

## 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 310 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.

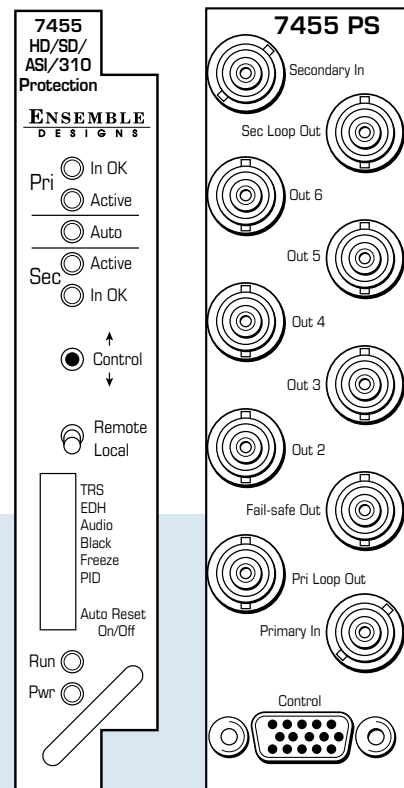
The health of an ASI or 310 signal is determined by monitoring digital clock lock, packet presence, and PID presence. The user can configure tests to define the minimum number of video packets and audio packets expected per second in a given service.

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

- » Fail-safe Bypass Protection Switch for Critical Signal Paths
- » Use with HD, SD, ASI and 310 signals
- » Detects Closed Caption Data, TRS, Black, Silence, Freeze for HD and SD Signals
- » Detects Signal Presence, Program Packets, PMT, PAT and PIDs for ASI and 310 signals
- » Detection specifics are user-programmable
- » Passes embedded audio
- » Alarm generation
- » Remote control and monitoring



**Serial Digital Input**

Number Two  
Signal Type HD Serial Digital 1.485 Gb/s SMPTE 274M, 292M or 296M or 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

**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

**Standards Supported (auto-detected)**

1080i (SMPTE 274M -4,5,6) 50, 59.94 or 60 Hz  
720p (SMPTE 296M -1,2,3) 50, 59.94 or 60 Hz  
1080p (SMPTE 274M -9,10,11) 23.98, 24, 25 Hz  
1080sF (RP211 -14,15,16) 23.98, 24, 25 Hz  
625i 50  
525i 59.94  
DVB-ASI  
SMPTE 310M

**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

