

### FEATURES

- Configurable as inserter or reader
- Data bypass or blank modes
- Line-by-line VBI blanking
- Transparent to HANC data
- Remote control options: GPI/RS485/V1605/Viewfind

### SMPTE RP186 VIDEO OR LINE 23 WSS



The V1649 provides insertion or reading of Wide Screen signal data to SMPTE RP186 (Line 11) or ETS300 294 (WSS Line 23). The unit can be user configured via the module front panel or over DART. In 'Read' mode the Video Index or WSS information embedded in the SDI signal is monitored and reported via GPI-2. This gives both the aspect ratio of the source material and the associated Active Format Descriptor (AFD). Control outputs on GPI-1 are configured to match the GPI inputs on the V1647 Aspect Ratio Converter. This allows the user to configure the V1649 to select different conversion ratios dependent on the received information.

In 'Insert' mode Video Index or WSS data is embedded in the SDI signal dependent on control data received on GPI-2 (port direction is reversed from that in 'Read' mode). Alternatively, GPI-2 can be re-configured providing data insertion under RS485 control. GPI-1 reports the Video Index or WSS data to be inserted. This could, for instance, be used to drive an external display device. When inserting using GPI control, GPI-1 effectively mirrors the control data received on GPI-2.

# V1649

## SDI Video Index/WSS Inserter/Reader

### Technical Specification

#### Serial Input (1)

Format	Compatible with EBU Tech 3267/ANSI T14.223 BNC
Connector	75
Impedance	>15dB, 5-270MHz
Return loss	0-200m (Belden 8281)
Cable	270Mb/s
Data rate	

#### Serial Outputs (1 looped from I/P + 2 processed)

Connector	BNC
Impedance	75
Return loss	>15dB, 5-270MHz
Amplitude	800mV p-p (terminated)
DC offset	0V +/-0.5V
Rise and fall times	0.75 - 1.5ns
Drive capability	Up to 250m (Belden 8281)

#### GPIs

GPI 1 & GPI 2	
Connectors	9 way D type (female)
Levels	TTL
GPI 1 Function:	
V1649 'Read' Mode	Control outputs to V1647 (see v1647 manual)
V1649 'Insert' Mode	VI/WSS Data* outputs (reports GPI 2 data inputs)
GPI 2 Function:	
V1649 'Read' Mode	VI/WSS data* outputs
V1649 'Insert' Mode	VI/WSS data* inputs

Note: Data format consists of 4 bits. Single bit gives source material aspect (16:9 or 4:3). Three bits (binary coded) give Active Format Descriptors (8 variants). In insert mode, additional control bit is provided to select 'insert' or 'bypass'. See manual for pin connections.

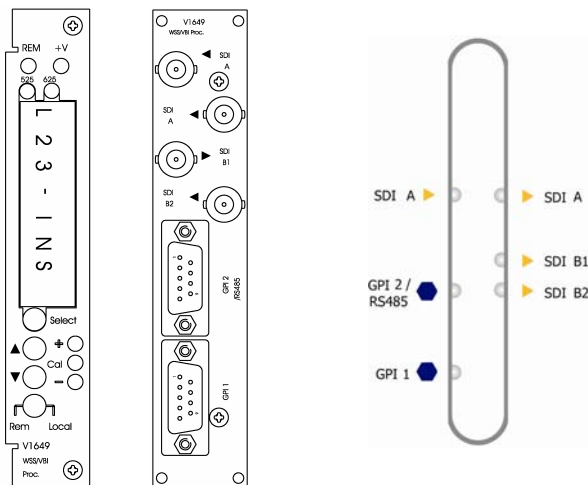
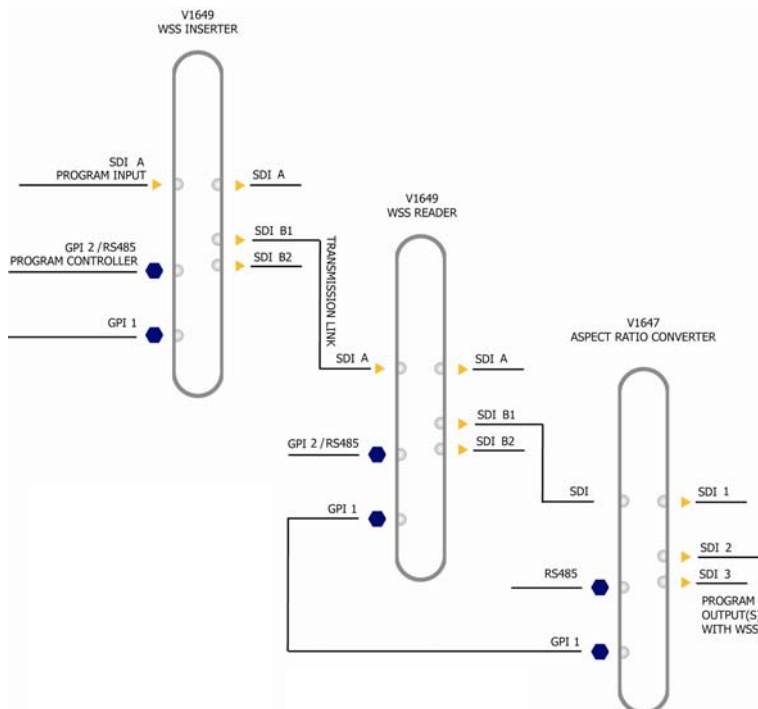
#### Ordering Information

V1649	SDI video index/WSS inserter/reader
V16VR3M	3RU
V16VR1M	1RU

Note: Special versions of the rear module are available on request.

The schematic below shows a typical system using two V1649s. The first V1649 is used to insert VI or WSS data in accordance with GPI data received from the Program Controller. The second V1649 reads the embedded data in the signal at the output of the transmission link. The received data is used to control the V1647 ARC (via GPIs) according to the V1649 user settings. In addition, Video Index or WSS data is re-inserted on the output of the V1647. Settings in the V1647 allow different Video Index/WSS codes to be inserted depending on the conversion ratio being used.

Adjustable insertion delay in the V1647 ARC allows the total delay through the system to be maintained at one video frame. The system is transparent to all SDI (HANC) data. In addition, HANC data delay (including embedded audio) matches the video processing delay of one frame. An analogue composite transmission path or link can be implemented using the ETSI ETS300 294 WSS system. A very high performance link can be realised using Vistek composite converters such as the V1667 and V1668. All converter types will pass/convert Line 23 data.



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