The Pyxis family of routers provides a highly flexible solution for all your small- and medium-sized routing applications, with all the features you would expect from a Grass Valley router — excellent build quality, high reliability, and excellent value for money.

Pyxis from Grass Valley features a wide range of signal cards in a choice of a 1 RU or 3 RU frame. All cards are removable from the front allowing ease of maintenance and removing the need for the router to be de-cabled should servicing be required. Both frames can be configured with dual redundant power supplies, and signal cards are available for all common broadcast formats: 1080p 3 Gb/s, HD-SDI, SDI/ASI, analog audio, AES audio and RS-422. The SDI cards are also suitable for routing a wide range of telco signals (STM-1, STM-4, T4, E4).

**Video**

Specifically designed for full 3 Gb/s compliance, the Pyxis 3G/HD/SD range offers exceptional quality signal routing. Each router size is available as 3G/HD/SD capable, or alternatively in a more cost-effective SD/ASI variant. Non-reclocking and reclocking options are available in 3G/HD/SD capable cards. All video router cards are dedicated sizes, providing optimum signal integrity and a highly cost-effective solution.

**Audio**

The audio router cards offer field expandability and mix & match between analog, AES and MADI I/O. Analog conversion uses program quality converters on inputs and outputs.

Synchronous AES signals can be cleanly switched with no disturbance to the AES data stream between AES and analog cards. Expansion between cards is via dedicated interconnections within the frame, allowing additional cards to be added in the field.

Input sample rate converters allow for operation in a mixed sample rate environment, or with nonsynchronous external signals.

All signal types can be mixed in any combination in the same frame, allowing smaller multilevel systems to be configured in just 3 RU.

**MADI**

The AES and analog audio cards are fitted with MADI inputs and outputs. These can be used in two ways: as additional inputs and outputs to the router, the MADI I/O can be used in conjunction with the discrete AES and analog I/O to build a router with up to 272 stereo inputs and outputs.

This configuration is ideal for applications incorporating audio mixing consoles with MADI interfaces. With a simple configuration change, each card can be used as a 56/64 channel MADI encoder and 56/64 channel decoder on a single card.

The encoder has dual outputs, and the decoder has dual redundant inputs with changeover. This offers a very compact and cost effective interface to MADI routing and mixing systems.

**Control**

Pyxis offers a range of control options. The editable database on the internal controller (which can be dual redundant in the 3 RU frame), allows multilevel routing systems to be built from several Pyxis cards which can be fitted into one or more frames. The controller interfaces to Grass Valley’s control panels, which include simple BPX control up to XY panels with multilevel control and dial-up sequences. Control from existing Grass Valley systems is also simple, as Pyxis supports the industry standard Grass Valley general switcher protocol, allowing you to link to external Grass Valley controllers and many third-party control systems. Ethernet and serial control, supporting several OEM protocols round off a wide range control options.

Interoperation with Grass Valley’s Workbench and RollCall suite of software applications makes control from PC-based soft panels simple. The internal control architecture allows for much more comprehensive status and alarm reporting than has previously been possible.
KEY FEATURES

- Flexible multiformat, multilevel router range
- High packing density with 17^2 HD-SDI in 1 RU up to 72^2 HD-SDI in 3 RU
- Up to 144^2 stereo AES and analog audio in 3 RU or 36^2 in 1 RU
- 3 Gb/s capability on all HD-SDI routers
- Mix and match all common broadcast signal types: 3 Gb/s, HD-SDI, SD/ASI in 72^2, 34^2, 17^2 sizes. AES, stereo analog audio in 144^2, 108^2, 72^2, 36^2 sizes. Mixed analog, AES and MADI I/O up to 272^2.
- Dual redundant PSUs
- All active parts removable from the front for ease of maintenance
- Integral control system with dual redundant control option in 3 RU frame
- Integrated audio converters allowing mix and match of AES and analog audio in the same frame
- 34^2 HD-SDI and four levels of 36^2 audio in a single 3 RU frame
- Audio modify functions (L > R swaps, L < > both, mono mix, etc.)
- Clean switching of discrete AES/EBU digital audio
- Interface with Grass Valley’s control panels and soft panels
- AES sample rate converter/synchronizer on all inputs (bypass for Dolby E)
- RS-422: 128, 64 and 32 port
- Timecode: 128, 64 and 32 port balanced
- Control using Nebula or Nucleus router control system
SPECIFICATIONS

1 RU Frame
Size: 1 RU 19 in. rack mounting x 395 mm deep
Module slots: 1
Power supplies: External block type PSUs
Power: 60W maximum

Control:
Single internal control card, 2x RS-485, panel/remote control ports, Ethernet for Grass Valley general switcher, SNMP or other OEM protocols
Configuration: 1x RS-232 (switchable)

Connections:
Power: 3-way IEC
Control: 9-way D-type socket + RJ45
Expansion: RJ45
Video reference: BNC

3 RU Frame
Size: 3 RU 19 in. rack mounting x 395 mm deep
Module slots: 4
Power supplies: Dual, autosensing 110/230 VAC 50/60 Hz
Power: 250W maximum

Control:
2x RS-485, panel/remote control ports, Ethernet for Grass Valley general switcher, SNMP or other OEM protocols
Configuration: 1x RS-232 (option)
Control: RJ45
Connections:
Power: Dual IEC
Control: 9-way D-type socket + RJ45

SD Video
Inputs
Standard: SMPTE ST 259
Impedance: 75Ω
Data rate: 3-360 Mb/s
Return loss: >20 dB 10 MHz to 360 MHz typical
Amplitude: 800 mVp-p ±10%
DC offset: 0V ±0.5V

Cable equalization:
Up to 200m cable (Belden 8281)

Outputs
Standard: SMPTE ST 259-ABCD
Impedance: 75Ω
Data rate: 3-360 Mb/s
Return loss: >20 dB 10 MHz to 360 MHz typical
Amplitude: 800 mVp-p ±10%
DC offset: 0V ±0.5V

ACS Digital Audio Inputs
Type: AES3-1992
Impedance: 110Ω/75Ω
Connector: 62-way high-density D-type/BNC

AES Digital Audio Outputs
Type: AES3-1992
Impedance: 110Ω/optional 75Ω
Connector: 62-way high-density D-type/BNC

Performance
Digital Input – Digital Output
Sample Rate:
24 to 96 kHz (non reclocking, non reframing)
32 to 48 kHz (reclocking and reframing)
Wordlength: 16- to 24-bit
Non reclocking: Transparent to all bi-phase
Perf: Mark data
Reframe: SRC’s all inputs, outputs AES-11
Performance: Compliant (Channel status data rewritten in this mode)

Analog Inputs
Type: Electronically balanced
Impedance: 10 kΩ
Max. signal level: +24 dBu
Connector: 62-way high-density D-type

Analog Outputs
Type: Electronically balanced
Output impedance: <40Ω
Max. output level: -24 dBu into 10k
Connector: 62-way high-density D-type

Analog Input — Analog Output
Gain stability: ±0.2 dB/24 hours
Frequency: ±0.1 dB 40 Hz to 15 kHz
Response: ±0.5 dB 20 Hz to 20 kHz
THD + N:
<0.1% at 1 kHz, +18 dBu
<0.03% at 1 kHz, 0 dBu
Dynamic range: >105 dB (AES 17-1991)
Signal to noise ratio: >105 dB
 crossover: <90 dB all hostile at 16 kHz

Mixed Analog/Digital
Digital Input — Analog Output
Input wordlength: 16- to 24-bit
Converter: 20-bit, Delta Sigma
Gain Stability: ±0.2 dB/24 hours
Frequency response: ±0.03 dB 20 Hz to 22 kHz
THD:
<0.1% at 1 kHz, +18 dBu
<0.03% at 1 kHz, 0 dBu
Dynamic range: >105 dB (AES 17-1991)
Signal to noise ratio: >105 dB @ +24 dBu = 0 dBF
Crossstalk: <90 dB all hostile at 16 kHz

Analog Input — Digital Output
Sample rate: 32-48 kHz (free running or locked to reference)
Output wordlength: 20-bit
Converter: 20-bit, Delta Sigma
Performance: Outputs AES-11 timing compliant
THD: 0.05% @ +18 dBu
Signal to noise ratio: >106 dB @ 24 dBu = 0 dBF

ORDERING

Please contact your authorized Grass Valley representative.

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

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