Grass Valley

DENSITÉ 3+ FR4 FRAME
High-density Modular Frame for Advanced Signal Processing

24 slots in a frame, double the power per slot.

The 4 RU Densité® 3+ FR4 Frame from Grass Valley® is a modular frame and controller designed to deliver more power per slot and higher speed connectivity needed by the increased feature set of the latest Densité products. The Densité 3+ FR4 frame offers true multiformat operation, with the ability to process simultaneously SDI and IP 12G, 3G, HD, SD, and analog video, as well as AES and analog audio. The frame provides advanced monitoring and back-up capabilities along with a color LCD panel with integrated touchscreen for ease of status and control navigation on the front panel.

The front-opening frame features dual hot-swappable power supplies (PSUs) and fans. The processing

modules or cards for the frame are also hot-swappable, and can be configured automatically when a card is replaced. The frame is front-to-back air-cooled and all modules, redundant PSUs and fans are monitored to provide status via GPI or the Ethernet port. All frame configurations include two PSUs and a controller card with internal GbE switch connectivity, which allows card parameters adjustments from the front panel.

The Densité 3+ FR4 ADV includes an advanced controller that delivers additional functionality with a second reference and timecode inputs, and support of SMPTE ST 2059 genlock over IP reference option. Legacy Densité 3+ FR4 STD frame Ethernet

Controllers and rear panels can be field upgraded with the D3+FR4-ADV-UPG kit to deliver the same advanced controller features.

Fitting 3 RU and 2 RU cards in the Densité 3+ Frame
The Densité 3+ FR4 frame can host any of the latest high-powered Densité modules, such as the XIP-3901, and the IPG-3901 and KMX-3901 but is also fully backwards compatible with all existing 3 RU and 2 RU Densité modules. With over 100 modules to choose from, this gives you mix and match flexibility and preserves your investment.

Key Features

Key product capabilities:

- Fully backwards compatible with Densité 2 and Densité 3 cards

- 24 slots with a power budget of 25 watts per slots

- Optional frame reference on controller card providing:
  - Digitally generated reference for intra-frame distribution
  - Timecode extraction and embedding
  - Supports SMPTE ST 318 for perfect audio/video phasing
  - Easy control and monitoring
  - URS simplifies interformat processing

- Dual GbE port for system wide redundancy with internal GbE switch connectivity to each cards

- Full touchscreen color LCD panel for module status and control

- Modular frame controller with associated modular rear panel

- Advanced frame controller configuration provides:
  - Second reference and timecode inputs (with optional frame reference)
  - Support of SMPTE ST 2059 genlock over IP reference option

Standard Densité capabilities:

- Multiple video and audio formats can be fitted in a single frame

- Densité 3 RU and Densité 2 RU modules can co-exist in the same frame

- Easy configuration by front panel or remotely via the Ethernet frame controller

- Choice of control and monitoring options, including GV Orbit® remote control and PC-based iControl™ Solo GUI

- Two hot-swappable power supplies

- Supports full range of Densité Series modules

- Frame can be stacked without additional cooling spaces

- Optional redundant Ethernet connection

Specifications

Mechanical
Dimensions: 4 RU x 485 mm (19 in.) x 302 mm (11.88 in.) with connectors
Weight: 8.4 kg (18.5 lbs.), 2 PSUs and 1 controller

Power
Input range: AC 50-60 Hz, 100-240V
Rating: 700W

Control and Monitoring
Communication ports: Dual Gigabit Ethernet
(Also provides PTP (IEEE 1588) support on advanced controller for SMPTE ST 2059 reference)
Alarm: GPI contact

Cooling
Variable speed fans:
- 2 sets of 3 fans on the rear of the frame
- 2 on each PSU

Operating temp. range: 0°- 40° C (32°- 104° F)

Reference Input
Load: Passive loop-through
Impedance: 75Ω bridging
Return loss: >30 dB up to 30 MHz
Signal type: Composite NTSC-M, PAL-B blackburst with optional VITC
Standard: SMPTE ST 170, ITU-R BT.1700-1, SMPTE ST 318

Signal level: 1 Vp-p
Signal type: HD tri-level sync
Standard: SMPTE ST 274, SMPTE ST 296
Signal level: 600 mVp-p

LTC-IN
Signal type: LTC
Standard: SMPTE ST 12
Signal level: 0.5 Vp-p to 4.5 Vp-p

Media Ports
In Advanced Controller only (future use)

Ordering

DENSITE 3+ FR4 ADV
4 RU modular frame, 24 slots, 2 power supplies, advanced controller card with redundant Ethernet ports and direct access touchscreen, DENSITE 3+ CPU-ETH3-RP-ADV rear and blank rear panels

Options
DENSITE 3+ CPU-ETH3-OPT-LINK
Full link redundancy using Channel Bounding (software option)

DENSITE 3+ CPU-ETH3-REF
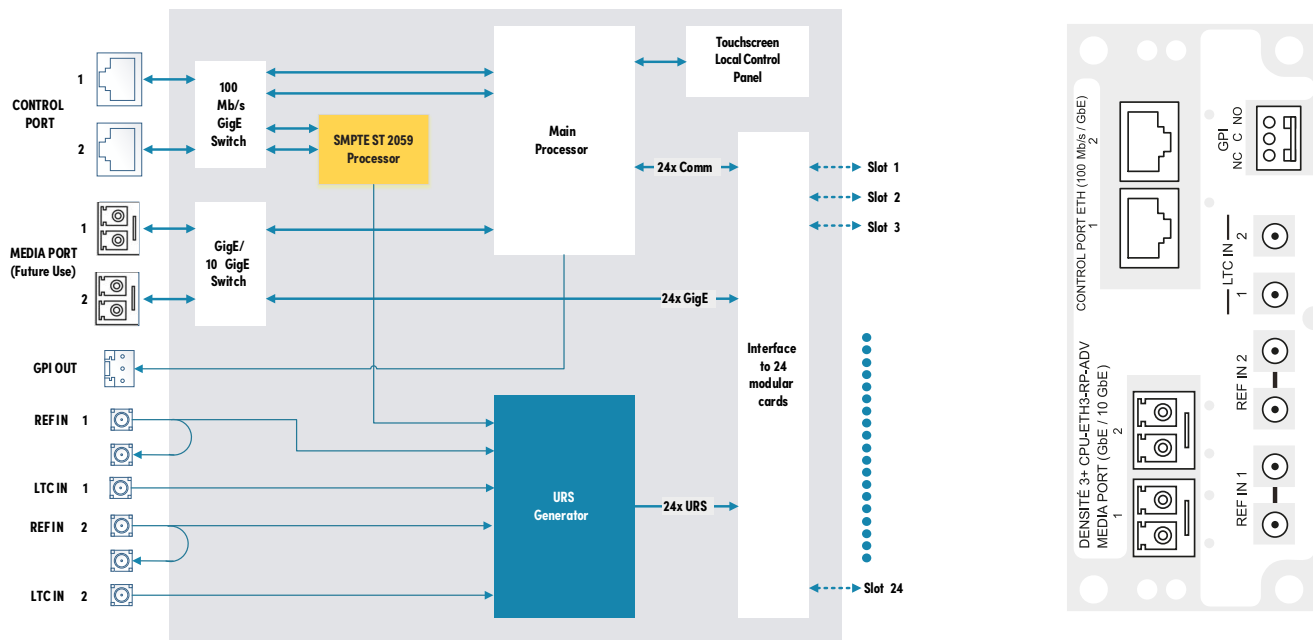Frame reference software option

D3+FR4-ADV-PTP
IEEE 1588 and SMPTE ST 2059 option on Densité 3+ FR4 Advanced Controller

D3+FR4-ADV-UPG
Densité 3+ FR4 Advanced Controller with rear panel field upgrade for legacy Densité 3+ FR4 STD frames
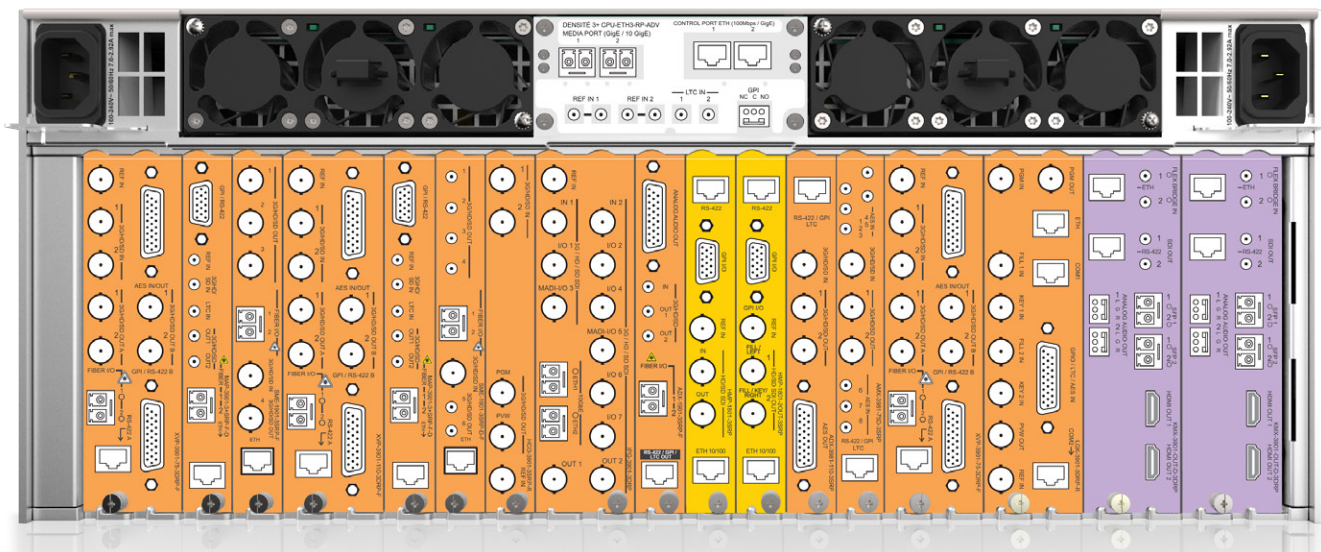*Note:* Rear panels must be specified and ordered with appropriate cards.

DENSITÉ 3+ FR4 STD   Controller Functional Block Diagram

OPTIONAL LICENSES:

■ DENSITÉ 3+ CPU-ETH3-REF   ■ D3+FR4-ADV-PTP option

Back of the Densité 3+ FR4 chassis shown with Advanced Controller rear.

DS-PUB-3-0337C-EN

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