Reliable, Economical, Large, Multi-format
Leitch now offers an economical, large multi-format router packed with features and redundancy that remain unmatched in the industry. The Integrator prepares your facility to switch today’s and tomorrow’s formats. As the name suggests, this multi-format router integrates all digital and analog formats, including ASI and HDTV at 1.5Gb/s, with advanced control software.

Leitch integrates multiple signal formats into the same frame with line-accurate switching. Available signal formats include serial digital video, ASI with automatic equalization and reclocking, wideband from 10 M b/s to HDTV at 1.5Gb/s, mono or stereo audio, asynchronous or synchronous balanced or coaxial AES digital audio, DS3, and E3 in all configurations.

The Integrator provides expandability from 32x32 to 512x512 and is available in 4, 6, and 8 RU frames. The frames are made of heavy gauge steel and are ideal for rugged truck and mobile environments.

To protect your operations Leitch built the Integrator with optional redundant hot-swappable logic cards and power supplies and incorporated alarms for control, fans and power supplies.
**Comprehensive Control**

Leitch offers you programmable control panels and our RouterMapper™, RouterWorks™ and EventWorks™ control software to complete today’s most powerful control system.

- Frees you from hardware constraints with virtual crosspoint mapping for improved input/output use
- Permits soft-matrix partitioning of hardware matrices
- Built in Blue3 Dynamic Routing Fabric enabled application providing easy configuration and operation of the routing fabric between multiple frames
- Enhances control with 3rd party uploadable drivers and software reconfigurable control panels
- Permits on-air control from automation systems or PC-based control using Leitch’s application software
- Local or remote control using standard TCP/IP, LAN/WAN, or Internet dial-up

- New Blue3 Dynamic Routing Fabric application
  - allows the user to view the actual path for each and every signal within the system
  - provides an application for automatically re-routing critical signals should a failure occur

- Polls your system for new or added components and automatically configures them without ever interrupting your system operations

- RouterMapper is a powerful system configuration tool and comes free with every Integrator purchase

- Command Control System™ enabled
  - control and monitor with Pilot™ – Leitch’s new Windows™-based control system for all equipment on your network
  - centrally control and monitor your equipment, including all Leitch routing products, over your company’s wide area network

**Mixed signal format configurations**

- Output monitoring to eliminate need for monitoring DAs and routers
- Future support for ethernet and S.N.M.P.
- Dual outputs (optional)
- Simple 75 ohm coaxial interconnect between frames and hardware control panels
- GPI alarms via GPI software

**NTSC  SECAM  ASI  AES  E3  DS3**
### Sample Router Configurations

**HD Serial Digital Video**

- Expandable 16x16 to 32x32
- Capable of routing signals from 10 Mb/s to 1.485 Gb/s (i.e., SMPTE 310, SMPTE 259M and SMPTE 292M)
- Automatic re-clocking for certain formats (automatic bypass of re-clocking for others)
- Automatic cable equalization for all frequencies

The 16x16 offers an economical one card solution for smaller applications with expandability to 32x32. The expandable 16x16 to 32x32 offers backward compatibility and support for standard SMPTE 259M as well as SMPTE 292M (1.485 Gb/s) with no exchange of modules. This approach provides a solid foundation for making a seamless transition to HDTV.

**Serial Digital Video & ASI**

- Field expandable from 32x32 to 512x512
- Equalized inputs and re-clocked outputs

The serial digital video router provides line-accurate switching for 143, 177, 270 and 360 Mb/s signals. For your MPEG needs, you can seamlessly switch ASI signals using the same configuration and re-clocking sub-modules. You can also plug an optional output monitoring sub-module onto the output module to gain a monitoring output.

**Analog Video, DS-3 & E3**

- Field expandable from 32x32 to 512x512
- 70 MHz bandwidth

The analog video router provides line-accurate switching for standard composite NTSC, PAL and SECAM signals. In addition, you can use this router to switch both SDTV and HDTV component analog signals. This router's bandwidth (70 MHz) also lets you use it to switch many telco-related signal formats, including DS3 (45 MHz) and E3 (34 MHz) signals. You can also plug an optional output monitoring sub-module onto the output module to gain a monitoring output.

**Analog Audio (Mono & Stereo options)**

- Field expandable from 32x32 to 512x512
- 200 kHz bandwidth
- 600 ohm version available

The analog audio router provides line-accurate switching for standard analog audio signals. You can also use this router to switch timecode signals.

You can plug an optional output monitoring sub-module onto the output module to gain a monitoring output.

**AES Digital Audio**

- Field expandable from 32x32 to 512x512
- Asynchronous or synchronous models available for both balanced (110 ohm) and coaxial (75 ohm) systems
- Optional on-board A-to-D and D-to-A conversion for your mixed system needs

The AES digital audio router provides asynchronous or synchronous switching for balanced (110 ohm) or coaxial (75 ohm) AES digital audio signals. Plug an optional output monitoring sub-module with built-in D/A functionality onto the output module to gain both analog and digital outputs.

**Data (RS-422/RS-232, etc.)**

- Field expandable from 32 to 128 ports
- RS-422 or RS-232 capable
- Dynamic port configuration for controlling vs. controlled devices

The data router provides economical routing of machine control or RS-232 signals in sizes ranging from 32 to 128 ports. Dynamic port configuration allows control to be swapped from a controlling device to a controlled device without having to change your wiring.
## Sample Router Configurations

### Routing Formats

<table>
<thead>
<tr>
<th>Single</th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Two</td>
</tr>
<tr>
<td>32 Out</td>
<td>32 Out</td>
</tr>
<tr>
<td>32 In</td>
<td>32 In</td>
</tr>
<tr>
<td>32 In</td>
<td>32 In</td>
</tr>
<tr>
<td>32 Out</td>
<td>32 Out</td>
</tr>
</tbody>
</table>

#### Formats: 4RU Frame
- **Analog Video**
- **Analog Audio**
- **Serial Digital Video**
- **HD Serial Digital Video**
- **AES Digital Audio**
- **Data Router**

### Other Router Configurations

The Integrator was designed for flexibility, and the matrix configurations shown here are just a few of the combinations possible. The Integrator accommodates multiple formats in the same frame, supports dual outputs for the analog and serial digital video formats, and offers output monitoring.

### Decisions to make before choosing a router:
1. What signal format(s) do I require?
2. What is the matrix size that I need now?
3. Do I need to expand this matrix in the future?
4. Do I need mixed signal formats?
5. Do I need dual outputs for my serial digital or analog video signals to eliminate DAs?
6. What frame size do I need (results from questions 3 and 5)?
7. How am I going to control this router today and in the future?

Call Leitch today for all of your routing needs.
Dynamic Routing Fabric

Blue Dynamic Routing Fabric is Leitch's field-proven method for routing and controlling signals between multiple, networked frames easily, reliably and efficiently. It has always been an easy proposition to switch a signal from input to output within a router frame (large or small); however, reliance on single-frame routing in a large system environment can compromise reliability. Leitch's large Integrator systems focus on absolute reliability and Leitch's answer to large system routing is a dynamic network of independent frames.

Standard with every large Integrator system, Leitch's Blue Dynamic Routing Fabric is not just limited to efficient network management within a large, multi-frame system. Rather it is a routing topology that provides the end-user with:

**Rock-Solid Reliability** - Should one frame, card, or internal circuit fail, the distributed nature of the system provides the ability for sources to get to their destinations. It is a self-healing router network with the mechanism to route around failed components and/or frames dynamically built-in to the system.

You no longer have to worry about spending your nights and weekends in the office trying to determine what went wrong with the router. There is redundancy in the multiple signal paths between frames and within each Integrator frame. All key components are front-loading and hot-swappable. Every frame can be outfitted with internal redundant power supplies, fans, and logic cards; therefore, the likelihood of failure within any given frame is extremely minimal. Redundancy at every step leads to rock-solid reliability throughout the system.

Software support for Leitch's Blue Dynamic Routing Fabric also comes standard as part of the RouterMapper package shipped with every Integrator purchase. The new Dynamic Routing Fabric application allows the user to view the actual path for each and every signal within the system. In the event of a failure, the software will automatically suggest and implement (upon first querying the user) a new route for critical signals.

**Mind-blowing Flexibility** - You can customize the Integrator frame to meet your particular signal requirements - HDTV, SDI, AES, RS 232/422, ASI, and Analog Audio/Video.

You are truly future-proofed with Integrator. Though today you might require SDI signal routing, tomorrow your market needs may dictate the transmission of HDTV. Simply swap out some or all of your SDI modules for HD boards and you're in the HDTV business without ever losing your investment in Integrator!

The distributed architecture greatly enhances the flexibility of the system. Not only is the Blue Dynamic Routing Fabric distributed from an input/output perspective, but the system can be physically distributed - throughout a building or multiple buildings in a campus environment.

Choose the distributed architecture that best fits YOUR application. No more trying to fit a round application into a square box!

**Super-sized Scalability from 32x32 to 512x512** - The distributed topology of Leitch's big Integrator systems allows you to start small and grow big. With Leitch's Blue Dynamic Routing Fabric you can start with a 32x32 system and scale up to a 512x512 router over time. It's simply a case of adding Integrator frames and modules to your existing system.
Combine the outputs from multiple frames to expand the number of inputs. The end result is a completely fault tolerant and wholly-reliable distributed system, with built-in Blue Dynamic Routing Fabric.

A large, distributed 256x128 Integrator system is represented by the following diagram (in red). Expanding the system is easy! Should you want to expand the below system to 256x192, simply DA the inputs and add three more Integrator frames (in blue). That’s it!

For example, in building a large system, we begin by sending the same inputs to multiple frames to expand the number of outputs. This ensures that each "input frame" is looking at the same exact sources, thereby providing a level of reliability and redundancy unmatched in the industry. Should one frame and/or card fail, the source is never lost and can always be routed to a desired output.
Reference Table—Leitch Routers

<table>
<thead>
<tr>
<th></th>
<th>HDTV</th>
<th>SDI/ASI</th>
<th>AES/EBU</th>
<th>Analog Video 525/525</th>
<th>Analog Audio 525/525</th>
<th>Data</th>
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</thead>
<tbody>
<tr>
<td>Integrator</td>
<td>16x16 to 32x32</td>
<td>32x32 to 512x512</td>
<td>32x32 to 512x512</td>
<td>32x32 to 512x512</td>
<td>32x32 to 512x512</td>
<td>32 port to 128 port</td>
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<tr>
<td>Via32</td>
<td>4x4 to 32x32</td>
<td>32x32</td>
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<td>Prophecy</td>
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<tr>
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<tr>
<td>Mix Box &amp; Card Routers</td>
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</table>

Reference Table—Control Options

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<th>Integrator</th>
<th>Via32</th>
<th>Xplus</th>
<th>Xpress</th>
<th>Mix Box &amp; Card Routers</th>
<th>Prophecy 12x2 Wideband</th>
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<tbody>
<tr>
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<td>Yes (requires PC as I/F)</td>
<td>Yes (requires PC as I/F)</td>
<td>Optional (requires PC &amp; SPT as I/F)</td>
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<td>Local Control Panels</td>
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<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Application software for Configuration, Control &amp; Monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Control from Remote Location</td>
<td>TCP/IP (LAN/IEEE/Internet) or Modems for dial-up and leased lines</td>
<td>TCP/IP (requires PC &amp; LAN/WAN/Internet) or Modems for dial-up and leased lines</td>
<td>TCP/IP (requires PC &amp; LAN/WAN/Internet) or Modems for dial-up and leased lines</td>
<td>TCP/IP (requires PC &amp; LAN/WAN/Internet) or Modems for dial-up and leased lines</td>
<td>TCP/IP (requires PC &amp; SPT for LAN/WAN/Internet) or Modems for dial-up and leased lines (requires SPT)</td>
<td>TCP/IP (requires PC &amp; SPT for LAN/WAN/Internet) or Modems for dial-up and leased lines (requires SPT)</td>
</tr>
</tbody>
</table>

Integrator Specifications

**FRAME**
Dimensions (W x D x H)
- 4RU Frame: 17.50" x 15.83" x 6.969"
- 6RU Frame: 17.50" x 15.83" x 10.469"
- 8RU Frame: 17.50" x 15.83" x 13.969"

Weight (Fully Loaded)
- 4RU Frame: Approx. 38 lbs.
- 6RU Frame: Approx. 54 lbs.
- 8RU Frame: Approx. 60 lbs.

All specifications and designs are subject to change without notice.

**POWER SUPPLY**

| Electrical | Input: Universal input (90-250VAC), 47-63 Hz |
| Total Power: | 400W |
| Power Factor Correction: Future- not supported now |
| Current Sharing: | Active, all outputs N+1 hot-swappable (diode isolation) |
| Alarm Signals: +5 fail -24 fail |
| +24 fail - Fan fail |
| Operating Temperature: 0°C to 50°C at 100% power rating |

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