7455
HD/SD/ASI/310M Protection Switch

The 7455 module is a fail-safe, bypass protection switch for critical digital paths for broadcast or satellite applications. When a fault is detected in the primary input, and the secondary input is verified as good, the switch will activate, causing the secondary input to be switched to the module's output. The 7455 includes a passive, fail-safe path that ensures there is an output even in the event of a total power failure.

The 7455 supports SD SDI, HD SDI, SMPTE 310M and DVB-ASI signals. Different types of signal testing (vetting) can be enabled on the 7455 and it will apply the tests according to the type of input that is present. This happens automatically and independently for the Primary and Secondary inputs. This means that the Primary input of the module could be HD SDI while the Secondary input is SD SDI. It is also possible to mix SDI, ASI and 310M signals, or receive the same standard on both the Primary and Secondary inputs.

The health of a high definition or standard definition video signal is determined by monitoring crucial parameters in order of increasing complexity; Timing Reference Signal (TRS), or a persistent loss of digital sync is tested first. Black, Embedded Audio and Freeze are also evaluated. Each test can be configured by the user. For example, the sophisticated Black Detector includes configurable parameters for black level threshold, pixel count, and duration time.

The Freeze detection system can be set to detect a clean or noisy source. Freeze Time sets the number of seconds for the 7455 to switch to the secondary input after a video freeze condition is detected in the primary input.

The health of an ASI or 310M signal is determined by monitoring digital clock lock, packet presence, and PID presence. The user can configure tests to define the minimum number of video packets and audio packets expected per second in a given service.

The switch can operate in two modes: automatic or nonresetting. In fully automatic mode, the 7455 will automatically switch back to the primary signal once it's been restored. In the nonresetting mode, the secondary input remains routed to the output, even after the primary input has recovered.

Controls are easily accessed through an Avenue Control Panel, Avenue PC software, GPIs, or front edge module controls. GPI inputs allow faults detected in upstream equipment to contribute to the switching logic.

Features

- **Bypass Protection Switch for Critical Signal Paths**
- **Use with HD, SD, ASI and 310M signals**
- **Detects TRS, Black, Silence, Freeze for HD and SD Signals**
- **Detects Signal Presence, Program Packets, PMT, PAT and PIDs for ASI and 310M signals**
- **PID specific targeting and analysis**
- **Detection specifics are user-programmable**
- **Passes embedded audio**
- **Fail-safe bypass in case of power failure**
- **Alarm generation**
- **Remote control and monitoring**

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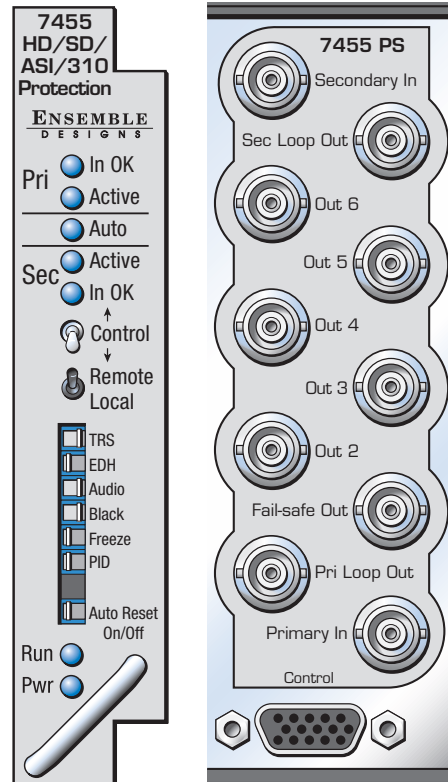
Serial Digital Input

Number	Two
Signal Type	HD Serial Digital 1.485 Gb/s, SMPTE 274M, 292M or 296M
	SD Serial Digital 270 Mb/s, SMPTE 259M or
	DVB-ASI 270 Mb/s or
	SMPTE 310M
Impedance	75 Ω
Return Loss	>15 dB to 1.485 GHz
Automatic Cable Input Equalization	

Standards Supported (auto-detected)

1080i 50, 59.94 or 60 Hz, SMPTE 274M -4,5,6

720p 50, 59.94 or 60 Hz, SMPTE 296M -1,2,3

1080p 23.98, 24 or 25 Hz, SMPTE 274M -9,10,11

1080sF 23.98, 24 or 25 Hz, RP211 -14,15,16

625i 50

525i 59.94

DVB-ASI

SMPTE 310M

Serial Digital Loopback

Number	Two total
	One primary
	One secondary
Impedance	75 Ω

Serial Output Signal

Number	Six total
	One fail-safe bypass output
	Five DA outputs
Signal Type	Follows selected input
Impedance	75 Ω

General Specifications

Power Consumption	<7.0 watts
Temperature Range	0 to 40°C ambient (all specs met)
Relative Humidity	0 to 95% noncondensing
Altitude	0 to 10,000 ft
Fusing	4 each 0.75 Amp PTC resettable fuse with each domain of the module independently regulated

7455 module cannot be installed in slot 3 of a 1RU frame when 5035 System Control module is installed