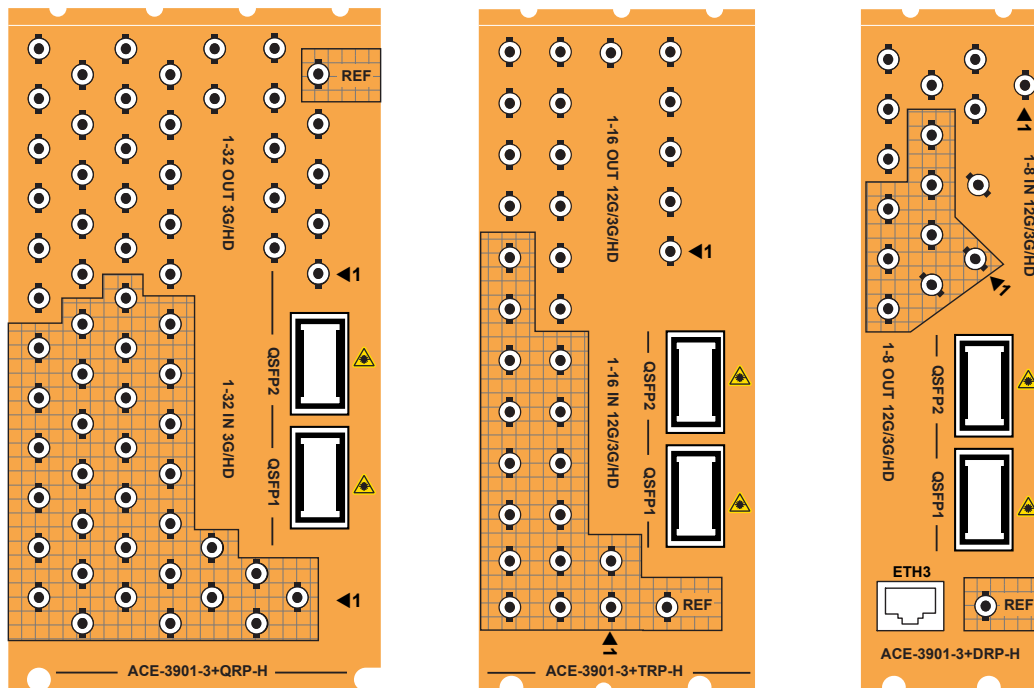
The **ACE-3901-IO** application is a high-density and high-performance gateway that can encapsulate or de-encapsulate up to 64 SDI signals to/from uncompressed SMPTE ST 2110. It supports UHD for both SDI and SMPTE ST 2110, enabling seamless SDI<->IP transitions. Single SMPTE ST 2110-30/31 audio flow per channel can be configured to support up to 16 channels of embedding/de-embedding to/from SDI. Dual 100/200 GbE QSFP sockets allow fiber or electrical connectivity to redundant networks as per SMPTE ST 2022-7.

The **ACE-3901-GRID** SDI Gateway application enables up to 64 Grid gateway channels to connect directly to AMPP Grid infrastructures, allowing a single 1 RU server to process up to 128 AMPP Grid signals — a more than tenfold increase in capacity.

With support for up to 384 AMPP Grid Gateway channels in a single Densité 4 RU frame, the ACE-3901-GRID application dramatically increases the I/O density of on-premises edge compute workflows — all while maintaining a minimal physical footprint. This makes it an ideal solution for AMPP customers seeking to optimize infrastructure efficiency.

ACE-3901 Application Portfolio





Specifications

SDI (Inputs/Outputs)

Physical: Up to 64 HD-BNC connectors configured as 32 inputs and 32 outputs

SDI Standards:

- SMPTE ST 292 (1.485, 1.485/1.001 Gb/s)
- SMPTE ST 424 (2.970, 2.970/1.001 Gb/s)
- SMPTE ST 2082-1:2015 (supported on 16x16 & 8x8 rear panels)

Supported input/output formats:

- HD: SMPTE ST 274: 1080i59.94, 1080i50
- HD: SMPTE ST 296: 720p59.94, 720p50
- 3G: SMPTE ST 425 level A (mapping 1)
- 12G: SMPTE ST 2082-10: 2160p59.94, 2160p50

Cable length (Belden 1694A):

- HD: 165m (540 ft.) at 1.485 Gb/s
- 3G: 120m (390 ft.) at 2.970 Gb/s

Cable length (Belden 4794):

- 12G: 60m (195 ft.) at 11.88 Gb/s

Ethernet Ports for Media

Physical: Two QSFP sockets for active optical cable, short- and long-reach fiber

Standard: IEEE 802.3

Performance: Up to 200 Gb of streaming per direction with 16x16 (TRP) rear panel

Ethernet Port for Control (ACE-3901-3+DRP-H Rear Only)

Physical: One electrical RJ45 port

Standard: IEEE 802.3 1000 Mb/s

Reference Input

Physical: HD-BNC/75Ω connector

Standard: SMPTE ST 170/SMPTE ST 318/ITU 624-4 blackburst

Electrical

Power: 60W maximum

Ordering

Densité 3+ Frame

ACE-3901

Agile Compute Engine for SDI/IP processing

ACE-3901-3+QRP-H

Quad rear panel for Densité 3+ with 32x32 HD-BNC (3G/HD) and 2x 100 Gb QSFPs

ACE-3901-3+TRP-H

Triple rear panel for Densité 3+ with 16x16 HD-BNC (12G/3G/HD) and 2x 200Gb QSFPs

ACE-3901-3+DRP-H

Double rear panel for Densité 3+ with 8x8 HD-BNC (12G/3G/HD) and 2x 100Gb QSFPs

Application Software (Must select at least one application)

ACE-3901-IO

High-density SDI/IP gateway application

ACE-3901-IO-OPT-FS

SDI inputs frame synchronization option for IO application

ACE-3901-GRID

High-density, cost-effective SDI interface for AMPP applications

ACE-3901-GRID-OPT-FS

SDI inputs frame synchronization option for GRID application

QSFP+ Options (one or two QSFP are needed to run)

GVTR-100G-SR4-G

QSFP28 100GBASE SR4 optical transceiver MMF

GVTR-100G-LR4-G

QSFP28 100GBASE LR4 optical transceiver SMF

GVTR-200G-SR4-G

QSFP56 200GBASE SR4 optical transceiver MMF

GVTR-200G-LR4-G

QSFP56 200GBASE LR4 optical transceiver SMF

Remote Control

GV Orbit, HTML5 web-based configuration interface

Ordering Code	Description	Application	
		ACE-3901-IO	ACE-3901-GRID
ACE-3901	Agile Compute Engine	✓	✓
ACE-3901-3+QRP-H	Quad rear panel for Densité 3+ with HD-BNC	✓	✓
ACE-3901-3+TRP-H	Triple rear panel for Densité 3+ with HD-BNC	✓	✓
ACE-3901-3+DRP-H	Double rear panel for Densité 3+ with HD-BNC	✓	✓
ACE-3901-IO-OPT-FS	SDI inputs frame synchronization option for IO application	✓	
ACE-3901-GRID-OPT-FS	SDI inputs frame synchronization option for GRID application		✓

This product may be protected by one or more patents. For further information, please visit: www.grassvalley.com/patents

DS-PUB-3-1088D-EN

Grass Valley®, GV®, GV Grass Valley®, and the Grass Valley logo are trademarks or registered trademarks of Grass Valley USA, LLC, or its affiliated companies in the United States and other jurisdictions. Grass Valley products listed above are trademarks or registered trademarks of Grass Valley USA, LLC or its affiliated companies, and other parties may also have trademark rights in other terms used herein. Copyright © 2025-2026 Grass Valley Canada. All rights reserved. Specifications subject to change without notice.

www.grassvalley.com Join the Conversation at GrassValleyLive on [Facebook](#), [X](#), [YouTube](#) and Grass Valley on [LinkedIn](#)