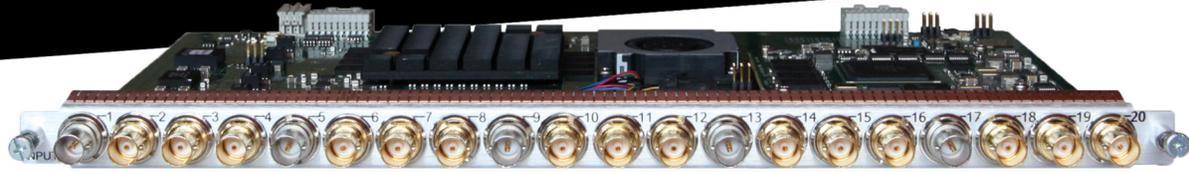


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12G MULTIPROCESSING INPUT MODULE



Acuity 12G SDI MultiProcessing Input Module

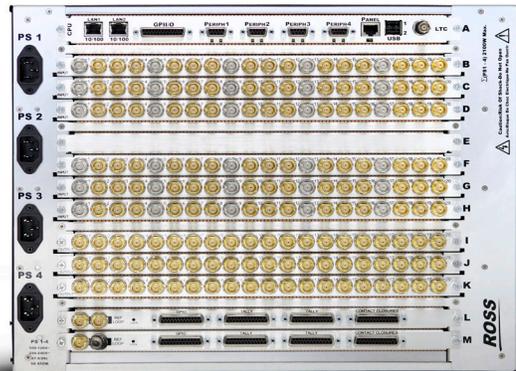
The 12G MultiProcessing Input Module is a 5x12G or 20x3G SDI module with video processing and multiviewer capability for each of its inputs. In addition to 12G Single Link capability, this new module's functionality is dramatically improved over the standard input board and boasts:

- 5(12G) or 20 RGB colour correction with SDR to HDR Conversion (1 per input)
- 5(12G) or 20 YUV proc amp (1 per input)
- 2(12G) or 8 1080p level B to level A conversion (Input Assignable)
- 2(12G) or 8 Frame Synchronizers with Format Conversion (FSFC - Input Assignable)
- 1 MultiViewer – able to display all 20 inputs as a single source or be routed to another internal multiviewer window. Users can instead elect to use the multiviewer as 2 UHD Quad Square Division to 2SI Converters.

The Acuity series 4RU engine can accept up to 3 of these modules and replace all standard input cards, for a total of 60 inputs in 3G or 15 Inputs in 12G / UHD Quad Links in 2SI.



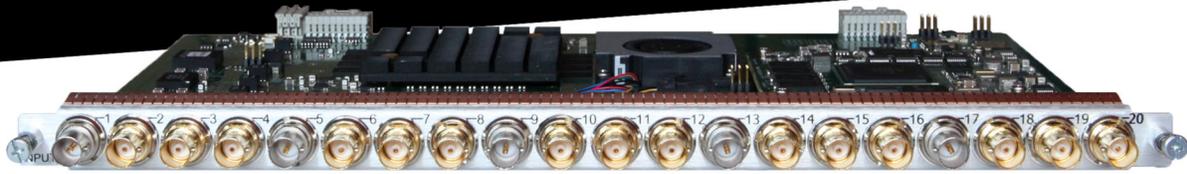
The larger 8RU frame is able to accept 6 input modules for a total of 120 inputs in 3G or 30 Inputs in 12G / UHD Quad Links in 2SI.



Most significantly, Acuity switchers are field upgradable thanks to the modular I/O design. Both the standard input board and the new MultiProcessing Input Module can coexist in the same frame allowing for easy expansion or upgrades at any time.

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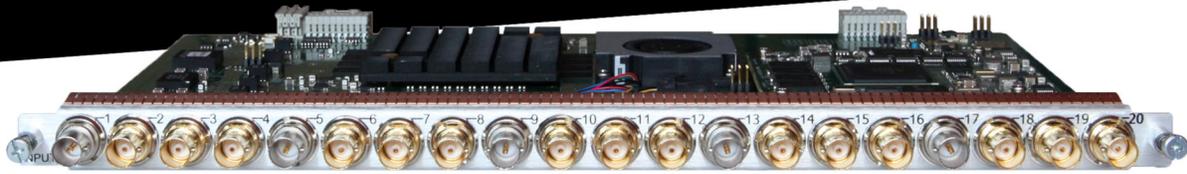


Acuity 12G SDI MultiProcessing Input Module - Features & Benefits:

- **Input ProcAMP and Colour Correction can now be enabled on the input card:** MultiProcessing cards will not require ME correctors to perform processing, while inputs needing correction on standard boards can still leverage the flexibility of the ME architecture. HDR conversion is also supported in the Colour Correction. This allows mapping of SDR Sources into the same profile as HDR sources and mapping is maintained through the processing path for HDR productions..
- **3G Level B support is provided via the floating Level B to Level A converters:** 3G SDI rates were introduced in two variants. Level B was the original delivery method implemented by 1080p50/59.94 devices, while current 3G SDI products use Level A. Level B implementation ensures that all 1080p 3G signals are compatible with the Acuity series. These 8 Floating resources are independent from the Frame Sync and Format Converters.
- **Floating Frame Synchronizers with Format Conversion (FSFC):** Removes the need for all sources to be genlocked to system timing and/or be of the same format. This allows non-broadcast devices, external feeds and low-cost robotic cameras to be timed and converted to the system format without the need for external hardware. FSFCs can also run in a Delay mode capable of adding up to 15 frames (per FSFC) of delay to the source, which is extremely helpful in Augmented and VS environments that require camera timing delays. Note that when using the FSFC on UHD inputs this consumes 4 per UHD — a Maximum of 2 UHD sources can be Frame Synced per 12G Input MultiProcessing Module.
- **UHD Format Conversion is performed in the ME Buses:** In mixed signal environments, the 12G MultiProcessing Input module can use it's FSFCs to convert SD/720p/1080i signals to 1080p3G. These signals can be passed through the system architecture and only need to be converted at the point in the ME when they are used, thus expanding the UHD System I/O. For example, if an 8RU system only has 20 UHD sources, the remaining I/O can be maximized with up to 40 more 1080p3G sources. Additionally, the system would also have 48 FSFCs available.
- **Quad Link UHD in 2SI video mode maximizing resources:** For legacy equipment that only operates in QSD (Quad Square Division) the FSFCs can be put into a QSD to 2SI mode. This mode will allow 2 UHD Inputs per Module to be QSD format. *Note: the Input MultiViewer will not be available in this mode.*

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Acuity MultiViewer Advantage

The 20 Input MultiViewer included on the MultiProcessing Input Module substantially reduces the need for additional monitoring outside of the Acuity Chassis for the Production Control room.

All Input slots have 21 connections to the main crosspoint router. Twenty are used for 3G SDI connections while the 21st allows the Multiprocessing input module to send a composited signal of all twenty sources to the router. These input-based MultiViewers can then be fed to any system output or included in other Video Processor-based MultiViewers. Thus, the need for external DAs and multiviewers has been virtually eliminated by moving external source-based MultiViewer functions into the production switcher itself.

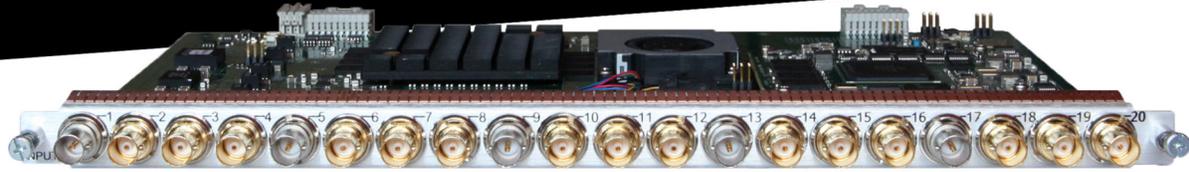
Previously, large systems fed external source-based multiviewers with outputs from the main system router. This necessitated a larger crosspoint matrix and additional router outputs to accommodate those feeds. Acuity Multiprocessing Input modules can now provide monitoring for all external inputs thus freeing the Video Processor-based MultiViewers for display of internal buses and sources such as ME banks or MediaStore Channels. Additionally, the Video Processor-based MultiViewers are able to monitor Aux Bus feeds and ME outputs that would traditionally be assigned to physical outputs.

Since the additional hardware now completely resides inside the Acuity Chassis, system designs are greatly simplified. Flight pack and OB Truck designs can leverage the weight and rack reductions to provide more cost-effective solutions. And since monitoring configurations are now stored inside Acuity, a single show file can load monitor wall configurations, labels, tally assignments and layouts simultaneously.

The intuitive Acuity user interface enables effortless change of layouts and assignments in real time while the Acuity SoftPanel allows the engineering team to access the same functionality remotely.

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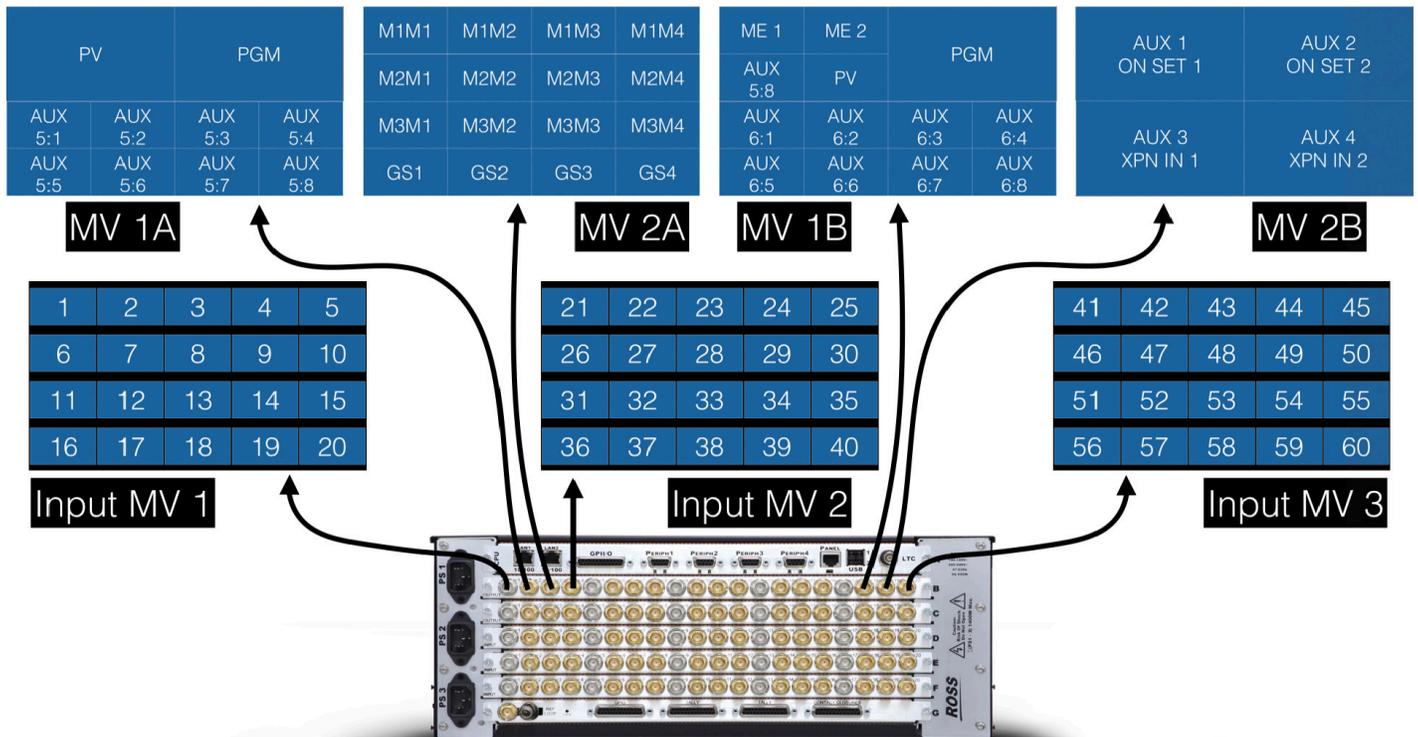
12G MULTIPROCESSING INPUT MODULE



3 ME(3G) or 2ME(UHD) 4RU System Example

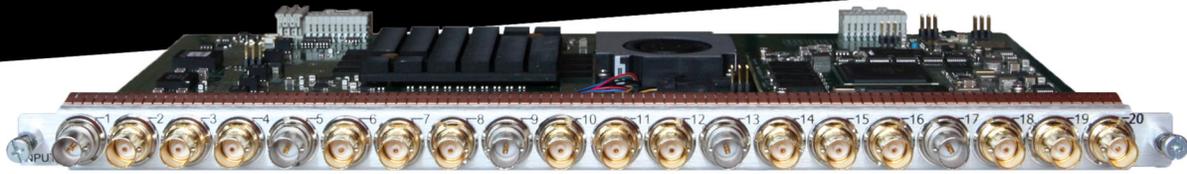
Illustrated below, an Acuity 4RU Engine is shown with a range of 1 to 4.5 MEs. All Input and Output Slots are loaded up with 60 Inputs and 40 Outputs, but other configurations are possible. All input slots have been loaded with the Multi Processing Input boards with the 20 x 1 MultiViewer. Two Video Processors providing 20 x 2 Output MultiViewers compliment the system monitoring.

Using only 7 of the available outputs, Acuity can monitor all 60 external and 40 internal sources and busses using two Video Processor-based internal MultiViewers (2 heads each) and three input MultiViewers. With this configuration, Acuity still has 33 available outputs; this spare capacity can frequently eliminate the need for a small system router.



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An external MultiViewer system requires:

- 60 Distribution Amplifiers (or Router Outputs for the external sources)
- 16 Aux Outputs (for user assignable windows)
- 17 Direct Outputs from the Acuity for PV/MediaStore Monitoring
- 7 Acuity Outputs with DA for PGM/ME1/ME2/Aux1-4 to the monitoring and Router/down stream devices.

That makes for a total of:

- 67 DAs
- 16 Router Outputs
- All 40 Acuity Outputs
- Plus the addition of a Monitoring solution for 3 20x1, 16x1, 13x1, 10x1 and a Quad Split.

Depending on the manufacturer of the external MultiViewer, the system may require the addition of a 1-3 RU TSL or Image Video system to monitor the Switcher Aux buses dynamically tracking when assignments change and re configuring the Labels and Tally of each window. The 67 Distribution Amplifiers consume a minimum of 6RU. The Monitoring solution could require upwards of 4-6 RU for the 7 Heads with 100 sources in total. The total rack space required by the external equipment is 11 – 16RU.

Acuity shrinks this system requirement from 15-20 RU to a modest 4 RU – and results in a system design that expedites trouble shooting, providing both ease of use and cost savings. With one central location containing all of the monitoring and processing capabilities it is clear that an internal solution within the Acuity series adds enormous benefit and value.



The Acuity 12G MultiProcessing Input Board enhances Acuity's excellent UHD Switcher capability. [Learn more about Acuity UHD Operation here](#)