

**APANTAC**

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**MULTIVIEWERS**

# APANTAC MULTIVIEWER PRODUCT FAMILY



**TAHOMA T#1RU ...Pg 16-35**

**Compact modular 4 output multiviewer with image duplication**

- Single frame processing delay
- Up to 16 inputs
- 4 outputs
- Source image duplications
- Modular architecture
- Hot swappable boards



**TAHOMA T#2RU ....Pg 16-35**

**Compact modular 4 output multiviewer with image duplication**

- Single frame processing delay
- Up to 32 inputs
- 4 outputs
- Source image duplications
- Modular architecture
- Hot swappable boards



**TAHOMA T# 4RU . Page 16 - 35**

**Compact modular up to 8 output multiviewer with image duplication**

- Single frame processing delay
- Up to 64 inputs
- up to 8 outputs
- Image duplication
- Modular architecture
- Hot swappable boards



**Mx-32 .....Pg 40-41**

**Cost effective 32x4 output multiviewer with image duplication**

- Single frame processing delay
- Low energy consumption - 75 W
- 32 inputs and 4 independent outputs
- Source image duplications up to 32x
- Every input is available in every output
- Redundant power supplies



**Mx-32-4KDP .....Pg 42-43**

**Cost effective 32 input UHD multiviewer with image duplication**

- Single frame processing delay
- Low energy consumption - 75W
- Up to 32 inputs, including UHD
- Source image duplications
- Every input is available in every output
- Redundant power supplies



**OG-MicroQ.....Pg 44-45**

**openGear card based SDI quad split**

- Low power consumption (12W per Module)
- Single frame processing delay
- Ideal for mobile production
- Fixed quad split
- Hot swappable boards
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Up to 10 cards can fit into a OG-3 frame



**Mi-16 .....Pg 36-39**

**Cost effective  
16x1 multiviewer**

- Single frame processing delay
- Low energy - only 15 W
- Up to 16 inputs
- 16 passive loop throughs
- Windows can be sized and moved freely
- Simultaneous HDMI and SDI outputs



**Mi-16+ .....Pg 36-39**

**Cost effective  
16x2 multiviewer**

- Single frame processing delay
- Low energy - only 15 W
- Up to 16 inputs and 2 outputs
- 16 passive loop throughs
- Windows can be sized and moved freely
- Simultaneous HDMI and SDI outputs



**Mi-16# .....Pg 36-39**

**Cost effective  
16x2 multiviewer**

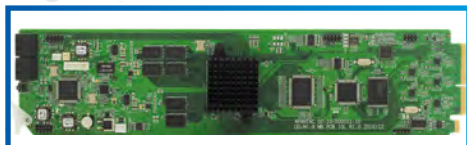
- Single frame processing delay
- Low energy - only 15 W
- Up to 16 inputs and 2 outputs
- Any input is available on any output
- Any input can be duplicated 16 times
- 16 passive loop throughs
- Windows can be sized and moved freely
- Simultaneous HDMI and SDI outputs



**OG-MiniQ .....Pg 46-47**

**4 input openGear card based  
multiviewer**

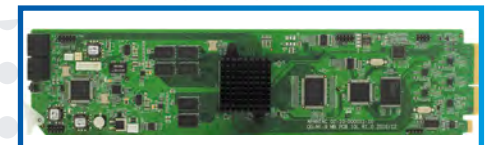
- Low power consumption - 15W
- Single frame processing delay
- Ideal for mobile production
- Up to 10 cards can be cascaded together
- Hot swappable boards
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Up to 10 cards can fit into a OG-3 frame



**OG-Mi-9 .....Pg 48-49**

**9 input openGear card based  
SDI multiviewer**

- Low power consumption - 15W
- Single frame processing delay
- Ideal for mobile production
- Hot swappable boards
- 9 auto-detect 3G/HD/SD-SDI inputs
- 1 SDI output
- GPI and TSL Tally interface
- Windows can be sized and moved freely
- Up to 10 cards can fit into a OG-3 frame

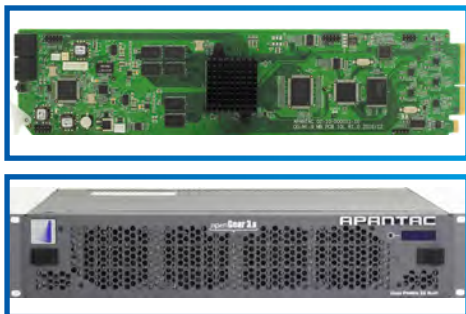


**OG-Mi-9+ .....Pg 50-51**

**9 input openGear card based  
SDI multiviewer**

- Low power consumption - 15W
- Single frame processing delay
- Ideal for mobile production
- Hot swappable boards
- 9 auto-detect 3G/HD/SD-SDI inputs
- 1 SDI and HDMI output
- GPI and TSL Tally interface
- Windows can be sized and moved freely
- Up to 10 cards can fit into a OG-3 frame

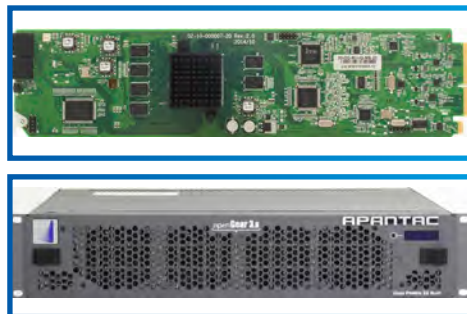
# APANTAC MULTIVIEWER PRODUCT FAMILY



**OG-Mi-9# .....Pg 52-53**

## 9 input openGear card based SDI multiviewer

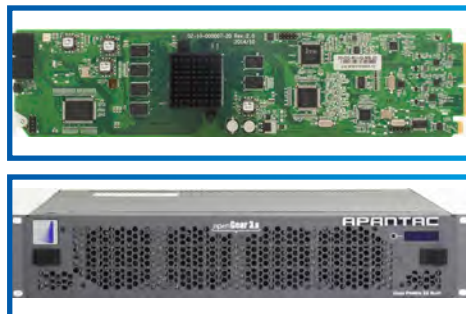
- Low power consumption - 15W
- Single frame processing delay
- Ideal for mobile production
- Hot swappable boards
- 9 auto-detect 3G/HD/SD-SDI inputs
- 2 independent outputs -1 SDI and HDMI
- GPI and TSL Tally interface
- Windows can be sized and moved freely
- Up to 10 cards can fit into a frame



**OG-MiniDE-II .....Pg 54-55**

## openGear card based HDMI multiviewer

- Low power consumption (12W per Module)
- Single frame processing delay
- Ideal for mobile production
- Up to 10 cards can be cascaded together
- Hot swappable boards
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Up to 10 cards can fit into a OG-3 frame



**OG-MiniDL-X+X .....Pg 56-57**

## openGear card based multiviewer

- Low power consumption (12W per Module)
- Single frame processing delay
- Ideal for mobile production
- Up to 10 cards can be cascaded together
- Hot swappable boards
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Up to 10 cards can fit into a OG-3 frame



**MiniDE-II ..... Page 66 - 67**  
**Compact 4 HDMI input multiviewer**

- Low power consumption -15W
- Compact in depth (10 inches / 25 cm)
- 4 HDMI inputs
- Windows can be sized freely
- Up to 3 modules can be mounted in 1 RU
- GPI and TSL Tally interface
- 4 channels of embedded audio per HDMI
- Analog and digital clocks



**MiniDE-DL-X+X .. Page 68 - 69**  
**Hybrid Multiviewer - SDI + HDMI**

- Low power consumption -15W
- Compact in depth (10 inches / 25 cm)
- Available in 3 models: 1+3, 2+2, 3+1
- Windows can be sized freely
- Up to 3 modules can be mounted in 1 RU
- GPI and TSL Tally interface
- 4 channels of embedded audio per HDMI
- 8 channels of embedded audio per SDI
- Analog and digital clocks



**MicroQ-S .....Pg 70-71**  
**Compact fixed video quad split**

- Single frame processing delay
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Low power consumption (12W per Module)
- HDMI and SDI output with embedded audio
- Safe Area indicators
- GPI and TSL tally support



**TAHOMA MiniQ .....Pg 58-61**

**Compact modular multiviewer**

- Single frame processing delay
- Low power consumption (15W per Module)
- Hot swappable boards and power supplies
- Compact in depth (10 inches / 25 cm)
- Ideal for mobile production
- Up to 8 modules can fit into a 3 RU frame



**Crescent Mi-9 ..... Pg 62-63**

**Compact 9 input multiviewer**

- Low power consumption - 15W
- Single frame processing delay
- Ideal for mobile production
- Hot swappable boards
- 9 auto-detect 3G/HD/SD-SDI inputs
- 1 SDI output
- GPI and TSL Tally interface
- Windows can be sized and moved freely
- 3 units can be mounted in 1 RU



**MiniQ-II ..... Page 64 - 65**  
**Compact 4 input multiviewer**

- Single frame processing delay
- Low power consumption - 15W
- Compact in depth (10 inches / 25 cm)
- 4 auto-detect 3G/HD/SD-SDI/CVBS inputs
- Windows can be sized freely
- Up to 3 modules can be mounted in 1 RU
- GPI and TSL Tally interface
- Supports Closed Caption 608/708



**TAHOMA LE .....Pg 80-93**

**Pre-configured multiviewer**

- Single frame processing delay
- 4-64 auto-detect 3G/HD/SD-SDI/CVBS inputs
- 16 Channels of embedded audio per SDI
- Automatic input aspect ratio detection
- Closed Caption, AFD, WSS
- Built-in video and audio alarm detection



**TAHOMA LI .....Pg 94-- 101**

**Pre-configured multiviewer with looping inputs**

- Single frame processing delay
- 4-16 auto-detect 3G/HD/SD-SDI inputs
- Looping inputs
- 16 channels of embedded audio per SDI
- Automatic input aspect ratio detection
- CC, AFD, WSS. Built-in alarm detection
- Up to 8 modules can fit into a 3RU frame



**TAHOMA LX .....Pg 102-109**

**Pre-configured multiviewer with built-in router**

- Single frame processing delay
- 4-32 auto-detect 3G/HD/SD-SDI inputs
- Built-in router for source duplication
- 16 channels of embedded audio per SDI
- Automatic input aspect ratio detection
- CC, AFD, WSS. Built-in alarm detection

# APANTAC MULTIVIEWER PRODUCT FAMILY



TAHOMA DL .....Pg 110-113

## Hybrid Multiviewer

- Mixture of DVI/VGA/YPbPr/Composite and SDI inputs
- Up to 16 mixed inputs
- Optional HDMI inputs (with HDMI to DVI adapter)
- Displays and decodes HDMI audio meters
- Displays and decodes SDI audio meters
- Built-in CATx extenders



TAHOMA DE .....Pg 114-117

## Universal Multiviewer

- Universal inputs
- 4 -16 DVI/VGA/YPbPr, composite inputs
- Optional HDMI inputs
- Display and decoded HDMI audio meters
- Optional SDI inputs
- Built-in CATx extenders



TAHOMA IP .....Pg 118-119

## IP Multiviewer

- Decode up to 16 streams
- Demultiplex incoming SPTS/MPTS
- Decodes MPEG2 / H.264 / MPEG4
- MPEG2 MP@HL, resolution up to 1080p60Hz
- Decodes up to 2 stereo pairs of audio per video
- Decodes and display CC, AFD
- Built-in CATx extenders



ULTRA DE-4K .....Pg 128-134

## Multiple input video wall processor

- Can be configured into a 2x2 or 1x3 wall
- Output resolution up to 3840x2160
- Universal inputs
- 4-8 HDMI/DVI/VGA/YPbPr/CVBS inputs
- Optional SDI inputs
- Decodes/displays HDMI audio meters
- Built-in audio and video alarm detection
- Built-in CATx extenders



ULTRA LE-4K .....Pg 132-134

## Multiple SDI input video wall processor

- Can be configured into a 2x2 or 1x3 wall
- Output resolution up to 3840x2160
- Up to 12 3G/HD/SD-SDI/CVBS inputs
- Supports 16 channels of embedded audio
- Built-in audio and video alarm detection
- Built-in CATx extenders



**TAHOMA IL .....Pg 122-125**

**Hybrid Multiviewer**

- Mixture of H.264/Mpeg4/ASI/Composite and SDI inputs
- Up to 16 mixed inputs
- Demultiplex incoming SPTS/MPTS
- Decodes MPEG2 / H.264 / MPEG4
- MPEG2 MP@HL, resolution up to 1080p60Hz
- Decodes up to 2 stereo pairs of audio per video
- Displays and decodes SDI audio meters
- Built-in CATx extenders



**MiniDE-4 ..... Pg 124 - 125**

**Compact multimedia input multiviewer**

- Cost effective
- 4 HDMI/DVI/VGA/YPbPr/Composite inputs
- Windows can be sized freely
- Compact in depth (10 inches / 25 cm)
- DVI/HDMI output up to 1080p 60Hz



**MiniDE-4-UHD ...Pg 125-127**

**Compact UHD multiviewer**

- Can display up to 4 inputs
- Supports 4 x HDMI inputs (UHD,HD, SD)
- As well as VGA and DisplayPort
- Supports true 4K/UHD inputs and output
- 4K@60Hz at 4:4:4
- Supports deep color and HDCP 1.4/2.2
- Supports Dolby Digital 5.1, DTS 5.1
- Supports uncompressed 7.1

# FEATURE OVERVIEW

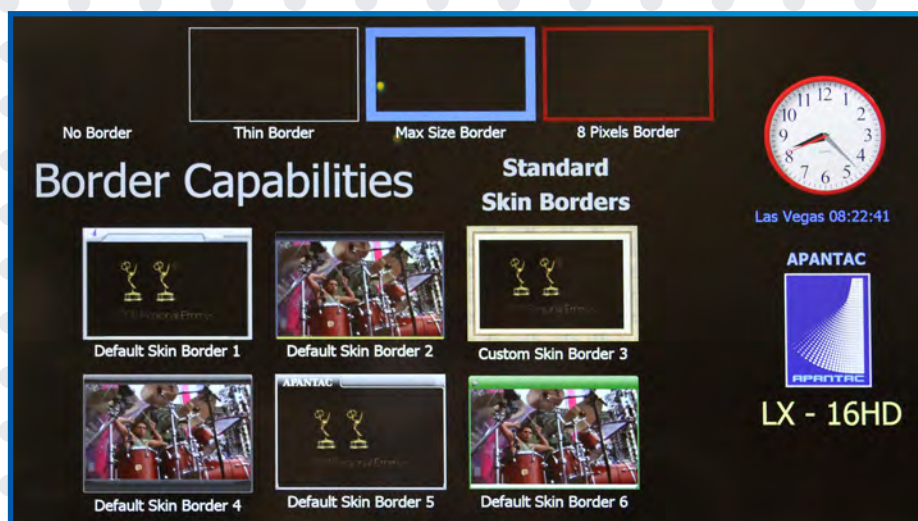
## LABELS

- Up to 4 labels per window - UMD (under monitor display), IMD (in monitor display), OMD (over monitor display)
- 2 window labels can be placed over / outside windows
- 2 standalone labels can be placed outside windows
- 2 x 32 character labels and 2 x 16 character labels
- Adjustable background transparency
- Labels can be positioned anywhere
- Size, color, and font style are all adjustable



## BORDERS

- Simple borders can be any width and any color
- 6 default border skins
- Create your own customized border skins with the Apantac Skin Utilities





## SAFE AREA, AUDIO METERS, VISUAL ALARMS

- 2 sets of safe-area / safe-title markers per source window
- 16 channels of embedded audio can be decoded and displayed
- Up to 4 optional discrete analog or AES audio channels can be displayed per video source
- Audio meters can be placed anywhere on the screen
  - Inside the video
  - Outside the video
  - Standalone
- Visual Alarms
  - Alarm tag size, position, color message and behavior are all user-configurable
  - Alarm tags can be placed anywhere on the screen
    - Inside the video
    - Outside the video
  - Window border can be set to blink any color upon alarm condition
- GPI-Out - GPO relay can be set to close upon selected alarm condition

APANTAC

Stand Alone Meters

Safe Area / Safe Title

APANTAC

Safe Area / Safe Title

Las Vegas 08:23:52

APANTAC

Up to 16 Meters / Window

Meters over Video

APANTAC

Safe Area / Safe Title

Audio Meters

Visual Alarms

No Audio

Alarms

1080i@50

Video Frozen

Video Black

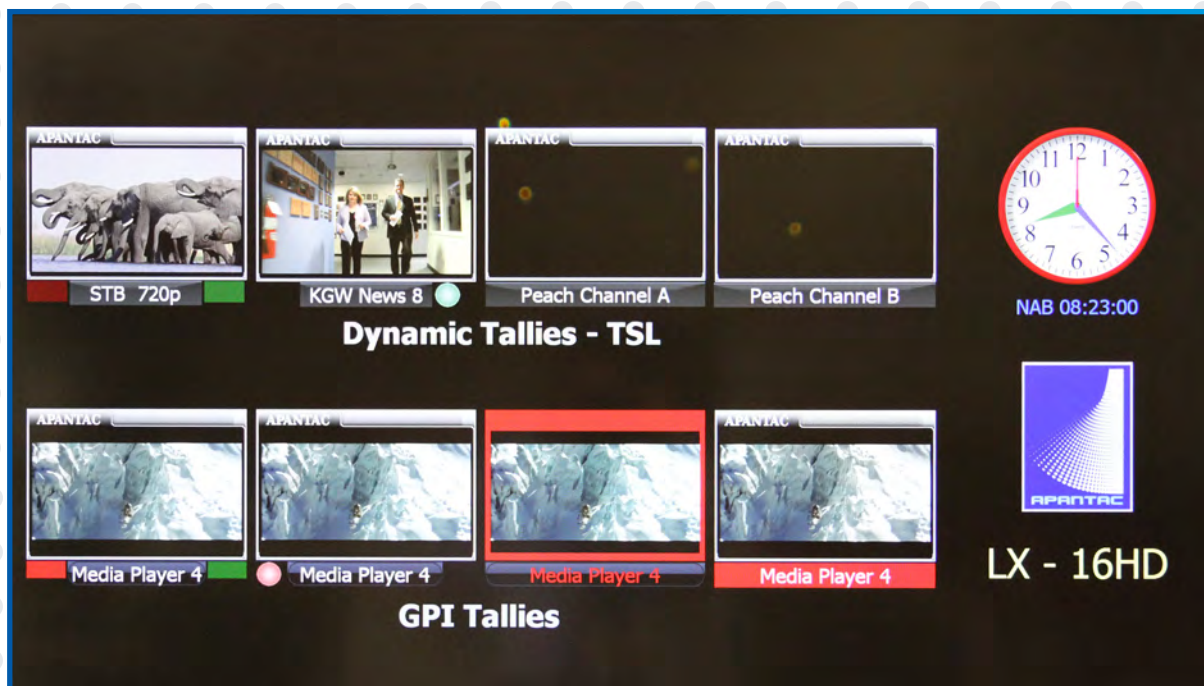
APANTAC

LX - 16HD

# FEATURE OVERVIEW

## TALLY and GPI/O

- Four levels of tallies - GPI & TSL interfaces
- Flexible tally display
  - Two LEDs
  - Border
  - UMD Text
  - UMD Background
  - Or a mix of all of the above
- TSL support over serial and IP - V3.1
- Outputs: Electronic relays configured to report alarm conditions
- GPIs
  - Two GPI input contacts per video input - both can be used for tally control or one for tally control and one for counter control
  - Eight extra GPI/O on the control board can be configurable as:
    - Inputs: Recall presets / launch any AXP command
    - Outputs: Electronic relays configured to report alarm conditions



## CLOCKS and LOGOS

- One analog clock and one digital clock per every 4 inputs
  - LTC or NTP locking capabilities
  - Digital clocks can be configured as count-up or count-down timers
  - Customize analog clock faces with any graphical tool that can produce BMP files
- LOGOs
  - Can download any BMP file to be used as logo
  - Customize logos with any graphical tool that produces BMP files
  - One logo per every group of 4 windows

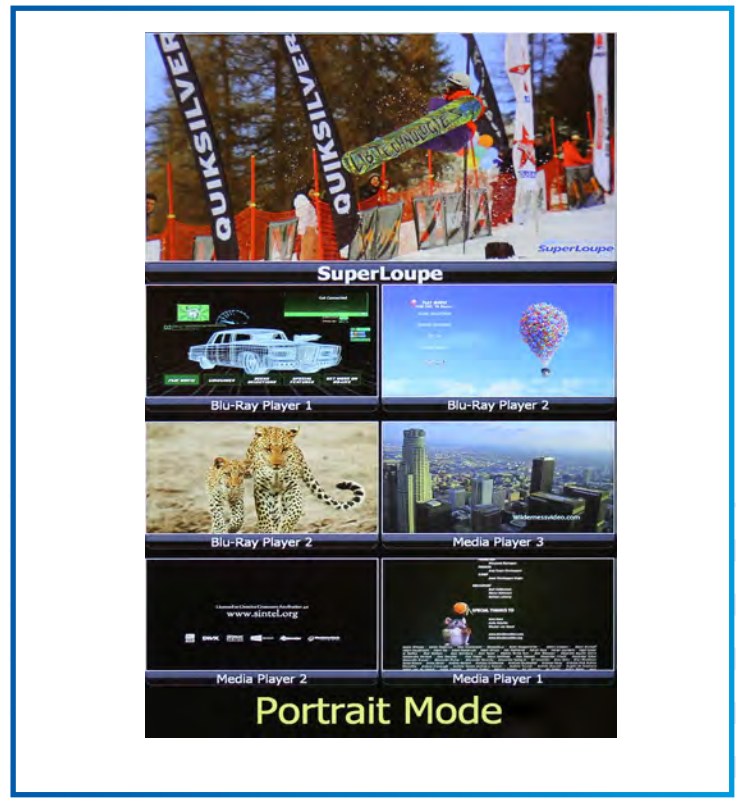
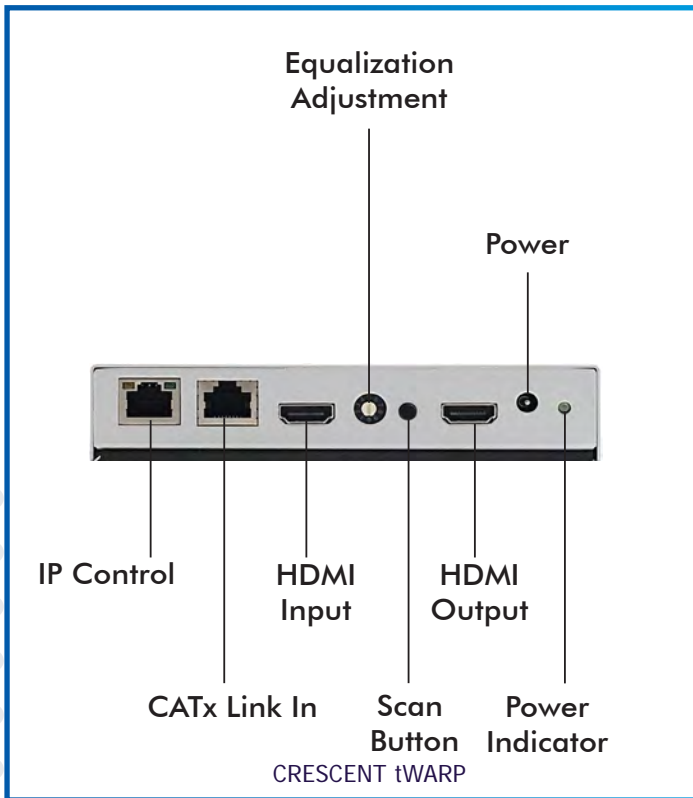


**NOTE: All images in this section are actual screen captures of the TAHOMA multiviewer output. They are not simulated!**

# FEATURE OVERVIEW

## PORTRAIT MODE

- To display in Portrait Mode, simply connect any TAHOMA Classic output to the CRESCENT tWarp to turn the image 90 or 270 degrees
- This option can be purchased at any time
- For more details please reference to the MT HOOD / CRESCENT / MAZAMA Catalog





# ACCESSORIES & OPTIONS



RJ45-DB9: RS232 Adapter



RJ50-DB9: GPI/O Adapter



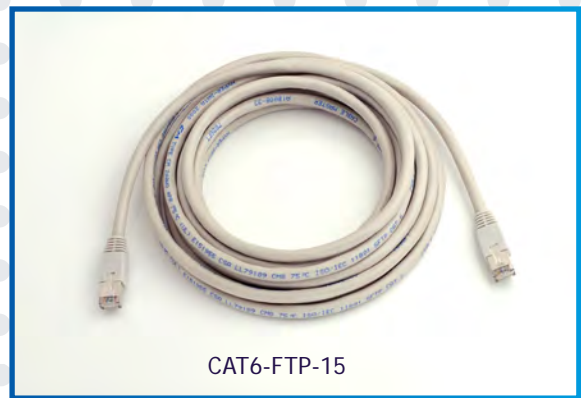
SCSI-DB9: GPI Adapter



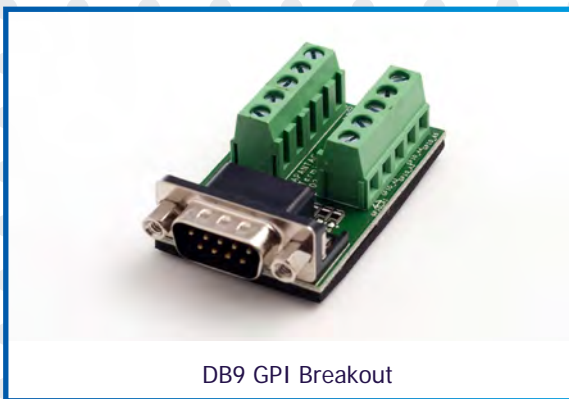
DVI-SR: Passive DVI Receiver



HDMI-SR: Passive HDMI Receiver



CAT6-FTP-15



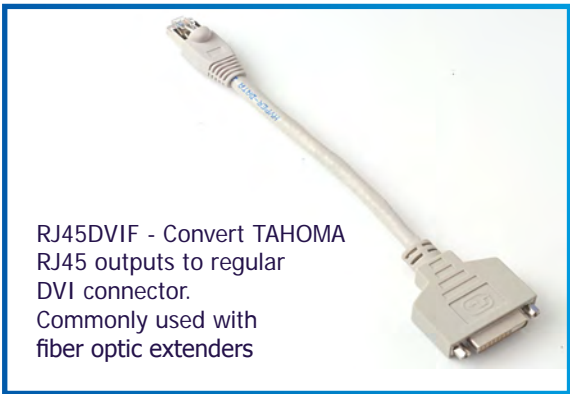
DB9 GPI Breakout



SPP - Simple Preset Panel



16 Button Control Panel



RJ45DVIF - Convert TAHOMA RJ45 outputs to regular DVI connector. Commonly used with fiber optic extenders



DVI-1-LR - Long distance DVI CATx Receiver - extend signals to 115 ft at 1080p



VGA/YPbPr-REC - VGA/YPbPr Receiver



KEYPAD - Preset Recall Keypad



HDMI-1-R - Long distance HDMI CATx Receiver - extend signals to 115 ft at 1080p

# TAHOMA T# (T-SHARP) WALL / MULTIVIEWERS

## T# Multiviewer Platform

The newest member of the TAHOMA Multiviewer family

- Single frame of processing delay on baseband inputs
  - Fast boot up ( < 10 seconds)
  - Modular architecture
  - All input cards are hot swappable
    - CVBS to UHD input cards
    - HDMI input cards
    - IP (H.264/Mpeg4, Mpeg2) input cards
    - SFP input cards can accept SDI fiber or SMPTE 2022 SFPs
  - Up to 4 outputs per output board (maximum 2 output boards = 8 outputs)
  - Any input can be duplicated up to 64 times and displayed on any output, regardless of format
  - Built-in video/audio alarm detection
    - video presence/format, video black, video frozen, no WSS/AFD
    - audio presence, audio high/low
  - Visual and optional SNMP alarms & logging single frame of processing time
  - Multiple labels per video window - UMD, OMD, IMD and standalone labels
  - Up to 30 presets per output
  - Supports TSL 3.1 and 4.0 (IP and RS232)
  - Supports AXP2 (Apantac eXchange Protocol version 2)
  - Supports 3rd party routers and production switchers\*
  - Redundant power supplies
  - Multiple analog and digital clocks
  - 2 sets of "safe area / safe title" markers per image
  - 3 year limited warranty
- \* Check with your Apantac representative for supported protocols





Up to 1920x1080P / 2048x1080P  
HDMI/HDBaseT outputs  
w/embedded audio

3Gbps/HD/SD outputs  
on BNC/SFP  
w/embedded audio



4 or 8 multiviewer outputs



Up to 64 SDI inputs  
or Up to 32 HDMI inputs  
or Up to 64 H.264/ASI decodes  
or Up to 32 ST-2022-# with SFPs



Configuration port. 3rd party router / switcher interface. SNMP. ASCII protocol

LTC #1 to synchronize clocks.  
LTC #2 for count down / count up timer trigger

Serial Control Panel / Apantac ASCII Protocol / 3rd party Router/ Switcher

Up to 128 channels of AES / AA Balanced/ Unbalanced discrete audio

Tally GPI/ Count up/ down clock Trigger

Alarm GPO or GPI Control Panel/ Trigger

# TAHOMA T# (T-SHARP) MULTIVIEWERS

**T#: 3 FRAME SIZES, 52 PRE-CONFIGURED SDI MULTIVIEWER MODELS.  
ANY PRE-CONFIGURED MULTIVIEWER CAN BE EXPANDED EASILY  
BY ADDING INPUT OR OUTPUT BOARDS**



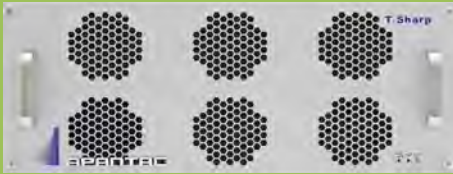
T# 1 RU

T# - 16x4  
T# - 8x4-H  
T# - 16x4-IP



T# 2 RU

T# - 16x4      T# - 24x4  
T# - 8x4-H      T# - 24-4-IP  
T# - 12x4-H      T# - 32x4  
T# - 16x4-H      T# - 32x4-IP  
T# - 16x4-IP



T# 4 RU

T# - 8x4      T# - 24x4      T# - 40x4      T# - 56x4  
T# - 8x4-H      T# - 24x4-H      T# - 40x4-IP      T# - 56x4-IP  
T# - 8x4-IP      T# - 24x4-IP      T# - 40x8      T# - 56x8  
T# - 8x8      T# - 24x8      T# - 40x8-IP      T# - 56x8-IP  
T# - 8x8-H      T# - 24x8-H      T# - 48x4      T# - 64x4  
T# - 8x8-IP      T# - 24x8-IP      T# - 48-4-IP      T# - 64x4-IP  
T# - 16x4      T# - 32x4      T# - 48x8      T# - 64x8  
T# - 16x4-H      T# - 32x4-H      T# - 48-8-IP      T# - 64x8-IP  
T# - 16x4-IP      T# - 32x4-IP  
T# - 16x8      T# - 32x8  
T# - 16x8-H      T# - 32x8-H  
T# - 16x8-IP      T# - 32x8-IP

## ON SCREEN ELEMENTS

- Audio Support:
  - Decode the 16 SDI Embedded Audio
  - Display up to 256 meters per output board
  - Analog / AES Stereo Monitoring output
- UMDs & Labels:
  - Two 32 Character labels per / Output
  - Labels can be Static, Follow input or Dynamic (TSL)
- Safe Title / Safe Area Markers:
  - Two sets of Markers per Window
  - Line and Shadow for Marker Set 1
  - Line for Marker Set 2
- Alarms:
  - video presence/format, video frozen, black
  - audio presence, audio high/low
  - Visual Alarms and GPI output Parameters
- Analog & Digital Clocks / Counters
  - Free running or Sync up to LTC, NTP
  - Up and Down Counters
  - Control via GPI, AXP protocol
- Tallies:
  - GPI and TSL over IP control
  - Five Tally attributes:
    - 2 x LED, Text, Background & Border Color
    - Up to 4 Tally levels Control with TSL
- Presets & Configuration:
  - Create and Save up to 30 Presets
  - Recall them via GPI, AXP protocol over IP with
  - Hardware & Software panels
- Logos:
  - Bitmap logos are downloadable



This is not a simulated layout, it is an actual Output of a T#

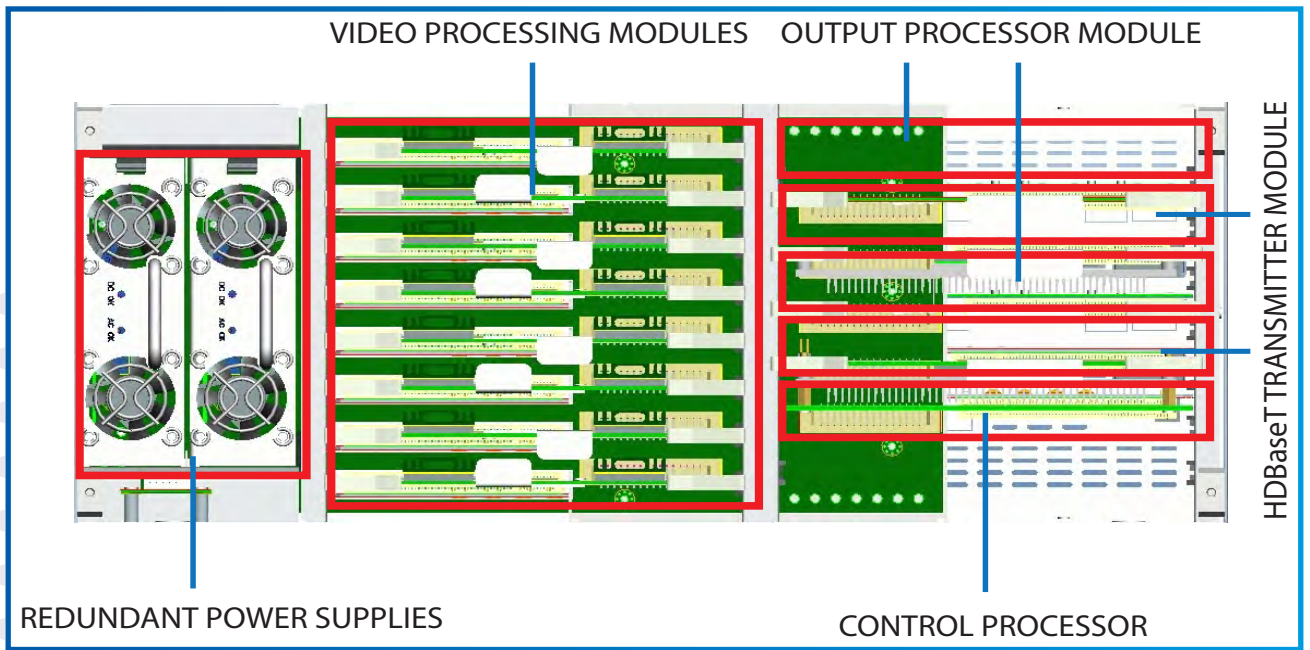
# TAHOMA T# ARCHITECTURAL CONCEPTS

## TAHOMAT# Frame Sizes

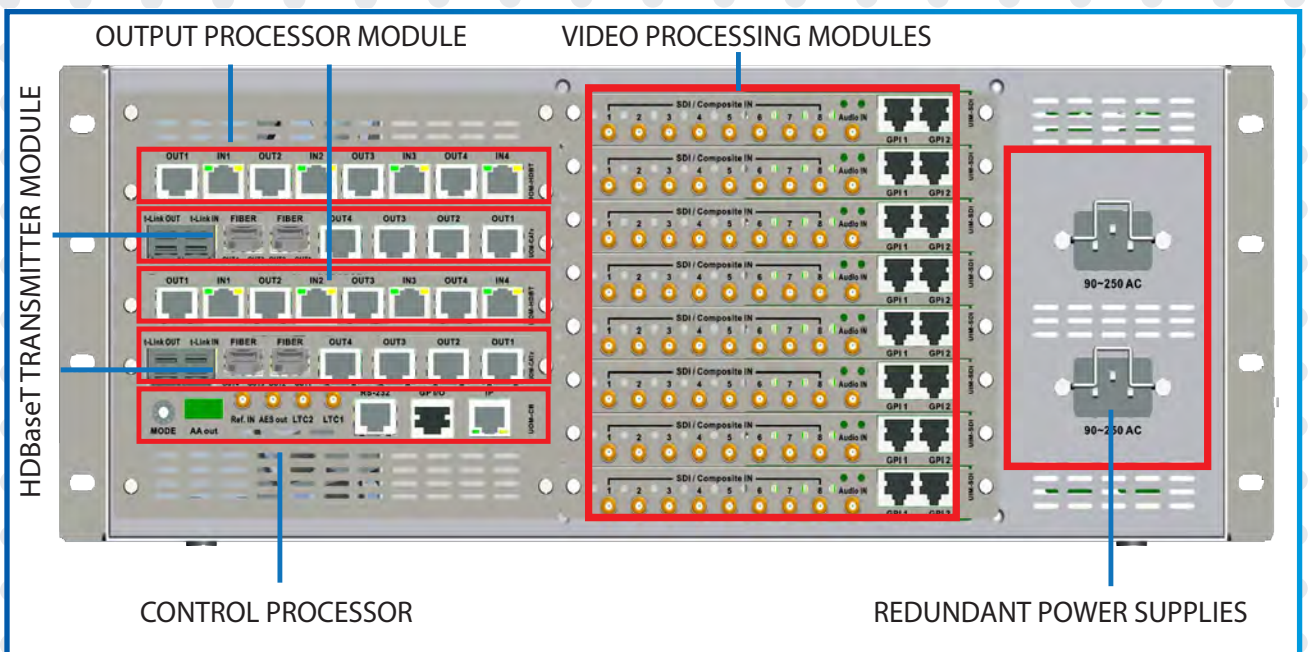
The T# comes in 3 different frame sizes, 1 RU, 2 RU and 4 RU. All of the frames are completely modular, therefore different I/O modules can be inserted to form different sizes of multiviewers.

- All frames are completely modular
- Comes standard dual power supplies
- Coolings are front to back

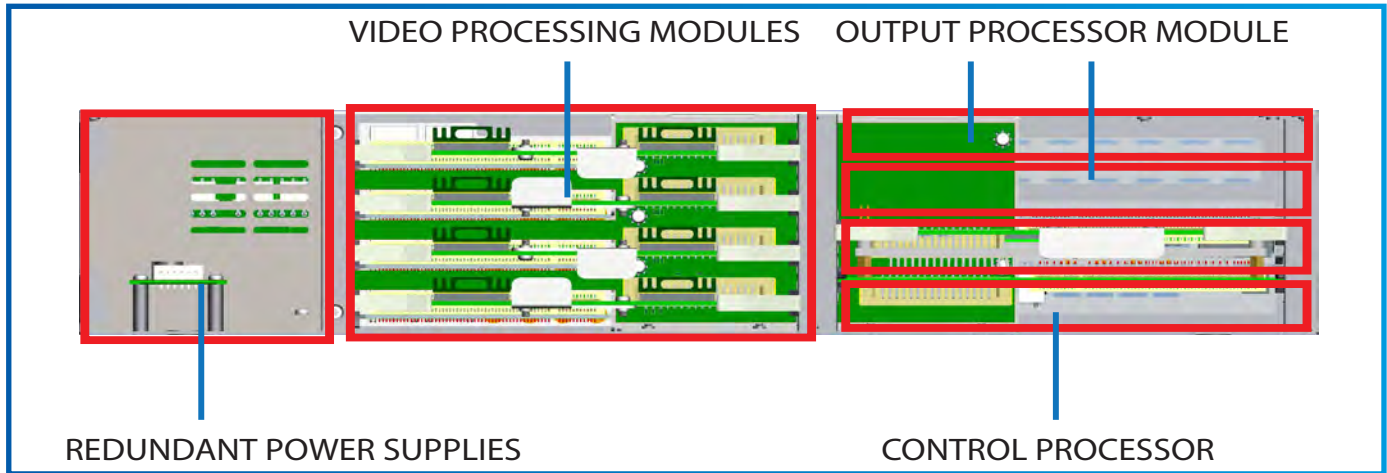
### T# 4 RU Front Inside



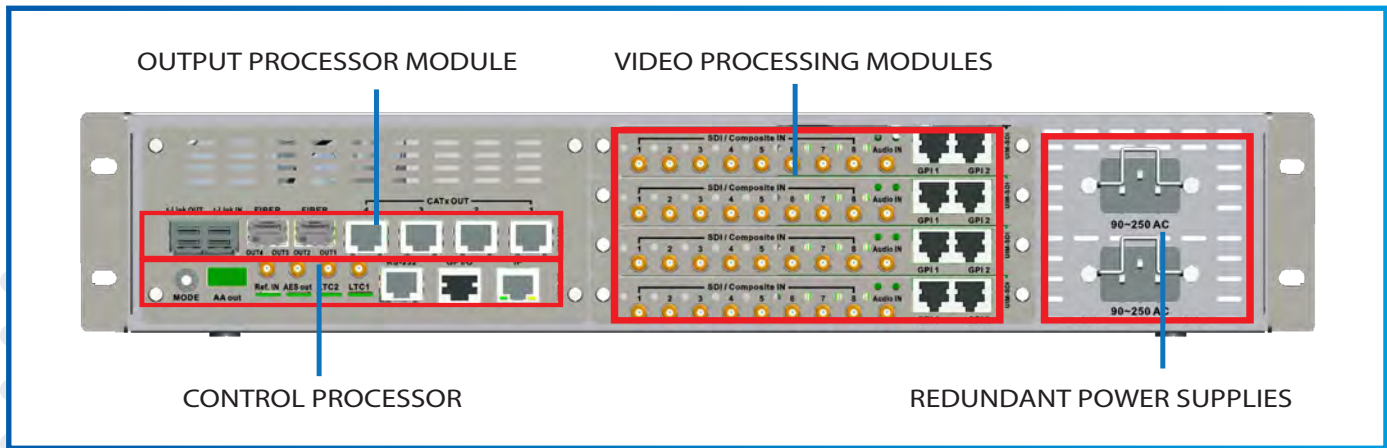
### T# 4 RU Rear



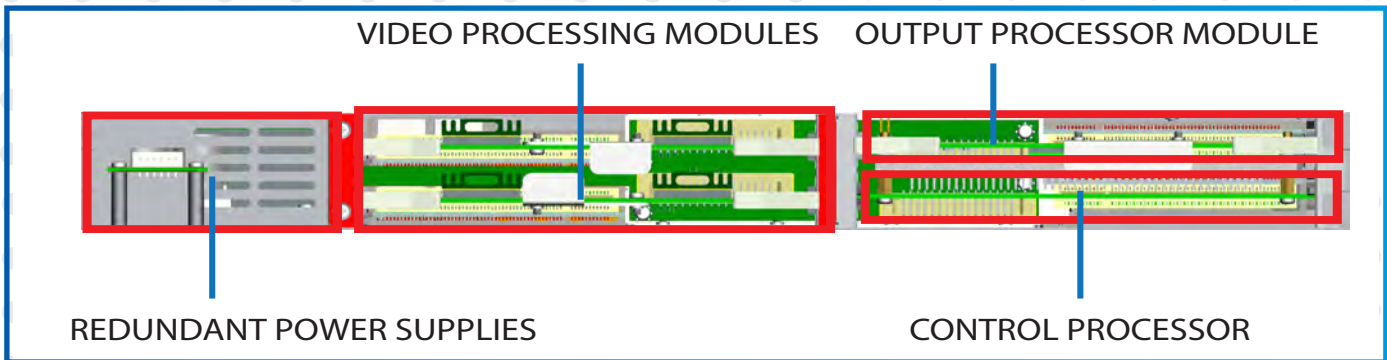
**T# 2U Front Inside**



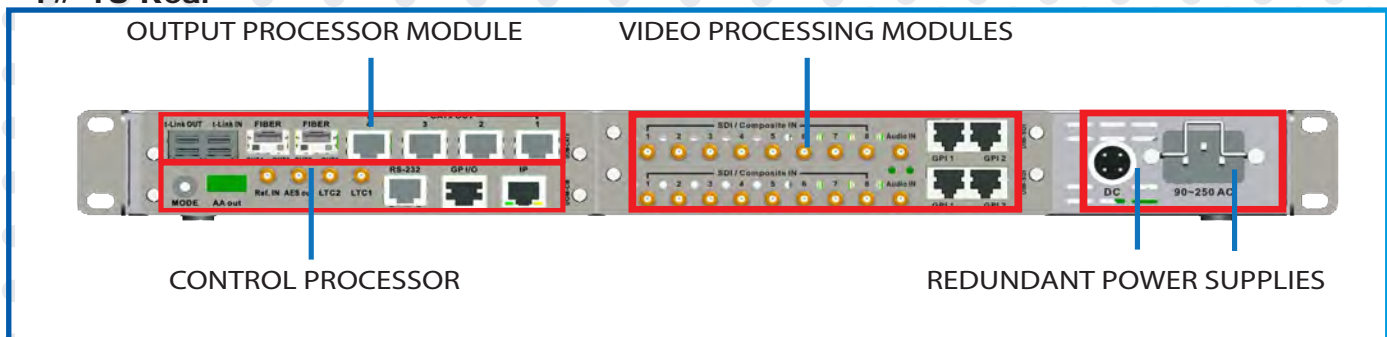
**T# 2U Rear**



**T# 1U Front Inside**



**T# 1U Rear**



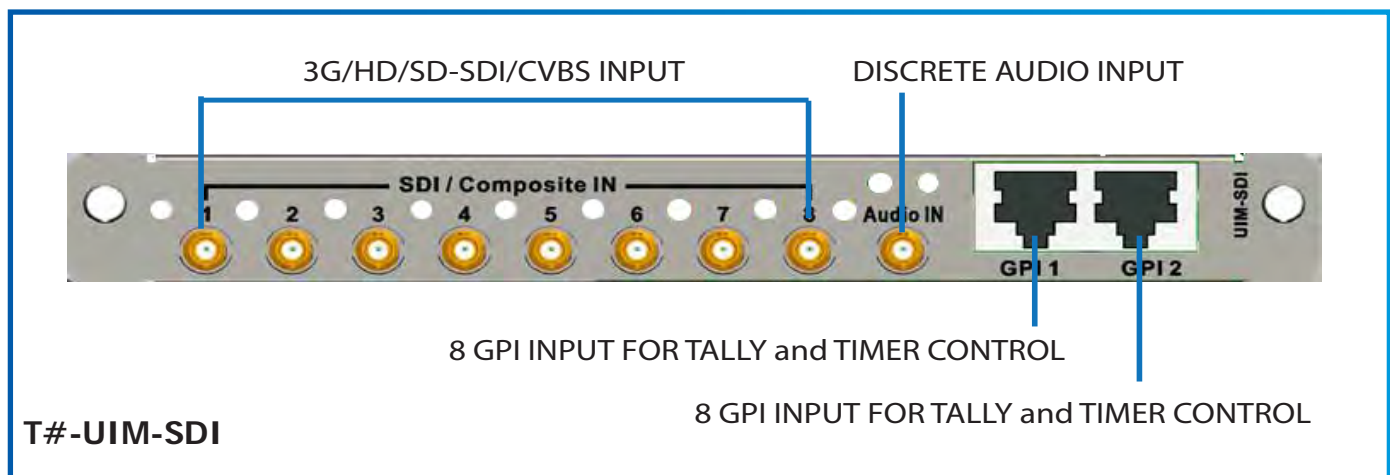
# TAHOMA T# (T-SHARP) MULTIVIEWERS

## The T# (T-Sharp) Multiviewer Platform

The newest member of the TAHOMA Multiviewer family

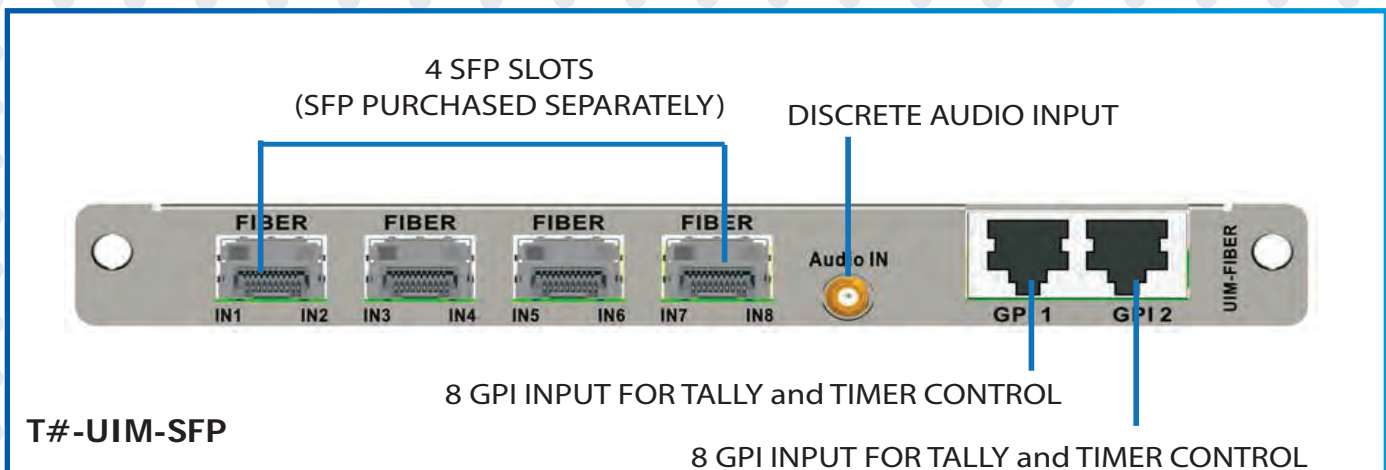
### STANDARD BROADCAST INPUT BOARDS:

- Each input card supports 8 video inputs
- All input cards are hot pluggable
- Automatic input aspect ratio detection, by frequency, by WSS and AFD
- Decodes closed captioning on Line 21, CEA608/708 on each input
- Decodes and displays 16 channels of embedded audio per SDI input
- When fully populated, can display up to 64 SDI windows per display
- Can mix and match with other input boards



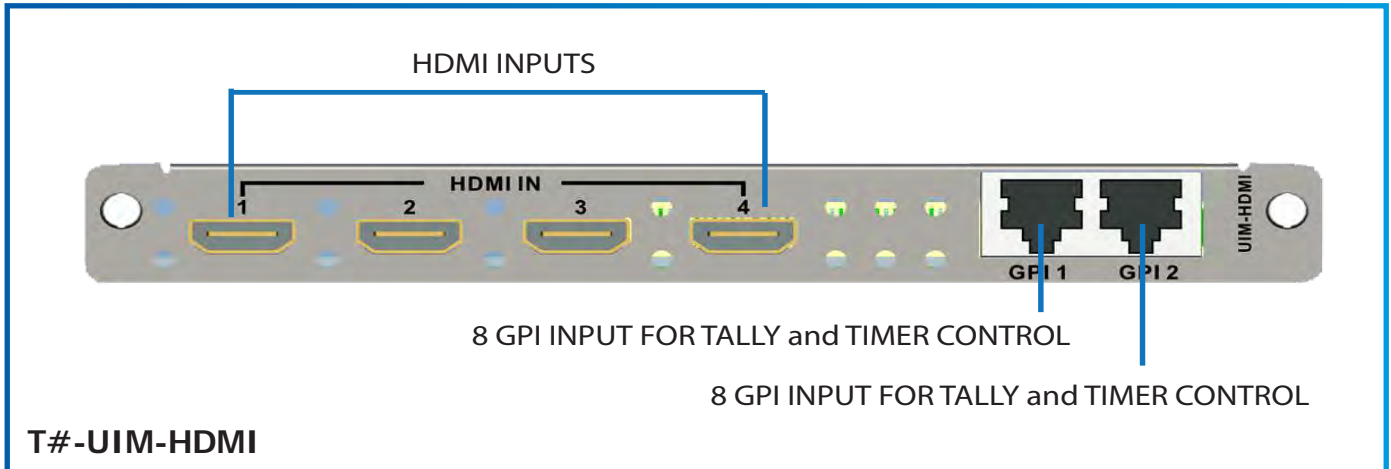
### SFP TYPE BROADCAST INPUT BOARDS:

- Has all functionality of the standard broadcast input boards
- Instead of fixed BNCs, there are four SFP slots for future proof inputs
- SFP modules are sold separately



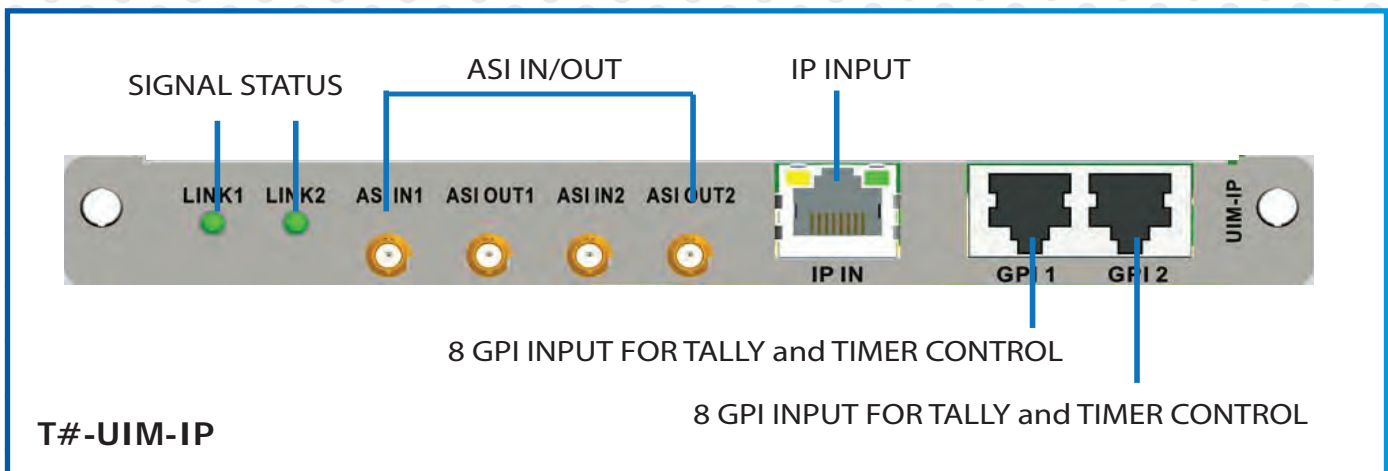
## HDMI INPUT BOARDS:

- Each input card supports 4 HDMI inputs
- Supports up to 1920x1200 (1080P) input resolutions
- All input cards are hot pluggable
- When fully populated, can display up to 32 HDMI windows per display
- Can mix and match with other input boards



## IP INPUT BOARDS:

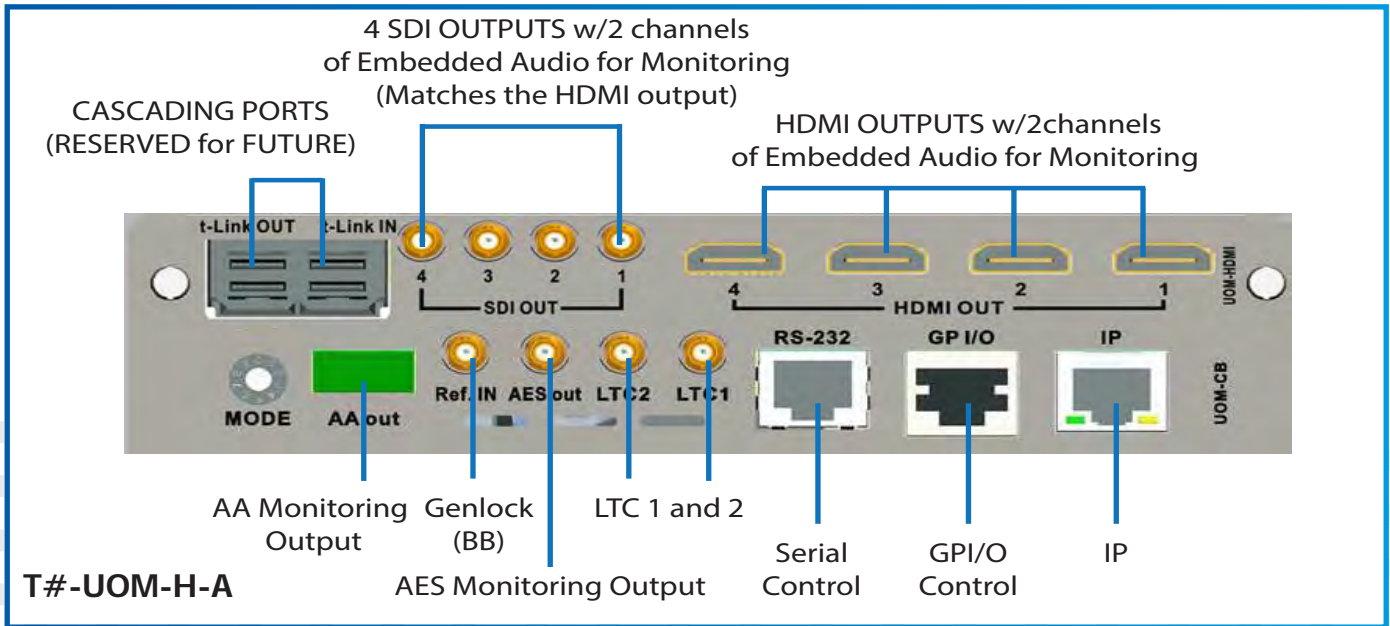
- Each input card has one RJ45 input and 2 ASI Inputs and Loop-out
- Each input card can decode up to 8 streams of IP or ASI
- Compliant to ISO/IEC 13818-1 MPEG-2 Transport Stream Specification
- Demultiplexing incoming SPTS/MPTS
- MPEG2/H.264 decode
- MPEG2 MP@HL, resolution up to 1080P/1080i@60Hz
- Supports both 50 and 60Hz
- All input cards are hot pluggable
- When fully populated, can display up to 64 decode IP windows per display
- Can mix and match with other input boards



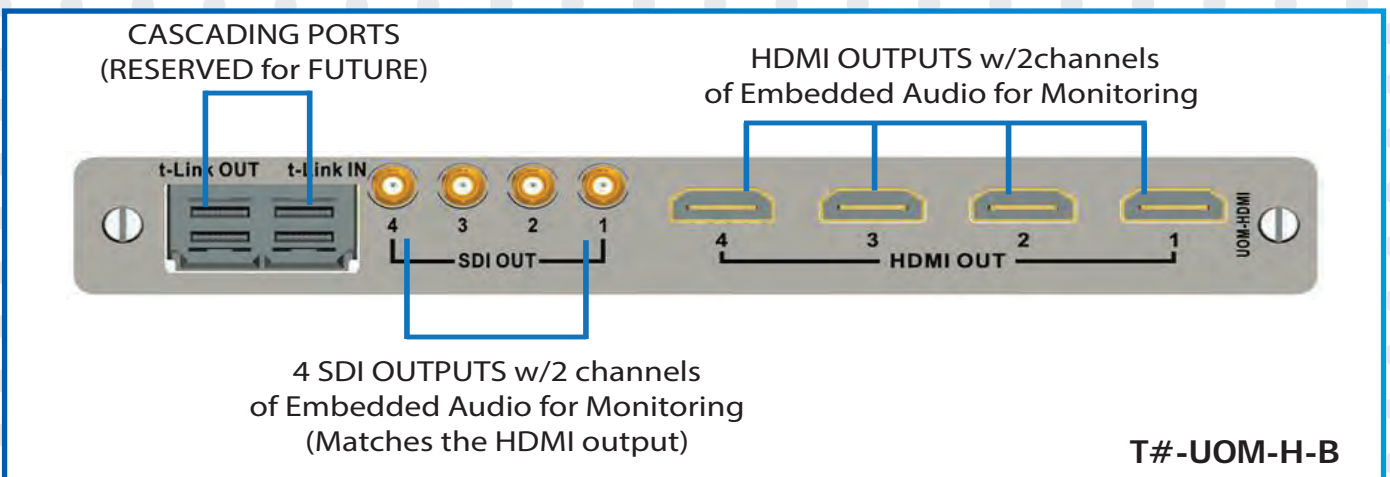
# TAHOMA T# (T-SHARP) MULTIVIEWERS

## OUTPUT BOARDS:

- T#-UOM-H-A (STANDARD)
  - 4 HDMI and 4 SDI outputs + control interfaces
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - IP, GPI/O, serial, 2 x LTC, AES and AA audio monitoring outputs and genlock

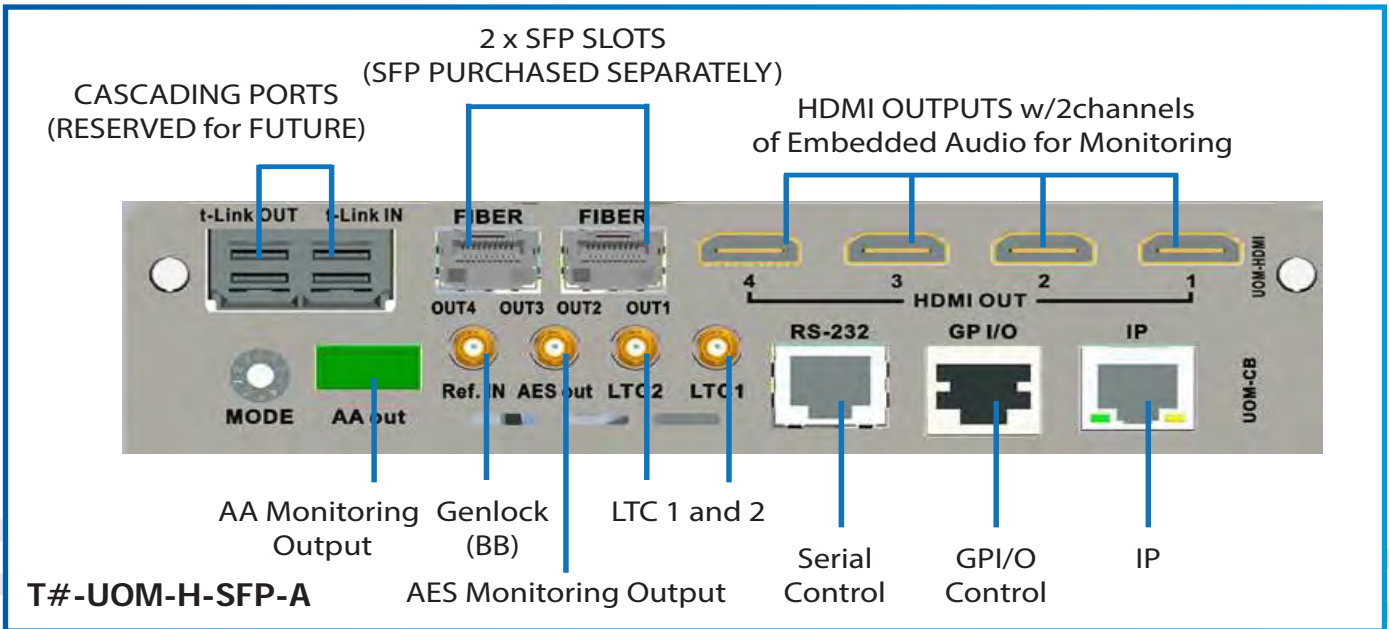


- T#-UOM-H-B (OPTION for 4 additional outputs)
  - 4 HDMI and 4 SDI outputs
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz

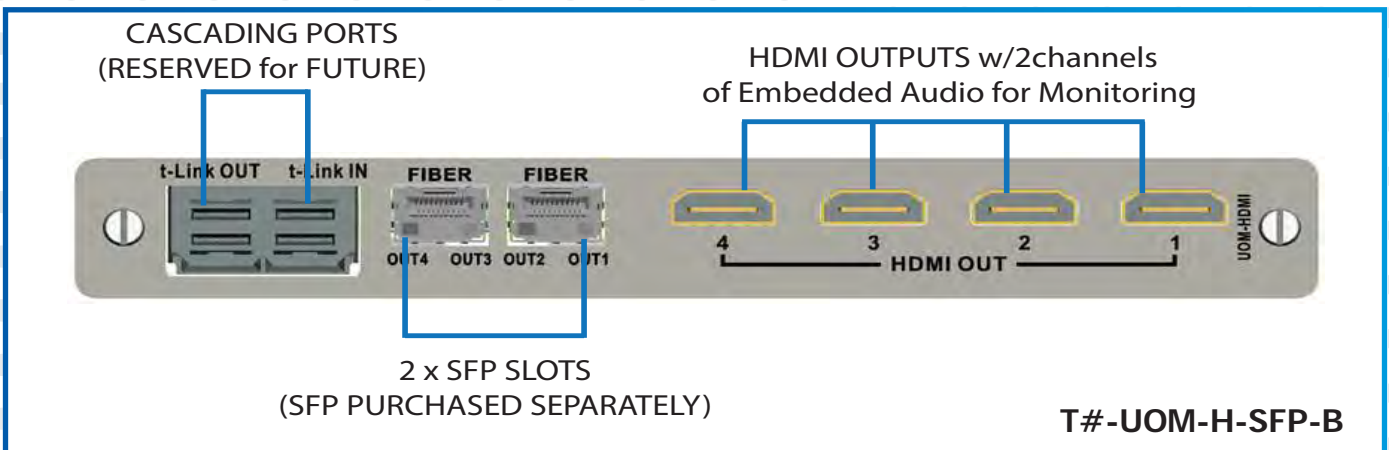




- T#-UOM-H-SFP-A (OPTION)
  - 4 HDMI output and 2 x SFP Slots + control interfaces
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - IP, GPI/O, serial, 2 x LTC, AES and AA audio monitoring outputs and genlock

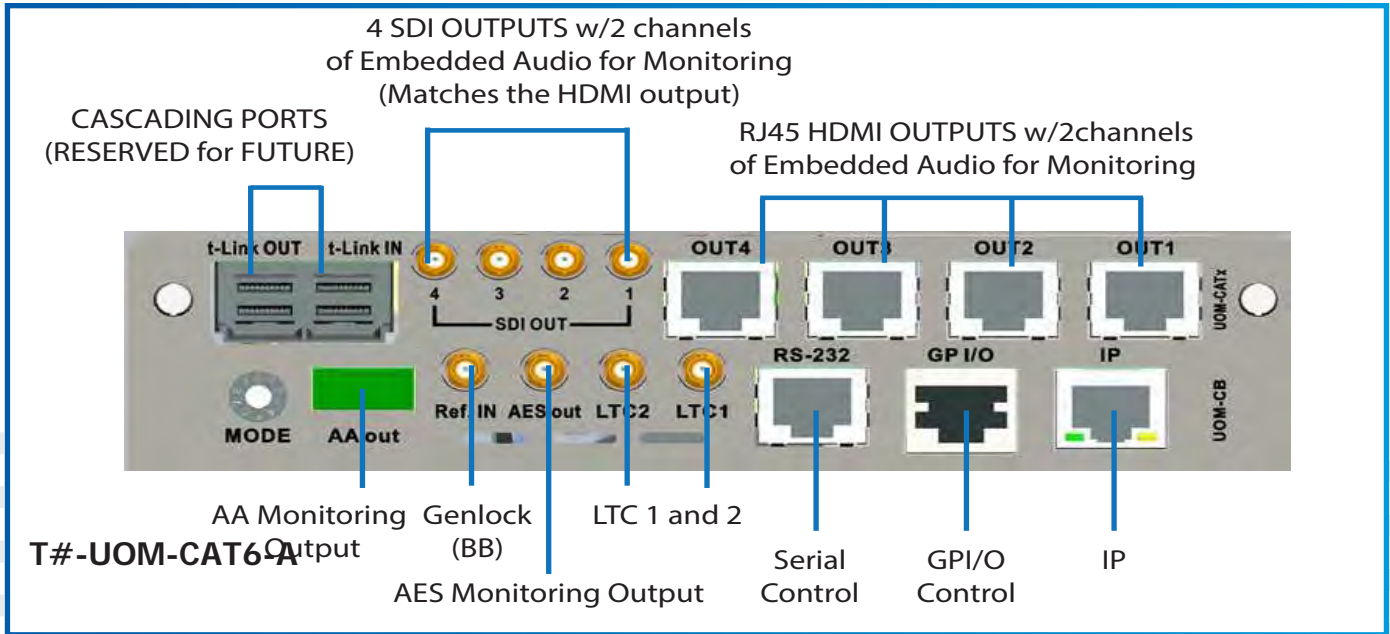


- T#-UOM-H-SFP-B (OPTION)
  - 4 HDMI output and 2 x SFP Slots
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz

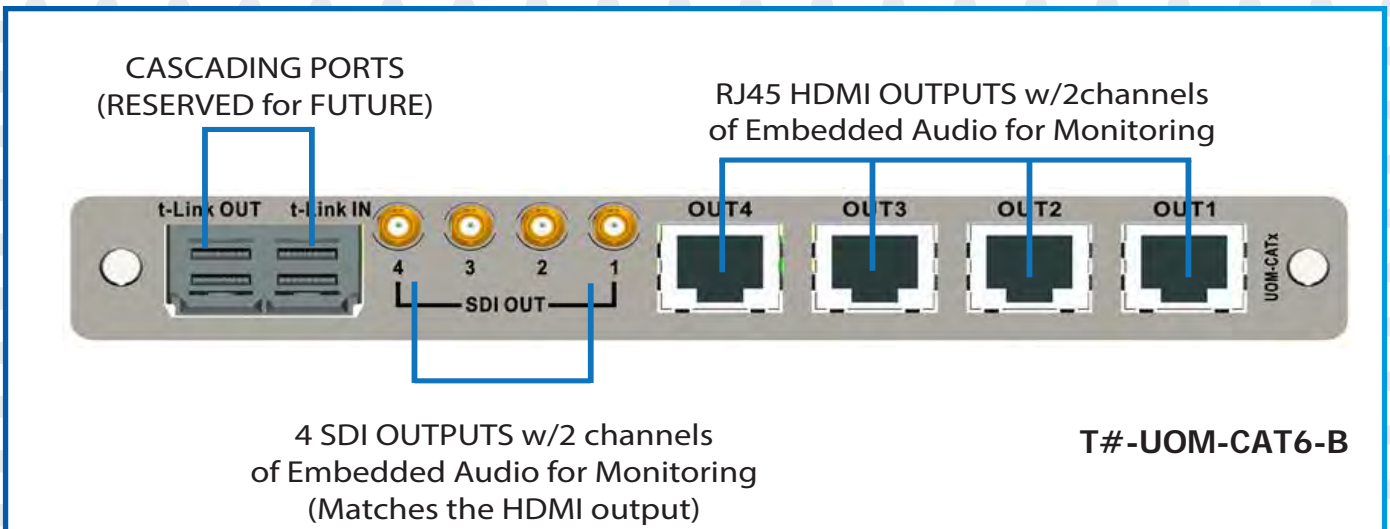


# TAHOMA T# (T-SHARP) MULTIVIEWERS

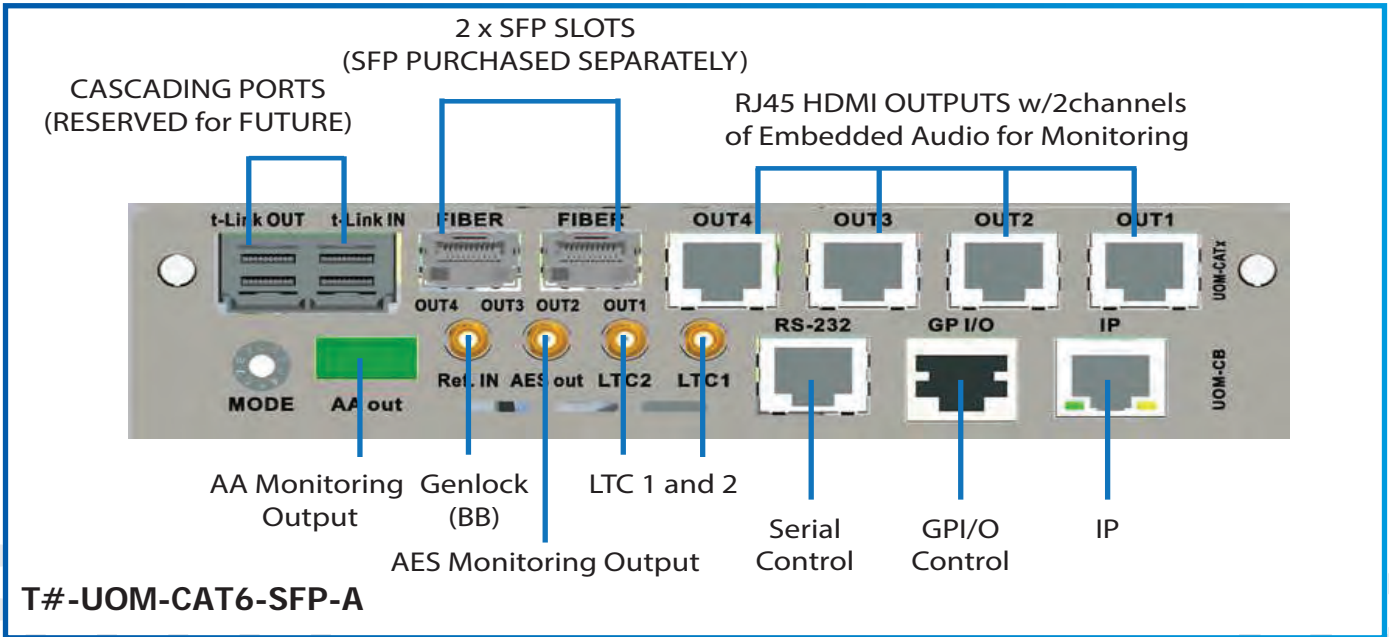
- T#-UOM-CAT6-A (OPTION)
  - 4 RJ45/CAT6 HDMI Extender and 4 SDI outputs + control interfaces
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - IP, GPI/O, serial, 2 x LTC, AES and AA audio monitoring outputs and genlock
  - Comes with 4 passive short-distance receivers up to 35 feet (10 meters)
  - Optional active long distance receivers up to 115 feet (35 meters)



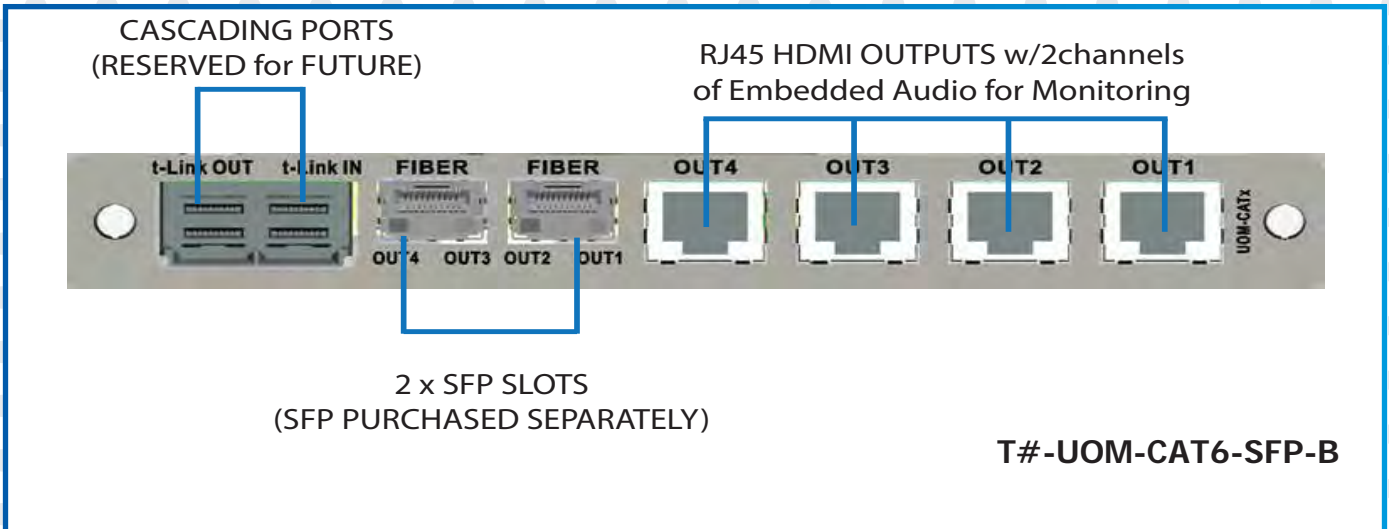
- T#-UOM-CAT6-B (OPTION)
  - 4 RJ45/CAT6 HDMI Extender and 4 SDI outputs
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - Comes with 4 passive short-distance receivers up to 35 feet (10 meters)
  - Optional active long distance receivers up to 115 feet (35 meters)



- T#-UOM-CAT6-SFP-A (OPTION)
  - 4 RJ45/CAT6 HDMI Extender and 2 x SFP Slots + control interfaces
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - IP, GPI/O, serial, 2 x LTC, AES and AA audio monitoring outputs and genlock
  - Comes with 4 passive short-distance receivers up to 35 feet (10 meters)
  - Optional active long distance receivers up to 115 feet (35 meters)

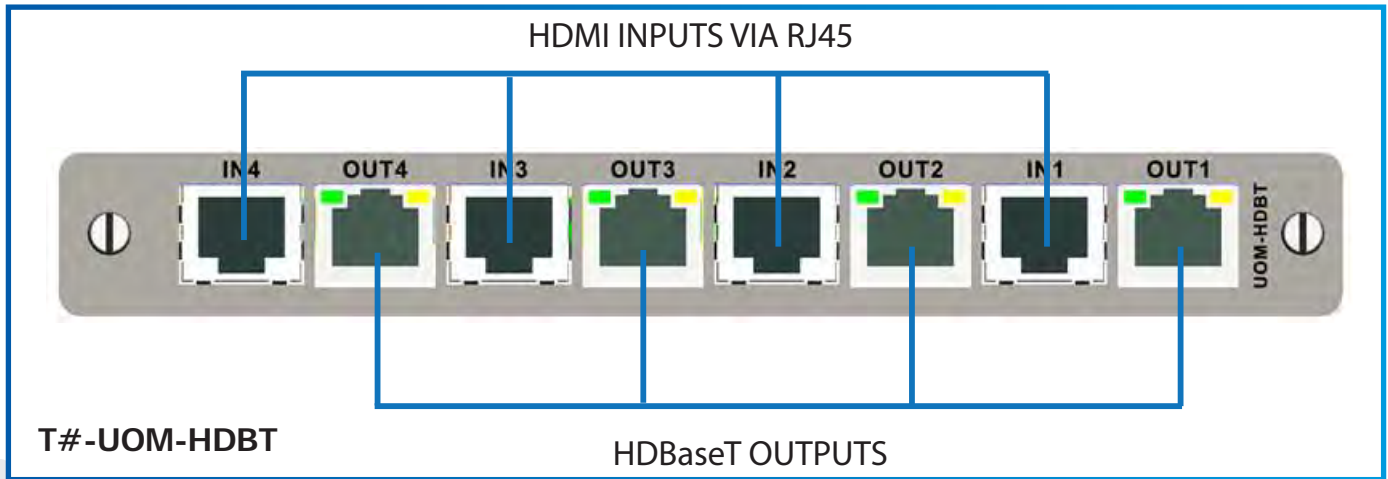


- T#-UOM-CAT6-B (OPTION)
  - 4 RJ45/CAT6 HDMI Extender and 4 SDI outputs
  - HDMI output resolution up to 1080p @50/60Hz
  - SDI output resolution up to 1080p @50/60Hz
  - Comes with 4 passive short-distance receivers up to 35 feet (10 meters)
  - Optional active long distance receivers up to 115 feet (35 meters)



# TAHOMA T# (T-SHARP) MULTIVIEWERS

- T#-UOM-HDBT (OPTION)
  - 4 x HDBaseT Extender output. Must be used with T#-UOM-CAT6-A/B or T#-UOM-CAT6-SFP-A/B
  - HDMI output resolution up to 1080p @50/60Hz



# SDI FIBER OPTIC RECEIVER

## SFP-FIB-SDI-CONV-RX

- Single channel 3G/HD/SD-SDI over Optic Fiber
- SFP-SDI-Rx that uses LC connectors
- Automatically reclocking at 2.97 Gbps, 1.485 Gbps and 270 Mbps
- Supports SMPTE 424 M, 292M, 259M and DVB-ASI
- Maximum distance up to 10 km

## SFP-FIB-SDI-CONV-Rx



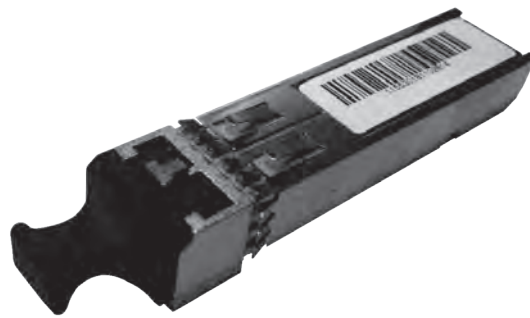
## SFP-FIB-SDI-Rx



	Rx
Input Formats	SMPTE 424M, SMPTE 292M, SMPTE 259M, DVB-ASI
Input Connector	LC Simplex Fiber Connector
Input Looping	N/A
Cable Equalization	N/A
Output Cable Reach	3G: 60m, HD-SDI: 125m SD-SDI: 300m
Output Connector	1 x BNC - 75 ohm
Jitter	< 0.2 UI
Rise/Fall time	135 ~ 800 ps
Overshoot	< 10%
Input Power	5V 4A DC
Power Consumption	10 Watts
Operating Temperature	0 to 40 C
Storage Temperature	-20 to 60 C
Operating Humidity	20 ~ 90% (non-condensing)

# DUAL SDI FIBER OPTIC TRANSMITTER - SFP MODULE FOR T#-UOM-X-SFP-A AND UOM-X-SFP-B

- Dual channel transmitter
- Supports SMPTE-424M, 292M, 259M and DVB-ASI
- For use with T# UIM-SFP rear module
- LC Simplex connectors - single mode
- Pluggable and hot swappable
- Supports 3G up to 10 km over a single fiber
- Single +3.3 power supply
- Low power consumption - 260 mA typical
- Complies with FCC, TUV and UL standards
- Lead free and RoHS compliant

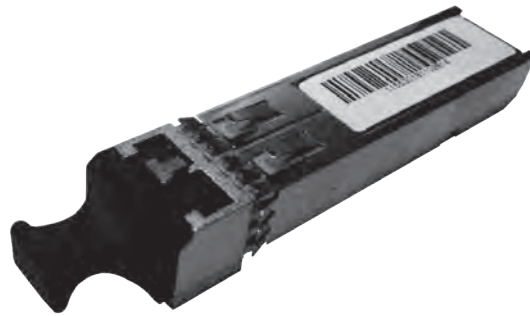


OPTICAL PERFORMANCE SPECIFICATION				
Paramter		Min	Typ	Max
Optical Power (dBm)		-8	-5	-3
Wavelength (nm)		1290	1310	1330
Linear Extinction Ratio		5.0	8	-
Intrinsic Jitter (ps)	2.97 Gb/s	-	45	80
	1.485 Gb/s	-	45	80
	270 Mb/s	-	45	80
Optical Signal Rise Time (Ps)	2.97 Gb/s	-	-	135
	1.485 Gb/s	-	-	270
	270 Mb/s	-	-	400
Optical Signal Fall Time (ps)	2.97 Gb/s	-	-	135
	1.485 Gb/s	-	-	270
	270 Mb/s	-	-	400

ELECTRICAL SPECIFICATION				
Paramter		Min	Typ	Max
Operating case temperature range (degree C)		0	-	70
Storage temperature range (degree C)		-40	-	85
Power supply voltage (V)		3.1	3.3	3.5
Power consumption (mA)		-	260	400

# DUAL SDI FIBER OPTIC RECEIVER - SFP MODULE FOR T#-UIM-SFP

- Dual channel transmitter
- Supports SMPTE-424M, 292M, 259M and DVB-ASI
- For use with T# UOM-SFP rear module
- LC Simplex connectors - single mode
- Pluggable and hot swappable
- Supports 3G up to 10 km over a single fiber
- Single +3.3 power supply
- Low power consumption - 200 mA typical
- Complies with FCC, TUV and UL standards
- Lead free and RoHS compliant



OPTICAL PERFORMANCE SPECIFICATION				
Paramter		Min	Typ	Max
Wavelength (nm)		1260	-	1620
Receiver Sensitivity (dBm)	2.97 Gb/s	-16	-	-
	1.485 Gb/s	-16	-	-
	270 Mb/s	-16	-	-
Overload (dBm)		-	-	-1
Loss of Signal Assertd (dBm)		-35	-	-
Loss of Signal De-asserted (dBm)		-	-	-16
Optical Hysteresis (dB)		0.5	2	-

ELECTRICAL SPECIFICATION				
Paramter		Min	Typ	Max
Operating case temperature range (degree C)		0	-	70
Storage temperature range (degree C)		-40	-	85
Power supply voltage (V)		3.1	3.3	3.5
Power consumption (mA)		-	200	300

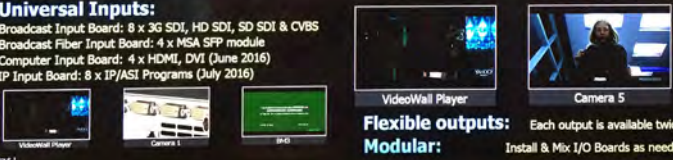
# TAHOMA T# (T-SHARP) MULTIVIEWERS

**T# Multiviewer Series**

**Three different chassis:**  
 Up to 16 x 4 in one RU  
 Up to 32 x 4 in two RU  
 Up to 64 x 8 in four RU



**Universal Inputs:**  
 Broadcast Input Board: 8 x 3G SDI, HD SDI, SD SDI & CVBS  
 Broadcast Fiber Input Board: 4 x MSA SFP module  
 Computer Input Board: 4 x HDMI, DVI (June 2016)  
 IP Input Board: 8 x IP/ASI Programs (July 2016)



**Flexible outputs:** Each output is available twice.  
**Modular:** Install & Mix I/O Boards as needed

OUTPUT 1



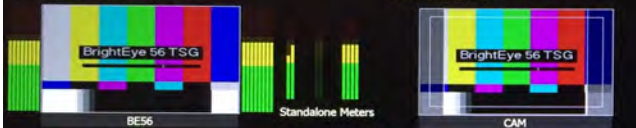
**New architecture:**  
 Source signal repetition across all outputs; Scaled Source Signal can be displayed many times on any output.



HDMI or HDMI over CAT 6 and 3G/HD SDI or over Fiber (Rear Output module dependant)  
 Move boards to a bigger chassis as your system grows

OUTPUT 2


**Audio Support:**  
 Decode the 16 SDI Embedded Audio  
 Display up to 256 meters per output  
 Analog / AES Stereo Mon. Output



**Safe Title / Safe Area Markers:**  
 Two sets of Markers per Window  
 Line and Shadow for Marker Set 1  
 Line for Marker Set 2

**UMDs & Labels:**  
 Two 32 Char. Labels per Window  
 Up to 20 Standalone Labels / Outp  
 Labels can be Static, Follow input or Dynamic (TSL protocol over IP)

**Tallies:**  
 GPI and TSL over IP control  
 Five Tally attributes:  
 2 x LED, Text, Blob & Border Color  
 Up to 4 Tally levels ctrl with TSL



**Live Event Monitor 1**

OUTPUT 3, 4, 5, 6 =





OUTPUT 7



OUTPUT 8

**Alarms:**  
Video Presence, Format, Frozen, Black detection  
Configurable Detection & Behavior  
Visual Alarms and GPI output parameters

**Analog & Digital Clocks/Counters:**  
Free running or Sync up to LTC, NTP  
Or use clocks as Up Down Counters  
Counter Ctrl via GPI, AXP Protocol

**Presets & Configuration:**  
Create & Save up to 30 Presets  
Recall them via GPI, AXP protocol  
over IP - HW & SW Panels  
JDirector: Java based cfg. App.

**Logos:**  
Download Bitmaps

**Up/Down Counter 00:00:00**

**Date & Time 2016/06/09 Thu PM 12:09:12**

**infoComm16**

**Live Event Monitor 2**

Countdown **00:00:00**

Camera 5 (VideoWall Player), MAC Mini, BM2, BE56, ASUS, Las Vegas

4 x 1080P (UHD)

# TAHOMA T# (T-SHARP) MULTIVIEWERS

SPECIFICATIONS			
<b>VIDEO INPUTS</b> (8 to 64 auto-detect 3G/HD/SD-SDI, CVBS)		<b>IP: ASI/H.264</b>	
Connectors	HD BNC	Signal	ASI/H.264
<b>3G-SDI</b>		Compliant to ISO/IEC 13818-1 MPEG-2 Transport Stream Specification	
Signal	SMPTE 424M-2006 Level A and B	Demultiplexing incoming SPTS/MPTS	
Formats	1920x1080p60 Hz 1920x1080p59.94 Hz 1920x1080p50Hz	MPEG2 MP@HL, resolution up to 1080P/1080i@60Hz	
Audio	SMPTE 299M	Connectors	4 HDBNC (2 in 2 out), 1 RJ-45
Equalization	120 m at 3G		
Return Loss	>15db up 1.5GHz >10db from 1.5GHz to 3GHz	<b>MULTIVIEWER OUTPUTS</b>	
Jitter	<0.3UI	HDMI	4 or 8
<b>HD-SDI</b>		Connector	HDMI Type A, HDMI Extender out (RJ45) HDBaseT (RJ45)
Signal	4:2:2 SMPTE 292M-C (1.5Gbps)	Cable Reach	15 ft for HDMI, 35 ft RJ45 with passive receiver
Formats	720p29.97 Hz, 720p25Hz 720p24Hz, 720p59.94Hz 729p50Hz, 1080i59.94Hz 1080i29.97Hz (PSF), 1080p29.97Hz 1080i50Hz, 1080i25 (PSF) 1080p25Hz, 1080p23.98Hz/24Hz 1080i50Hz	Signal Path	8/10 bit output
Audio	SMPTE 299M	Format	1080P Supports 50/60 and 59.94 Hz
Equalization	140m at 1.5 Gbps (Belden 1698A)	3G/HD-SDI	4 or 8
Return Loss	>15db up to 1.5 GHz	Signal	3G/HD-SDI SMPTE 424M and 292M
Jitter	<0.2 UI	Return Loss	>15db up 1.5GHz >10db from 1.5GHz to 3G
<b>SD-SDI</b>		Jitter	3G: <0.3 UI, 1.5 <0.21 UI
Signal	4:2:2 SMPTE 259M-C (270 mbps)	<b>LTC INPUT</b>	
Format	525 and 625	Signal	<b>SMPTE 12M-1995 (EBU3259-E)</b>
Audio	SMPTE 274M-1994	Level	500 mVp-p to 10 Vp-p
Equalization	400m at 270 Mbps (Belden 1694A)	Impedance	> 10k ohm
Return Loss	> 15db up to 270 MHz	Refresh Rate	50/59.94 Hz
Jitter	< 0.2UI	<b>COMMUNICATION</b>	
<b>COMPOSITE</b>		ETHERNET	
Signal	NTSC (SMPTE-170M) PAL (ITU624-2)	Signal	10/100/1000 Base-T
Signal Level	1V nominal	<b>SERIAL PORT</b>	
DC Offset	0V, + - 0.1V	Signal	RS-232
Impedance	75	Connector	RJ-45
Return Loss	40db up to 5MHz	<b>ANALOG AUDIO OUT</b>	
<b>HDMI</b>		Impedance	< 600 ohm
Signal	HDMI/DVI (with converter cable)	Connector	Phoenix
Max Resolution	1920x1080/1920x1200 @ 60Hz	<b>VIDEO PROCESSING PERFORMANCE</b>	
Audio	4 channels of embedded audio	Signal Path	8 bit Ycbcr to 24 bit RGB
Connector	4 x HDMI Type A female	Processing delay	1 frame in genlock mode, 1-2 frame in non-genlock mode
<b>REFERENCE</b>			
<b>External</b>		BB	
		Connector	HD BNC

## SPECIFICATIONS

SPECIFICATIONS			
<b>T# (1 RU) FRAME</b>			
Power supply	Optional External Redundant Power Supply		
Input voltage	90 - 240 V		
Frequency	50 / 60 Hz		
Power	150 W max		
Dimension	446 x 455 x 44 mm		
<b>TEMPERATURE</b>			
Range	0 - 40 C		
Weight	7.5 kg		
<b>COMMUNICATIONS</b>			
Ports	Ethernet 10/100 Base-T		
Alarm	GPI contacts		
<b>T# (2RU) FRAME</b>			
<b>Power supply</b>		<b>GPI In</b>	
Power supply	Built-in redundant power supplies	Connectors	RJ50
Input voltage	90 - 240 V	Number of inputs	16 per input card
Frequency	50 / 60 Hz	Pull up voltage	+5 V
Power	200 W max	Source current	2 mA
Dimension	446 x 455 x 87		
<b>TEMPERATURE</b>		Activation	0.1 V max
Range	0 - 40 C	Over Voltage	+6.5 V
Weight	10.3 kg	Pulse duration	8 ms min
<b>COMMUNICATIONS</b>		<b>GPI BI-DIRECTIONAL</b>	
Ports	Ethernet 10/100 Base-T	Connector	RJ50
Alarm	GPI Contacts	Number of I/O	8
		<b>INPUT MODE</b>	
<b>T# (4RU) FRAME</b>		Pull-up voltage	+5V
Power Supply	Hot swappable redundant power supplies	Source current	2 mA
Input voltage	90 - 240 V		
Frequency	50 / 60 Hz	Activation	0.1 V max
Power	500 W max	Over voltage	+6.5V
Dimensions	446 x 455 x 87	Pulse Duration	8 ms min ??
<b>TEMPERATURE</b>		<b>OUTPUT MODE</b>	
Range	0 - 40C	Current	50 mA max
Weight	19.6 kg	Reverse current	-100 mA max
<b>COMMUNICATIONS</b>			
Ports	Ethernet 10/100 Base-T		
Alarm	GPI contacts		

# CRESCENT - MI-16

## COST EFFECTIVE 16X1 MULTIVIEWER

### Key Features

- Low latency - single frame processing delay
- Low Energy - only uses 15 W of power
- Accepts 16 auto-detect 3G/HD/SD-SDI inputs
- 16 Passive input loop through
- Windows can be sized and moved freely
- Decode up to 16 embedded audio per SDI input
- Total of 64 audio meters
- 2 simultaneous and identical HDMI and SDI outputs
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, 2 customizable logos
- 32 GPIs for tallies, count up/down triggers or preset recall
- 2 digital and 2 analog clocks can be sync'd with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- Audio monitoring output - Stereo, AES, Embedded SDI and HDMI
- Optional redundant power supply
- 3 year limited warranty



### Accessories

#### Standard

- Rack mount
- 4 x RJ50 to DB9 for GPI
- 4 x breakout terminal blocks
- RJ45 to DB9 for serial
- Analog audio breakout cable
- CD (software, manual)

#### Options

- Redundant power supply



RJ50-DB9: GPI Adapter



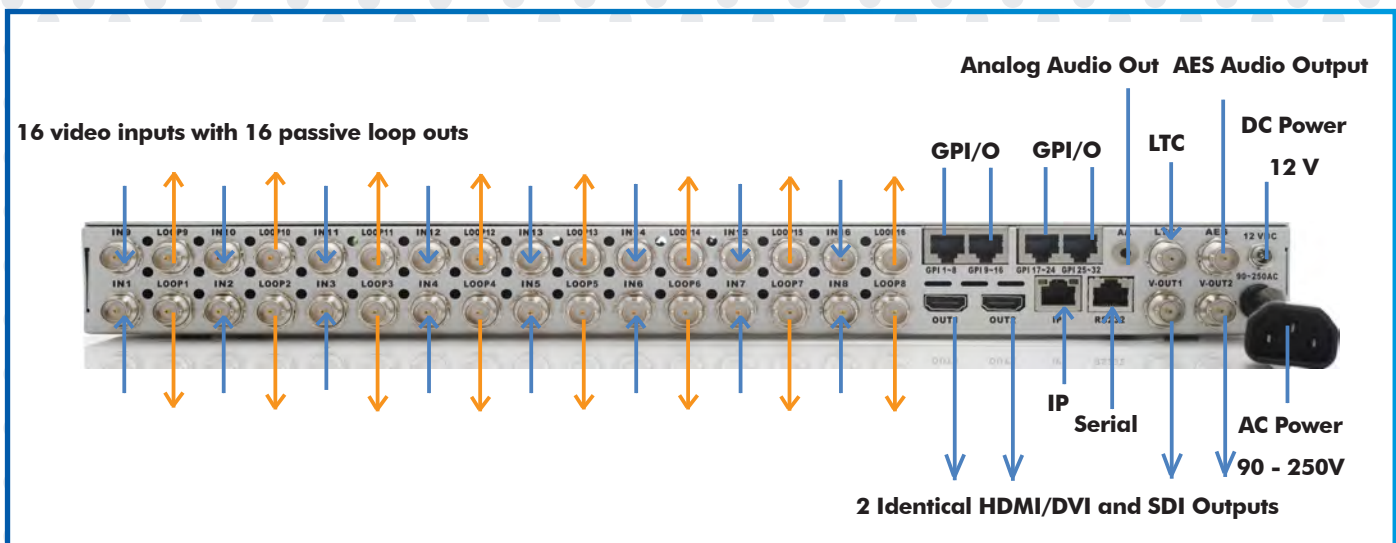
RJ45-DB9: RS232 Adapter



DB9 GPI Breakout



Analog Audio Breakout Cable



# CRESCENT - MI-16+ (PLUS) COST EFFECTIVE DUAL OUTPUT (8+8) MULTIVIEWER

## Key Features

- Low latency - single frame processing delay
- Low Energy - only uses 15 W of power
- Accepts 16 auto-detect 3G/HD/SD-SDI inputs
- 16 Passive input loop through
- Windows can be sized and moved freely
- Decode up to 16 embedded audio per SDI input
- Total of 128 audio meters (64 meters per output)
- 2 separate independent outputs with 8 inputs each
- Simultaneous HDMI and SDI outputs
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, 4 customizable logos
- 32 GPIs for tallies, count up/down trigger or preset recall
- 2 digital and 2 analog clocks can be sync'd with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- Audio monitoring - Stereo, AES, Embedded SDI and HDMI
- Optional redundant power supply
- 3 year limited warranty



## Accessories

### Standard

- Rack mount
- 4 x RJ50 to DB9 for GPI
- 4 x breakout terminal blocks
- RJ45 to DB9 for serial
- Analog audio breakout cable
- CD (software, manual)

### Options

- Redundant power supply



RJ50-DB9: GPI Adapter



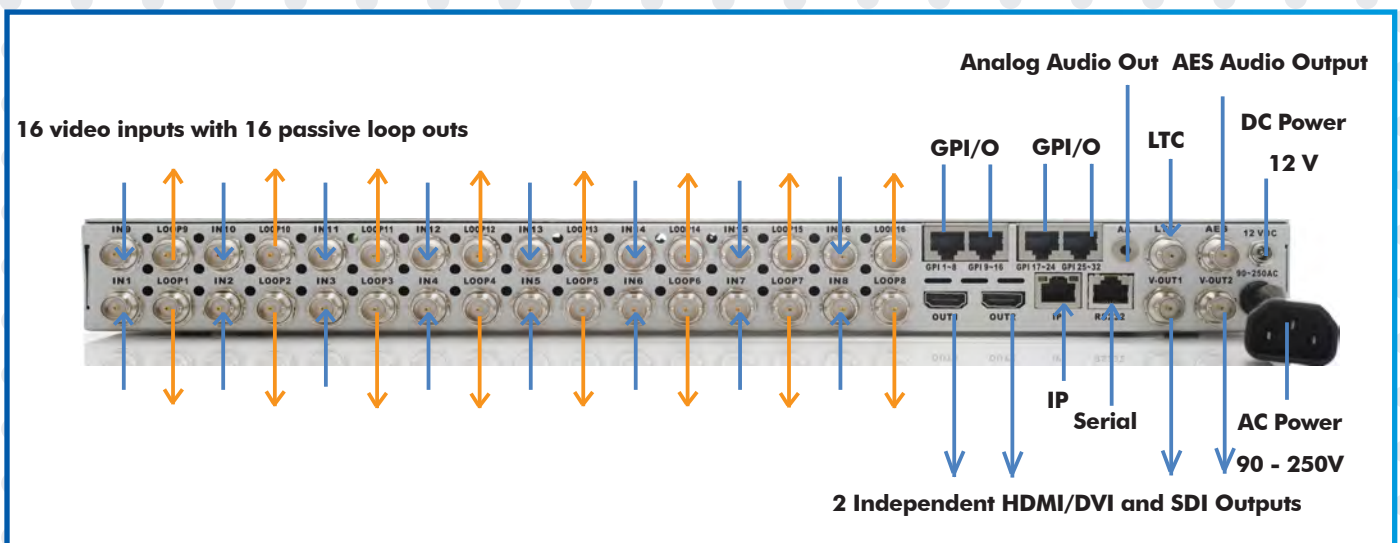
RJ45-DB9: RS232 Adapter



DB9 GPI Breakout



Analog Audio Breakout Cable



# CRESCENT - MI-16# (SHARP) COST EFFECTIVE DUAL OUTPUT (16X2) MULTIVIEWER

## Key Features

- Low latency - single frame processing delay
- Low Energy - only uses 15 W of power
- Accepts 16 auto-detect 3G/HD/SD-SDI inputs
- Passive input loop through
- Every input can be duplicated up to 16 times
- Every input is available to both outputs
- Decode up to 16 embedded audio per SDI input
- Total of 128 audio meters (64 meters per output)
- 2 independent outputs of HDMI and SDI
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, 4 customizable logos
- 32 GPIs for tallies, count up/down triggers or preset recall
- 2 digital and 2 analog clocks can be sync'd with LTC or NTP
- Borders can be turned on or off
- Safe area markers
- Visual Alarm tags for video/audio alarm detection
- Audio monitoring - Stereo, AES, Embedded SDI and HDMI
- Optional redundant power supply
- 3 year limited warranty



## Accessories

### Standard

- Rack mount
- 4 x RJ50 to DB9 for GPI
- 4 x breakout terminal blocks
- RJ45 to DB9 for serial
- Analog audio breakout cable
- CD (software, manual)

### Options

- Redundant power supply



RJ50-DB9: GPI Adapter



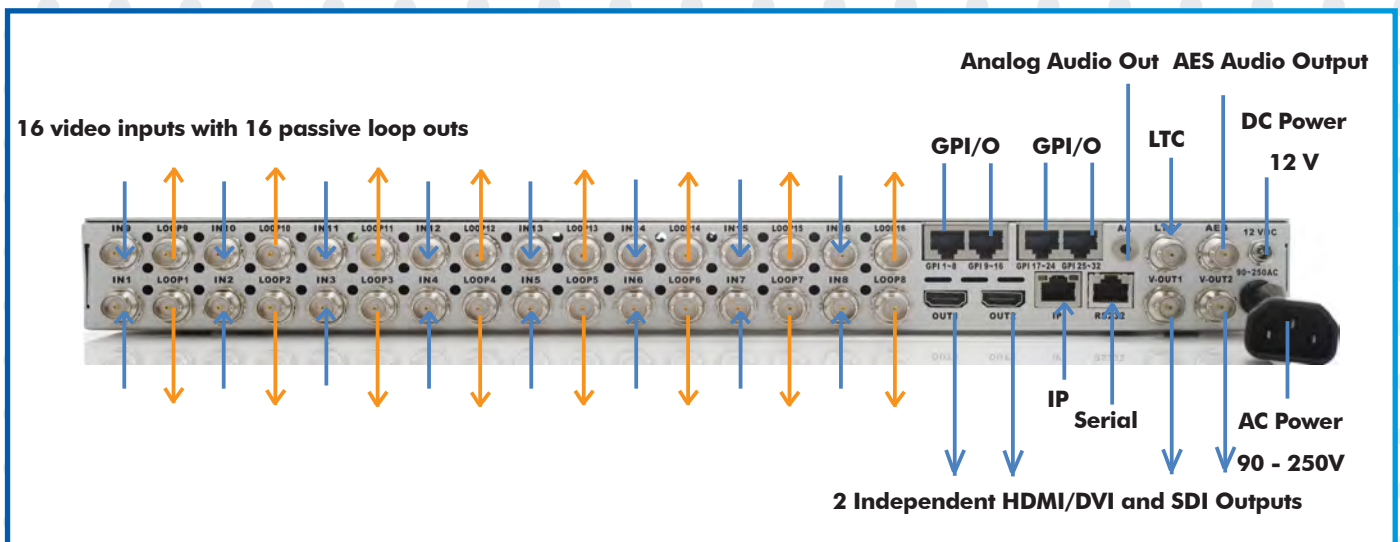
RJ45-DB9: RS232 Adapter



DB9 GPI Breakout



Analog Audio Breakout Cable



Mi-16 SPECIFICATIONS			
<b>Inputs</b>	16 3G SDI Level A&B,HD/SD-SDI	<b>Video Outputs</b>	2 identical sets of HDMI & SDI
<b>Loop outs</b>	16 passive loop outs	<b>Audio Outputs</b>	AES and Analog audio, embedded SDI and HDMI
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Total Windows</b>	16	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 32 inputs with RJ50 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 bps Protocol: TSL, TSI, AXP
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Electrical</b>	15W, 90-250V 50/60 Hz
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Power</b>	90-250 AC / 12 DC	<b>Size</b>	1 RU, 25 cm (10")

Mi-16+ SPECIFICATIONS			
<b>Inputs</b>	16 3G SDI Level A&B, 3G/HD/SD-SDI	<b>Video Outputs</b>	2 independent sets of HDMI & SDI
<b>Loop outs</b>	16 passive loop outs	<b>Audio Outputs</b>	AES and Analog audio, embedded SDI and HDMI
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Total Windows</b>	16	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 32 inputs with RJ50 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 Protocol: TSL, TSI, AXP
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Electrical</b>	15W, 90-250V 50/60 Hz
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Power</b>	90-250 AC / 12 DC	<b>Size</b>	1 RU, 25 cm (10")

Mi-16# SPECIFICATIONS			
<b>Inputs</b>	16 3G SDI level A&B, HD/SD-SDI	<b>Video Outputs</b>	2 independent sets of HDMI, SDI outputs
<b>Loop outs</b>	16 passive loop outs	<b>Audio Outputs</b>	AES and Analog audio, embedded SDI and HDMI
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Total Windows</b>	32+	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 32 inputs with RJ50 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Electrical</b>	15W, 90-250V 50/60 Hz
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Power</b>	90-250 AC / 12 DC	<b>Size</b>	1 RU, 25 cm (10")

# CRESCENT - MX-32

## COST EFFECTIVE QUAD OUTPUT (32X4) MULTIVIEWER

### Key Features

- Low latency - single frame processing delay
- Low energy - only uses 75 W of power
- Compact - 2RU
- Accepts 32 auto-detect 3G Level A&B /HD/SD-SDI inputs
- Every input can be duplicated up to 32 times
- Every input is available on all four outputs
- Decode up to 16 embedded audio per SDI input
- Total of 256 audio meters (64 per output)
- 4 independent outputs of HDMI and SDI
- Ethernet for configuration and external control
- Two levels of GPI tally and three levels of serial tally
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 64 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- Embedded HDMI or SDI audio for audio monitoring
- 3 year limited warranty



### Accessories

#### Standard

- Rack mount
- 8 x RJ50 to DB9 for GPI
- 8 x breakout terminal blocks
- 2 x RJ45 to DB9 for serial
- CD (software, manual)



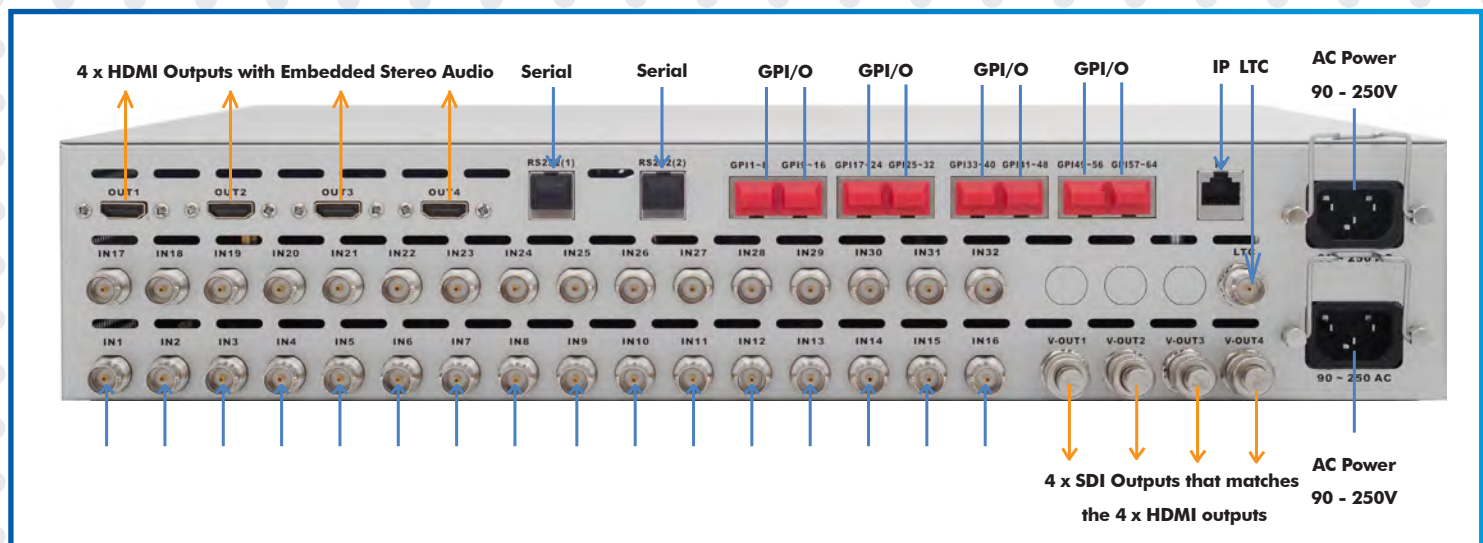
RJ50-DB9: GPI Adapter



RJ45-DB9: RS232 Adapter



DB9 GPI Breakout





### Mx-32 SPECIFICATIONS

<b>Inputs</b>	32 3G Level A&B, HD/SD-SDI	<b>Video Outputs</b>	4 independent sets of HDMI, SDI outputs
		<b>Audio Outputs</b>	Embedded HDMI and SDI out
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Total Windows</b>	Maximum of 128 Windows	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 64 inputs with RJ50 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 bps Protocol: TSL, TSI, AXP
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Electrical</b>	75W, 90-250V 50/60 Hz
<b>Alarms</b>	No audio, audio high/low, no video, video format	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Power</b>	Redundant 90-250 AC	<b>Size</b>	2 RU, 48.5 cm (19")

# CRESCENT - MX-32-4KDP COST EFFECTIVE UHD MULTIVIEWER

## Key Features

- Low latency - single frame processing delay
- Low energy - only uses 85 W of power
- Accepts UHD(Quad 3G)/3G/HD/SD-SDI inputs
- UHD Display Port (3840x2160p) output
- Decode up to 16 embedded audio per SDI input
- Total of 128 audio meters
- 4 SDI outputs (One per quadrant)
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 64 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- Optional redundant power supply
- 3 year limited warranty



## Accessories

### Standard

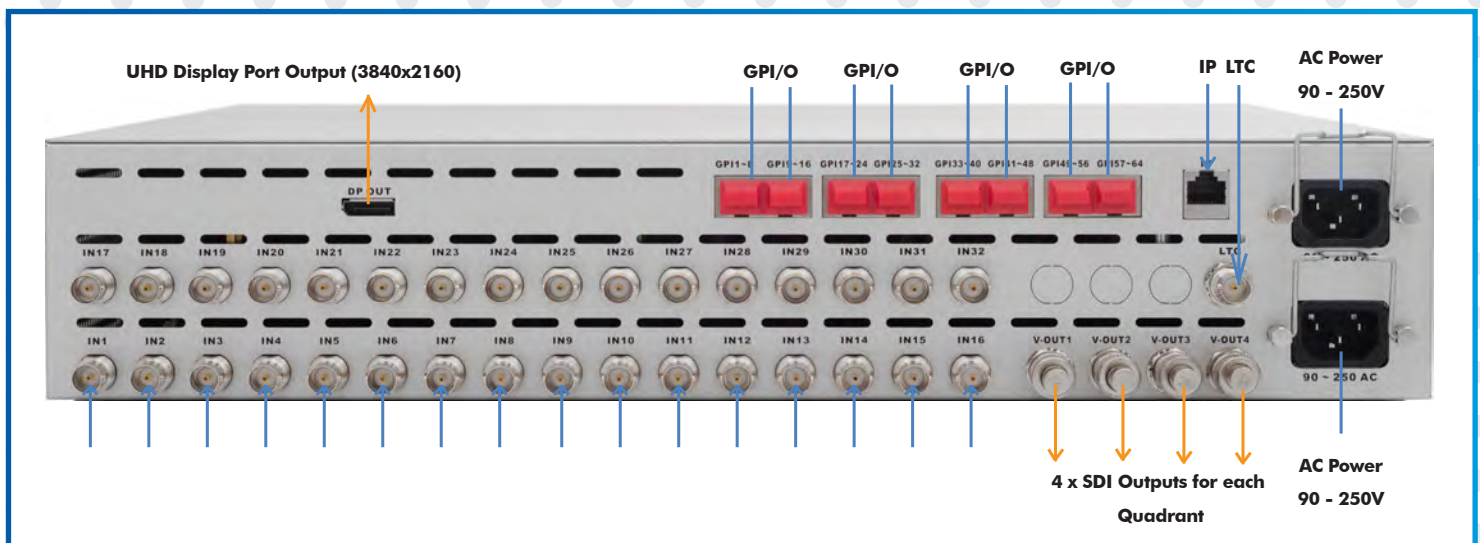
- Rack mount
- 8 x RJ50 to DB9 for GPI
- 8 x breakout terminal blocks
- CD (software, manual)



RJ50-DB9: GPI Adapter



DB9 GPI Breakout



### Mx-32-4KDP SPECIFICATIONS

<b>Inputs</b>	UHD (Quad 3G), 3G A&B/HD/SD-SDI Each UHD input will consume 4 SDI inputs	<b>Video Outputs</b>	4 SDI outputs (one per quadrant)
		<b>Audio Outputs</b>	Embedded HDMI and SDI out
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	3840x2160p 50/60Hz
<b>Total Windows</b>	Maximum of 32 Windows	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 64 inputs with RJ50 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Not available
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Electrical</b>	85W, 90-250V 50/60 Hz
<b>Alarms</b>	No audio, audio high/low, no video, video format	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Power</b>	Redundant 90-250 AC	<b>Size</b>	2 RU, 48.5 cm (19")

# OG-MICRO-Q

## SIMPLE COMPACT VIDEO QUAD SPLIT

### Key Features

- openGear 3.0 card-based form factor
- Dashboard control enabled
- 4 auto-detect 3G/HD/SD-SDI, PAL/NTSC inputs
- Low power consumption - 12W
- Fixed Quad Split, each window can go full screen
- Single frame processing delay
- Decode up to 8 embedded audio per SDI input
- Display up to 8 audio meters per window
- Ethernet for configuration, dynamic labels & Tallies (TSL)
- Simultaneous HDMI/DVI and SDI outputs
- 2 GPI tallies per window
- 8 GPI contacts, can be configured for tally or ASCII protocol
- Borders can be turned on or off
- One 32 characters label per window
- Text and background colors have adjustable transparency
- Safe area markers
- Visual Alarm tags for audio and video presence
- Dynamic (TSL) UMD/Label
- Stereo analog audio monitoring output
- HDMI and SDI outputs have embedded stereo audio pair
- 5 year limited warranty



### Rear Module Options (Occupies 2 Slots)

#### OG-MicroQ-RM

- 4 x BNC Input
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

#### Standard Accessories

- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)

#### OG-MicroQ-RMx

- 4 x BNC Input
- 1 x BNC Output
- 1 x RJ45 (Extended HDMI Output)
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

#### Standard Accessories

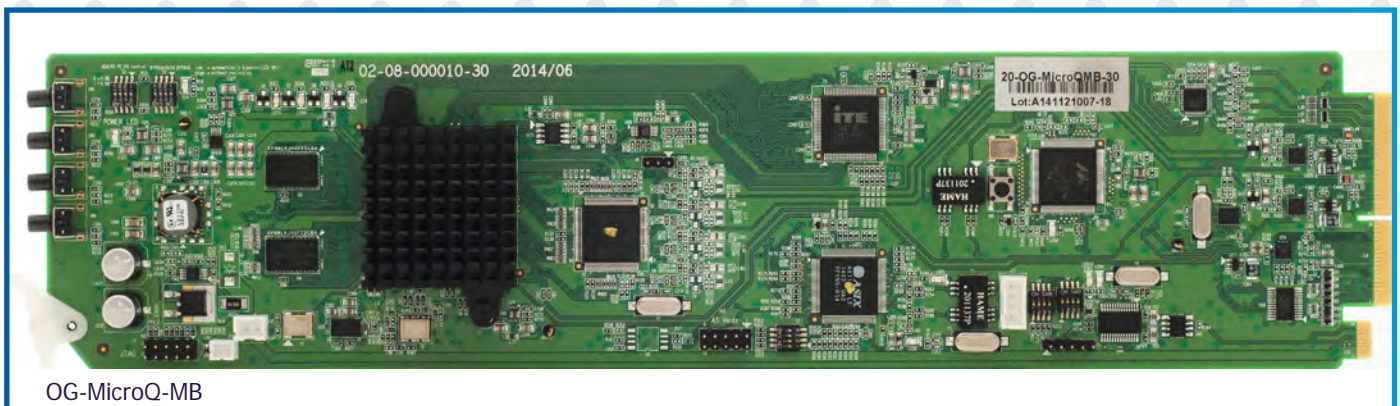
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 1 x 15 ft CAT6 cable
- 1 x RJ45 to HDMI (HDMI-SR)
- 1 x RJ45 to DVI (DVI-SR)

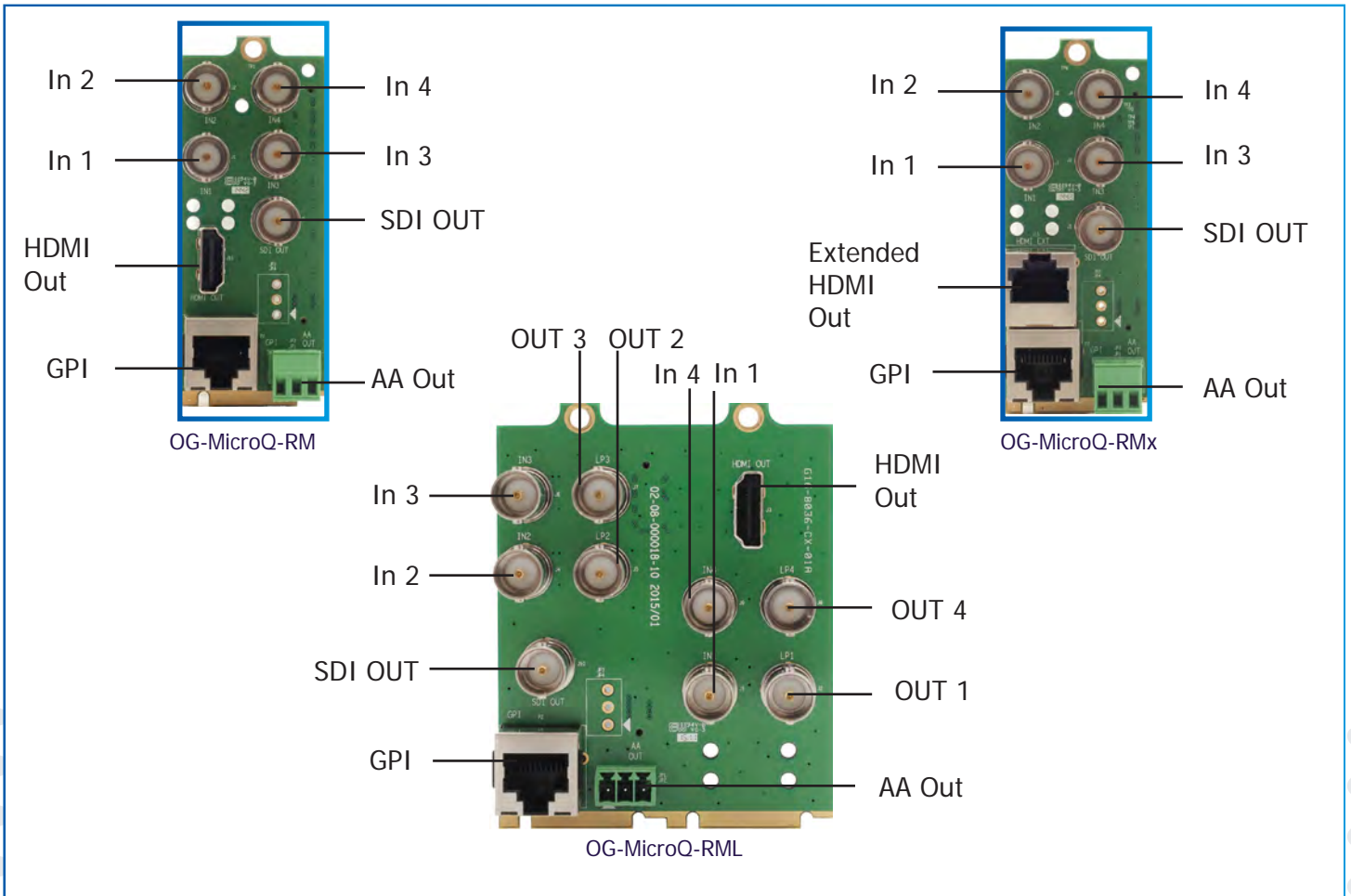
#### OG-MicroQ-RML

- 4 x BNC Input
- 4 x BNC Looping Output
- 1x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

#### Optional Accessories for RMx

- HDMI-1-R  
(Active HDMI Receiver that supports 1080p resolution up to 115 ft /35m)
- DVI-1-LR  
(Active DVI Receiver that supports 1080p resolution up to 115 ft /35m)
- VGA-Rec  
(VGA output receiver that supports 1080p resolution up to 35 ft /10m)





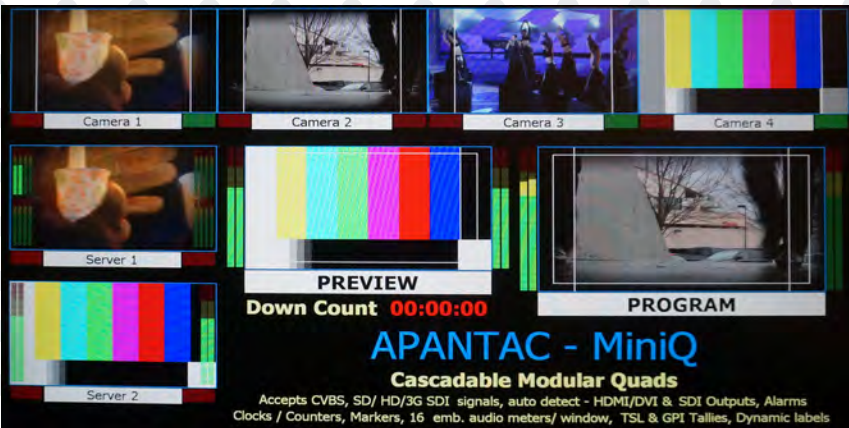
- OG-MicroQ-SET-1: OG-MicroQ-MB + OG-MicroQ-RM
- OG-MicroQ-SET-2: OG-MicroQ-MB + OG-MicroQ-RMx
- OG-MicroQ-SET-3: OG-MicroQ-MB + OG-MicroQ-RML

SPECIFICATIONS			
<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI
<b>Inputs</b>	3G/HD/SD-SDI/Composite	<b>HDMI (OG-MicroQ-RM)</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Serial Digital</b>	SMPTE 424M 292M, 259M	<b>RJ45 (OG-MicroQ-RMx)</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option: HDMI-1-R)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>SDI</b>	Matching the HDMI output resolution up to 3G
<b>Return Loss</b>	> 15db up to 1.485 Gbps, > 10db up to 3G	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>Embedded Audio</b>	SMPTE-272M-A	<b>GPI</b>	8 for tally or AXP (ASCII command)
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	100 Base-T, TSL, AXP_Lite protocol
<b>Signal Level</b>	1V nominal	<b>Power</b>	12W
<b>DC Offset</b>	0V, + - 0.1V		
<b>Impedance</b>	75 ohm		
<b>Return Loss</b>	40db up to 5MHz		

# OG-MINI-Q CASCADABLE VIDEO QUAD SPLIT

## Key Features

- openGear 3.0 card-based form factor
- Dashboard control enabled - for simple configuration
- 4 auto-detect 3G/HD/SD-SDI, PAL/NTSC inputs
- Low power consumption - 15W
- Up to 10 modules can be cascaded together
- Up to 40 inputs (windows) on a single openGear frame
- Single frame processing delay
- Decode up to 16 embedded audio per SDI input
- Ethernet for configuration
- Dynamic UMD/labels & Tallies (TSL)
- Simultaneous HDMI/DVI and SDI outputs
- 2 GPI tallies per window
- 8 GPI contacts, can be configured for tally or ASCII protocol
- Built-in digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Text and background colors have adjustable transparency
- Safe area markers
- Visual Alarm tags for video/audio alarm detection -  
no audio, audio high/low, no video, video black, video frozen
- Stereo analog audio monitoring output
- 5 year limited warranty



## Rear Module Options (Occupies 2 Slots)

### OG-MiniQ-RM

- 4 x BNC Input
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Standard Accessories

- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)

### OG-MiniQ-RMx

- 4 x BNC Input
- 1 x BNC Output
- 1 x RJ45 (Extended HDMI Output)
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Standard Accessories

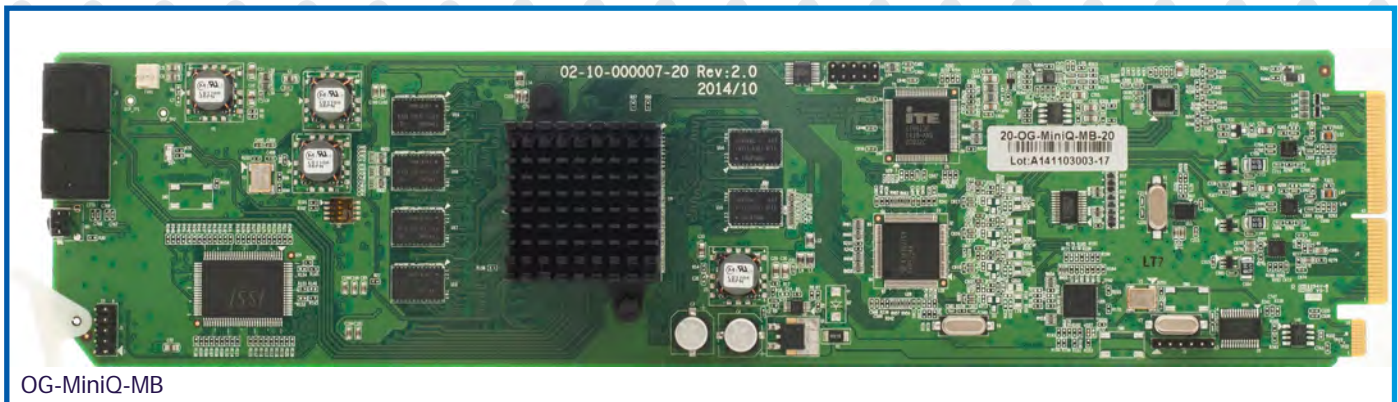
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 1 x 15 ft CAT6 cable
- 1 x RJ45 to HDMI (HDMI-SR)
- 1 x RJ45 to DVI (DVI-SR)

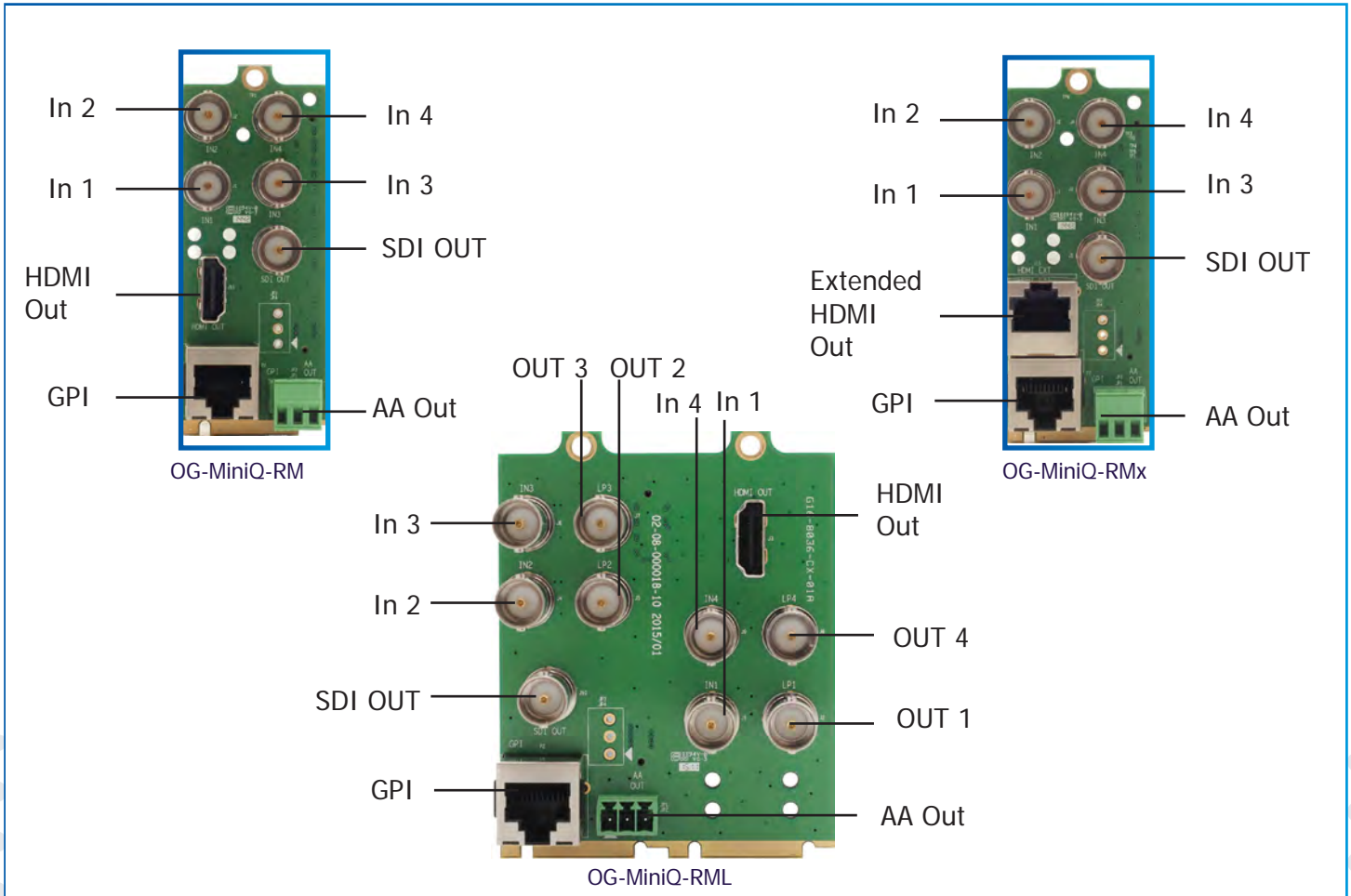
### OG-MiniQ-RML

- 4 x BNC Input
- 4 x BNC Looping Output
- 1x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Optional Accessories for RMx

- HDMI-1-R  
(Active HDMI Receiver that supports 1080p resolution up to 115 ft /35m)
- DVI-1-LR  
(Active DVI Receiver that supports 1080p resolution up to 115 ft /35m)
- VGA-Rec  
(VGA output receiver that supports 1080p resolution up to 35 ft /10m)





## How to Order

- OG-MiniQ-SET-1: OG-MiniQ-MB + OG-MiniQ-RM
- OG-MiniQ-SET-2: OG-MiniQ-MB + OG-MiniQ-RMx
- OG-MiniQ-SET-3: OG-MiniQ-MB + OG-MiniQ-RML

SPECIFICATIONS			
<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI
<b>Inputs</b>	3G/HD/SD-SDI/Composite	<b>HDMI (OG-MiniQ-RM)</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Serial Digital</b>	SMPTE 424M 292M, 259M	<b>RJ45 (OG-MiniQ-RMx)</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option: HDMI-1-R)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>SDI</b>	Matching the HDMI output resolution up to 3G
<b>Return Loss</b>	> 15db up to 1.485 Gbps, > 10db up to 3G	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>Embedded Audio</b>	SMPTE-272M-A	<b>GPI</b>	8 for tally or AXP (ASCII command)
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	1000 Base-T, TSL, AXP_Lite protocol
<b>Signal Level</b>	1V nominal	<b>Power</b>	15W
<b>DC Offset</b>	0V, + - 0.1V		
<b>Impedance</b>	75 ohm		
<b>Return Loss</b>	40db up to 5MHz		

## TAHOMA OG-MI-9 (OPENGear)

## 9 INPUT OPENGear MULTIVIEWER CARD WITH SDI OUTPUT

## Key Features

- openGear 3.0 card-based form factor
- Low latency - single frame processing delay
- Low energy - only uses 15 W of power
- Accepts 9 auto-detect 3G Leval A&B /HD/SD-SDI inputs
- Windows can be sized and moved freely
- 1 SDI output in 1080i/P 50/60Hz with embedded audio
- Decode up to 16 embedded audio per SDI input
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 9 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- 5 year limited warranty

## Rear Module Options

## OG-Mi-9-RM (2 slots)

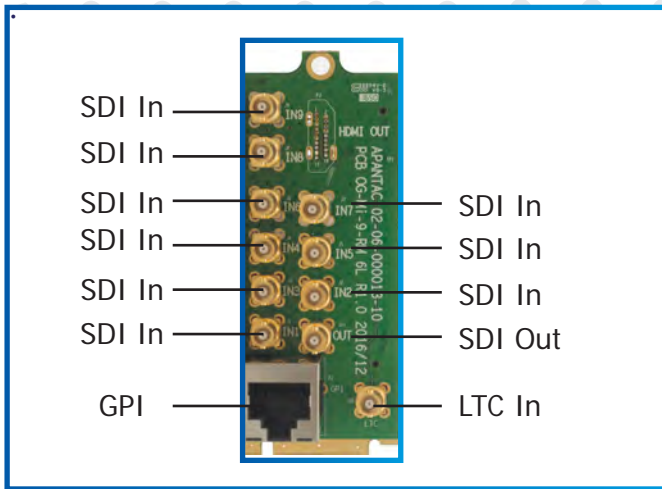
- 9 x SDI Inputs
- 1 x LTC Input
- 1 x SDI Output
- 1 x RJ50 for GPI/Tally

## Standard Accessories for RM

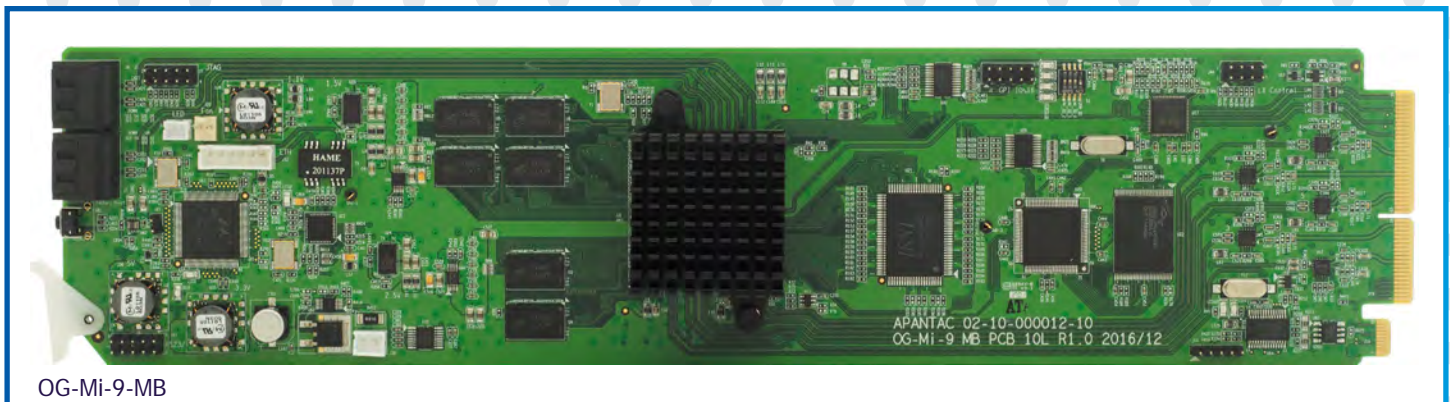
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)

## Optional Accessories for RM

- 11 x HD-BNC to BNC cable

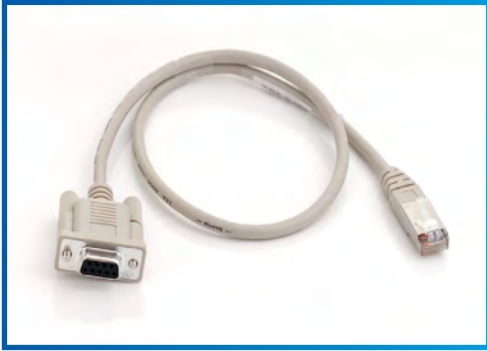


OG-Mi-9-RM



OG-Mi-9-MB





RJ50-DB9: GPI Adapter



DB9 GPI Breakout

## How to Order

- OG-Mi-9-SET-1: OG-Mi-9-MB + OG-Mi-9-RM
- OG-Mi-9-SET-2: OG-Mi-9-MB + OG-Mi-9-RM + 11 HDBNC to BNC cable

OG-Mi-9 SPECIFICATIONS			
<b>Inputs</b>	9 3G SDI Level A&B, HD/SD-SDI	<b>Video Outputs</b>	SDI
<b>Connector Type</b>	HD-BNC	<b>Audio Outputs</b>	Embedded SDI
<b>Total Windows</b>	9	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>General Purpose IO</b>	9 inputs with RJ50 - DB9 connectors
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Serial Port</b>	N/A
<b>Embedded Audio</b>	SMPTE-272M-A	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>Electrical</b>	15 W
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick

## TAHOMA OG-MI-9+ (OPENGEAR)

## 9 INPUT OPENGEAR MULTIVIEWER CARD WITH HDMI AND SDI OUTPUT

## Key Features

- openGear 3.0 card-based form factor
- Low latency - single frame processing delay
- Low energy - only uses 15 W of power
- Accepts 9 auto-detect 3G Level A&B /HD/SD-SDI inputs
- Windows can be sized and moved freely
- HDMI/SDI output in 1080i/P 50/60Hz with embedded audio
- Decode up to 16 embedded audio per SDI input
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 9 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- 5 year limited warranty

## Rear Module Options

## OG-Mi-9-RM (2 slots)

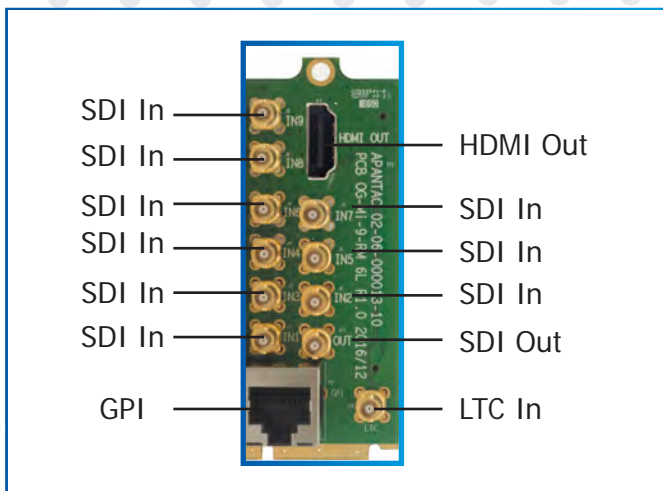
- 9 x SDI Inputs
- 1 x LTC Input
- 1 x SDI Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally

## Standard Accessories for RM

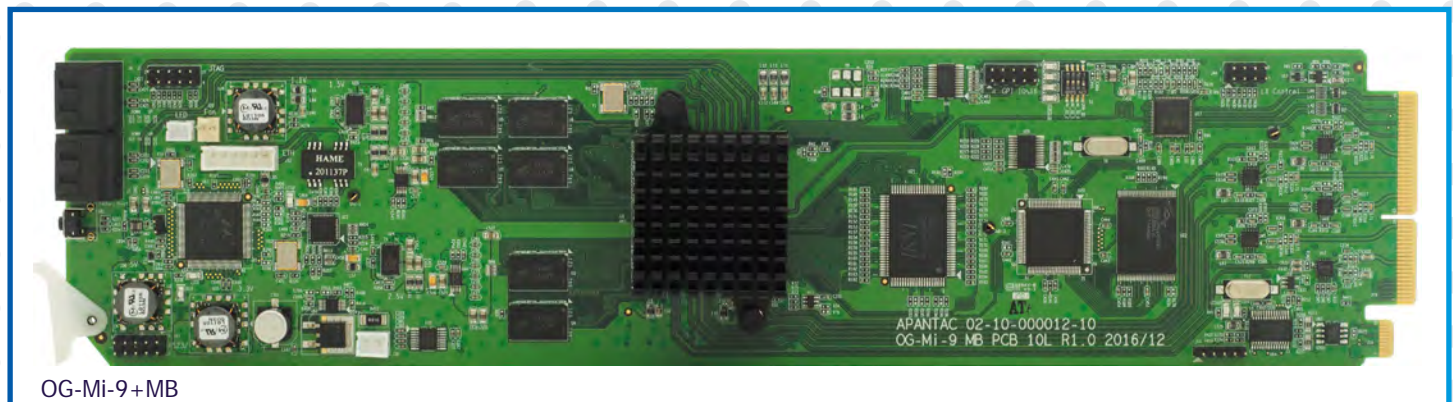
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)

## Optional Accessories for RM

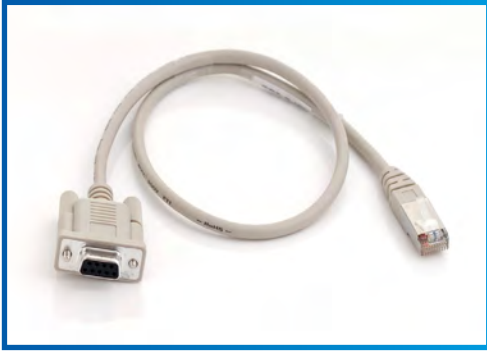
- 11 x HD-BNC to BNC cable



OG-Mi-9-RM



OG-Mi-9+MB



RJ50-DB9: GPI Adapter



DB9 GPI Breakout

## How to Order

- OG-Mi-9+-SET-1: OG-Mi-9-MB + OG-Mi-9-RM
- OG-Mi-9+-SET-2: OG-Mi-9-MB + OG-Mi-9-RM + 11 HDBNC to BNC cable

OG-Mi-9+ SPECIFICATIONS			
<b>Inputs</b>	9 3G SDI Level A&B,HD/SD-SDI	<b>Video Outputs</b>	1 set of HDMI and SDI
<b>Connector Type</b>	HD-BNC	<b>Audio Outputs</b>	Embedded HDMI and SDI
<b>Total Windows</b>	9	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>General Purpose IO</b>	9 inputs with RJ50 - DB9 connectors
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Serial Port</b>	N/A
<b>Embedded Audio</b>	SMPTE-272M-A	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>Electrical</b>	15 W
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick

# TAHOMA OG-MI-9# (OPENGEAR)

## 9 INPUT OPENGEAR MULTIVIEWER CARD WITH DUAL OUTPUT

### Key Features

- openGear 3.0 card-based form factor
- Low latency - single frame processing delay
- Low energy - only uses 15 W of power
- Accepts 9 auto-detect 3G Level A&B /HD/SD-SDI inputs
- Windows can be sized and moved freely
- 2 independent outputs (1 x HDMI + 1 SDI output in 1080i/P 50/60Hz with embedded audio)
- Decode up to 16 embedded audio per SDI input
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 9 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection
- 5 year limited warranty

### Rear Module Options

#### OG-Mi-9-RM (2 slots)

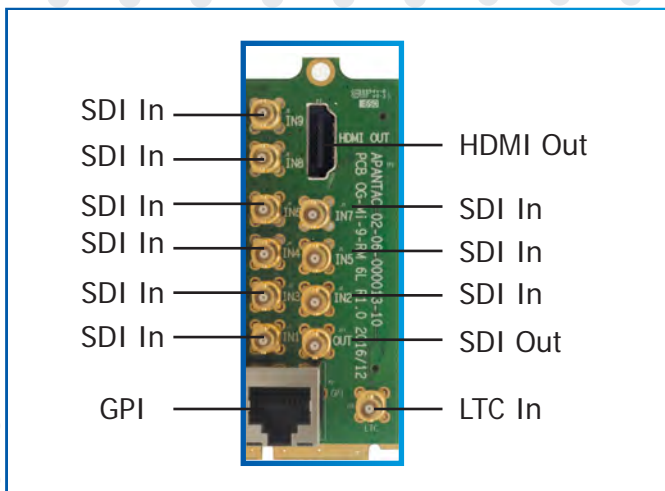
- 9 x SDI Inputs
- 1 x LTC Input
- 1 x SDI Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally

#### Standard Accessories for RM

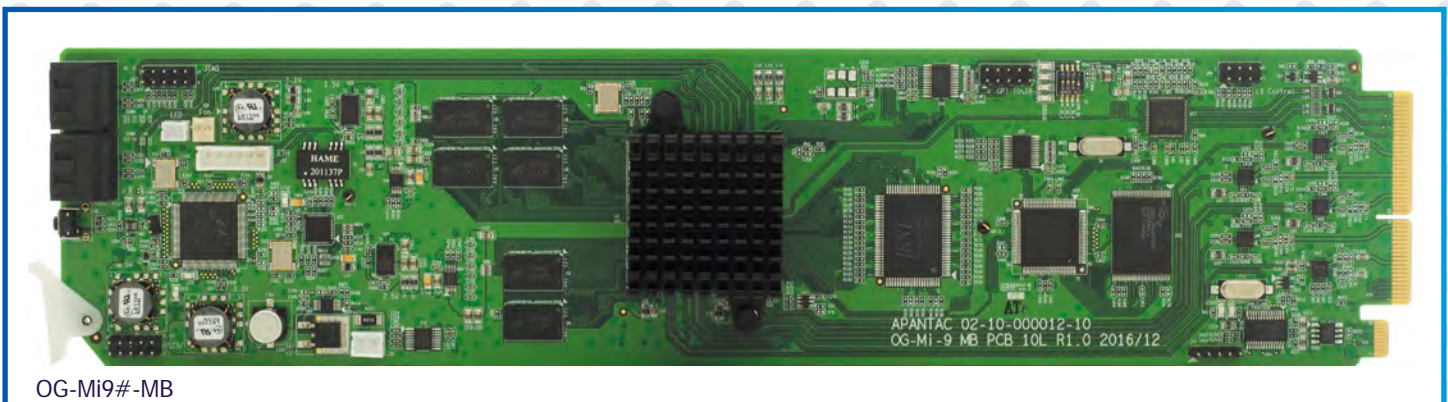
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)

#### Optional Accessories for RM

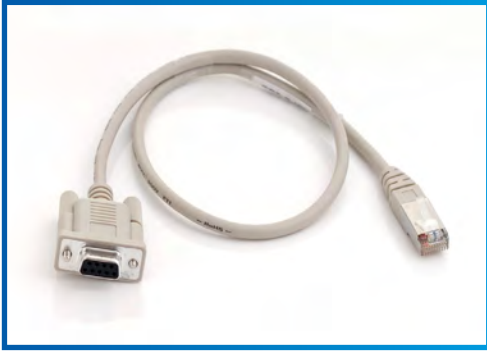
- 11 x HD-BNC to BNC cable



OG-Mi-9-RM



OG-Mi9#-MB



RJ50-DB9: GPI Adapter



DB9 GPI Breakout

## How to Order

- OG-Mi-9#-SET-1: OG-Mi-9#-MB + OG-Mi-9#-RM
- OG-Mi-9#-SET-2: OG-Mi-9#-MB + OG-Mi-9#-RM + 11 HDBNC to BNC cable

OG-Mi-9# SPECIFICATIONS			
<b>Inputs</b>	9 3G SDI Level A&B, HD/SD-SDI	<b>Video Outputs</b>	1 set of HDMI and SDI
<b>Connector Type</b>	HD-BNC	<b>Audio Outputs</b>	Embedded HDMI and SDI
<b>Total Windows</b>	9	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>General Purpose IO</b>	9 inputs with RJ50 - DB9 connectors
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Serial Port</b>	N/A
<b>Embedded Audio</b>	SMPTE-272M-A	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>Electrical</b>	15 W
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick

# TAHOMA OG-MINIDE-II (OPENGear) MODULAR CASCADABLE 4 INPUT MULTIVIEWER (UP TO 40 INPUTS)

## Key Features

- openGear 3.0 card-based form factor
- Dashboard control enabled - for simple configuration
- 4 HDMI inputs
- Low power consumption - 17W
- Up to 10 modules can be cascaded together
- Can also be cascaded with OG-MiniQ and OG-Mini-DL-II modules to create a mix and match format multiviewer
- Decode up to 4 channels embedded audio per HDMI input
- Ethernet for configuration
- Dynamic UMD/labels & Tallies (TSL)
- Simultaneous HDMI/DVI and SDI outputs
- 2 GPI tallies per window
- 8 GPI contacts, can be configured for tally or ASCII protocol
- Built-in digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Text and background colors have adjustable transparency
- Safe area markers
- Stereo analog audio monitoring output
- 5 year limited warranty

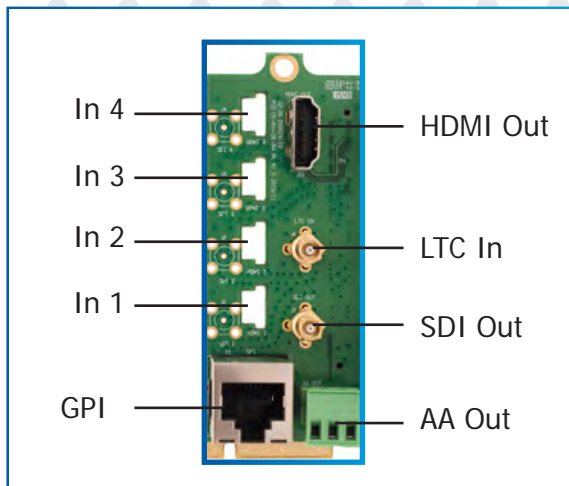
## Module Options

### OG-Mini-DE-II-RM (2 slots)

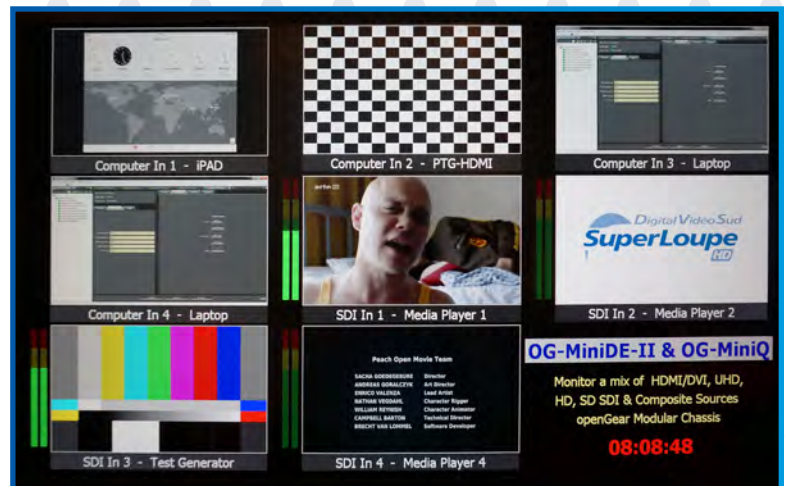
- 4 x HDMI Inputs
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Standard Accessories for RM

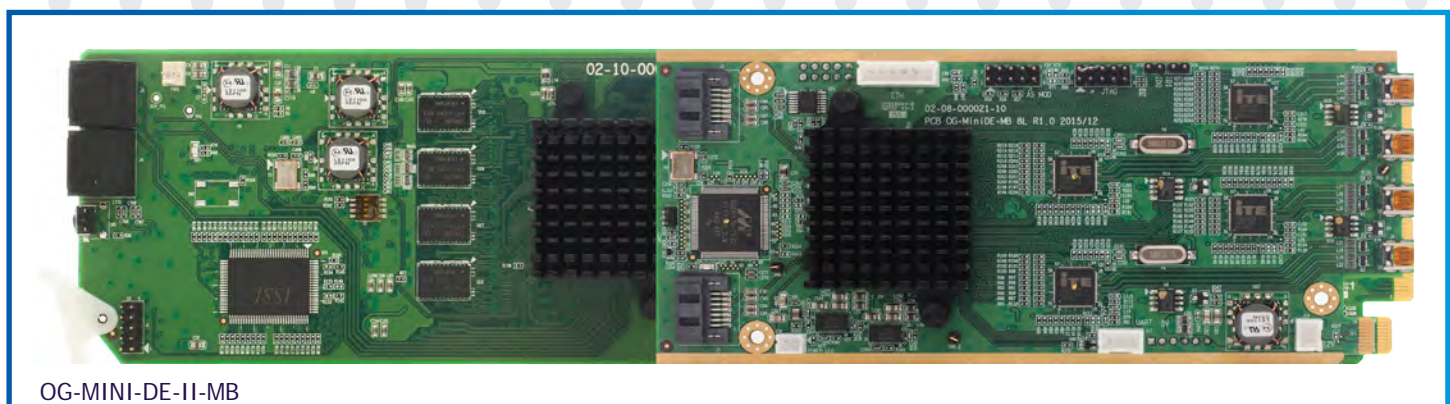
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 4 Type D HDMI male to Type A Female HDMI cable



OG-MiniDE-II-RM



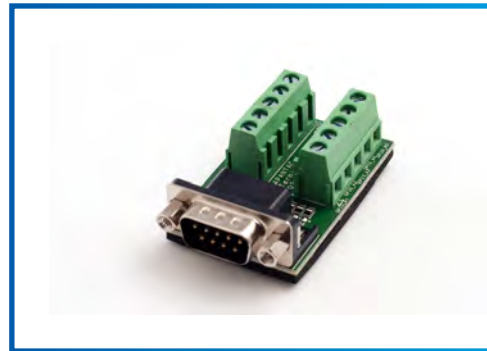
OG-MiniDE-II cascaded together with OG-MiniQ



OG-MINI-DE-II-MB



RJ50-DB9: GPI Adapter



DB9 GPI Breakout

## How to Order

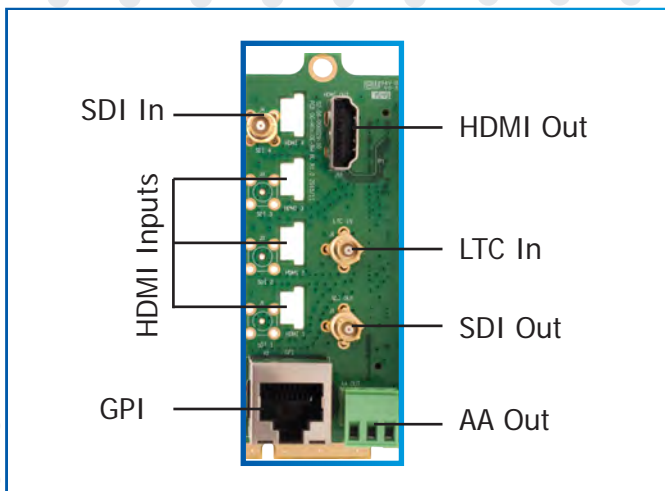
- OG-MiniDE-II-SET-1: OG-MiniDE-II-MB + OG-MiniDE-II-RM

SPECIFICATIONS			
<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI HDM and SDI has embedded audio
<b>Inputs</b>	HDMI / DVI	<b>HDMI</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Connector Type</b>	HDMI Type D	<b>Connector Type</b>	HDMI Type A
<b>Maximum Resolution</b>	up to 1920x1200/1080P60	<b>SDI</b>	Matching the HDMI output resolution up to 3G with valid SDI resolutions
<b>Embedded Audio</b>	Decodes and displays 4 channels	<b>Connector Type</b>	HD-BNC
<b>LTC</b>	1	<b>Analog Audio Output</b>	1
<b>Connector Type</b>	HD-BNC	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>GPI</b>	8 for tally or AXP (ASCII command)	<b>IP</b>	1000 Base-T, TSL, AXP_Lite protocol
<b>Connector Type</b>	RJ-50 (with Terminal Block)	<b>Power</b>	17W

# TAHOMA OG-MINIDL-X+X (OPENGear) MODULAR CASCADABLE 4 INPUT MULTIVIEWER (UP TO 40 INPUTS)

## Key Features

- openGear 3.0 card-based form factor
- Dashboard control enabled - for simple configuration
- Mixed format inputs, can be 1+3 (1 HDMI + 3 SDI), 2+2 (2 HDMI + 2 SDI), 3+1 (3 HDMI + 1 SDI)
- Low power consumption - 17W
- Up to 10 modules can be cascaded together
- Can also be cascaded with OG-MiniQ and OG-Mini-DE-II modules to create a mix and match format multiviewer
- Decode up to 4 channels embedded audio per HDMI input
- Ethernet for configuration
- Dynamic UMD/labels & Tallies (TSL)
- Simultaneous HDMI/DVI and SDI outputs
- 2 GPI tallies per window
- 8 GPI contacts, can be configured for tally or ASCII protocol
- Built-in digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Text and background colors have adjustable transparency
- Safe area markers
- Stereo analog audio monitoring output
- 5 year limited warranty



OG-MiniDL-3+1-RM

## Rear Module Options

### OG-Mini-DL-1+3-RM (2 slots)

- 1 x HDMI Input + 3 x SDI Inputs
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Standard Accessories for RM

- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 1 x Type D HDMI male to Type A HDMI Female cable
- 3 x HD-BNC to BNC cable

### OG-Mini-DL-2+2 (2 slots)

- 2 x HDMI Inputs + 2 x SDI Inputs
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

### Standard Accessories for RM

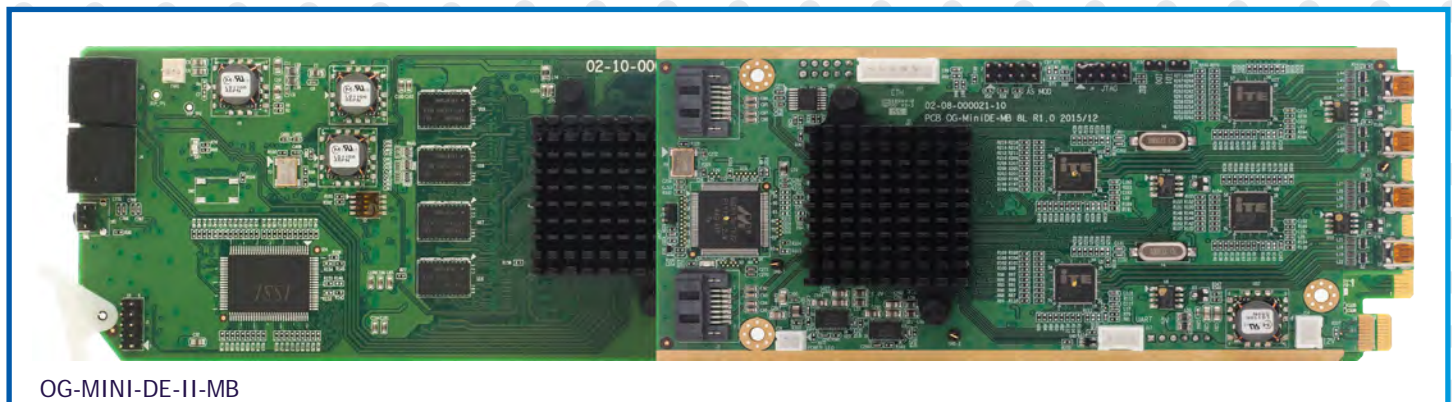
- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 2 x Type D HDMI male to Type A HDMI Female cable
- 2 x HD-BNC to BNC cable

### OG-Mini-DL-3+1 (2 slots)

- 3 x HDMI Inputs + 1 x SDI Inputs
- 1 x BNC Output
- 1 x HDMI Output
- 1 x RJ50 for GPI/Tally
- 1 x 3-pin Connector for AA Out

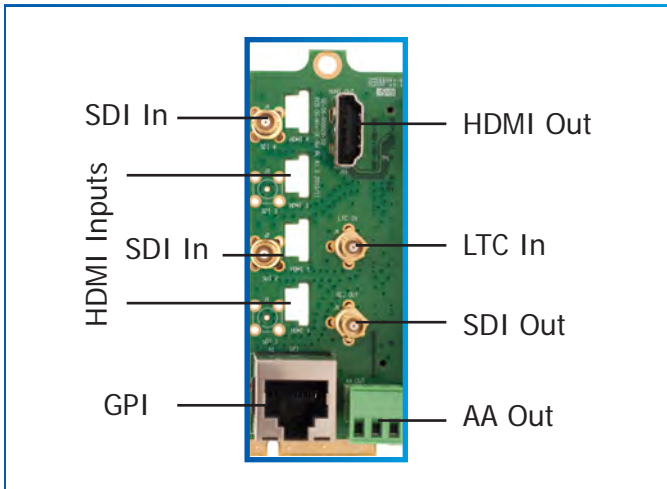
### Standard Accessories for RM

- RJ50 to DB9 (for GPI)
- DB9 to Terminal Block (for GPI)
- 3 x Type D HDMI male to Type A HDMI Female cable
- 1 x HD-BNC to BNC cable

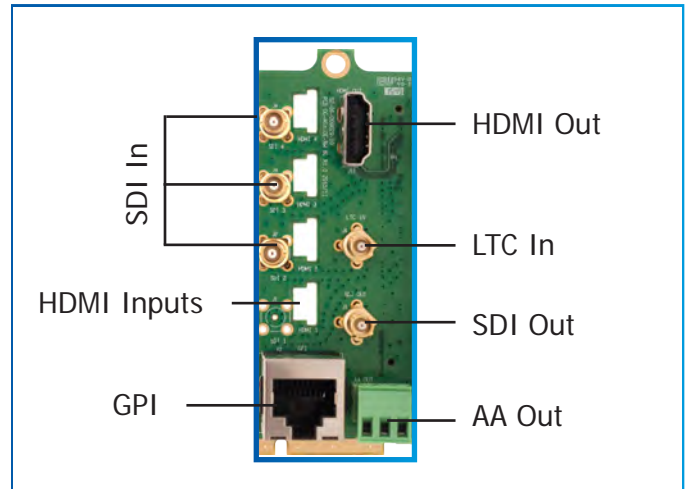


OG-MINI-DE-II-MB





OG-MiniDL-2+2-RM



OG-MiniDL-1+3-RM

## How to Order

- OG-MiniDL-1+3: OG-MiniDE-II-MB + OG-MiniDL-1+3-RM
- OG-MiniDL-2+2: OG-MiniDE-II-MB + OG-MiniDL-2+2-RM
- OG-MiniDL-3+1: OG-MiniDE-II-MB + OG-MiniDL-3+1-RM



RJ50-DB9: GPI Adapter



DB9 GPI Breakout

SPECIFICATIONS			
<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI HDM and SDI has embedded audio
<b>Inputs</b>	HDMI / DVI + SDI	<b>HDMI</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Connector Type</b>	HDMI Type D + HD-BNC	<b>Connector Type</b>	HDMI Type A
<b>Maximum Resolution</b>	up to 1920x1200/1080P60	<b>SDI</b>	Matching the HDMI output resolution up to 3G with valid SDI resolutions
<b>Embedded Audio</b>	Decodes and displays 4 channels for HDMI Decodes and displays 16 channels for SDI	<b>Connector Type</b>	HD-BNC
<b>LTC</b>	1	<b>Analog Audio Output</b>	1
<b>Connector Type</b>	HD-BNC	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>GPI</b>	8 for tally or AXP (ASCII command)	<b>IP</b>	1000 Base-T, TSL, AXP_Lite protocol
<b>Connector Type</b>	RJ-50 (with Terminal Block)	<b>Power</b>	17W

## MiniQ MODULAR MULTIVIEWER

### Key Features

- Single frame processing delay
- Low power consumption (15W per MiniQ)
- Hot swappable boards and power supplies
- Compact in depth (10 inches / 25 cm)
- Upgradable to supports 4K/UHD inputs
- 4 auto-detect 3G/HD/SD-SDI, composite PAL/NTSC inputs
- Any module can be removed to work as a standalone
- Up to 8 modules can be inserted into a 3RU frame
- Up to 3 modules can be inserted into a 1RU frame
- 16 channels of embedded audio per SDI input
- Multiple outputs in DVI, HDMI, SDI, or VGA (optional)
- Output resolution up to 1920x1200 (incl. 1080p)
- Built-in CATx extender - extend 1080p up to 115 feet with optional receivers
- UMD, tallies, borders
- Automatic input aspect ratio detection
- Built-in video/audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- 3 year limited warranty

### Accessories

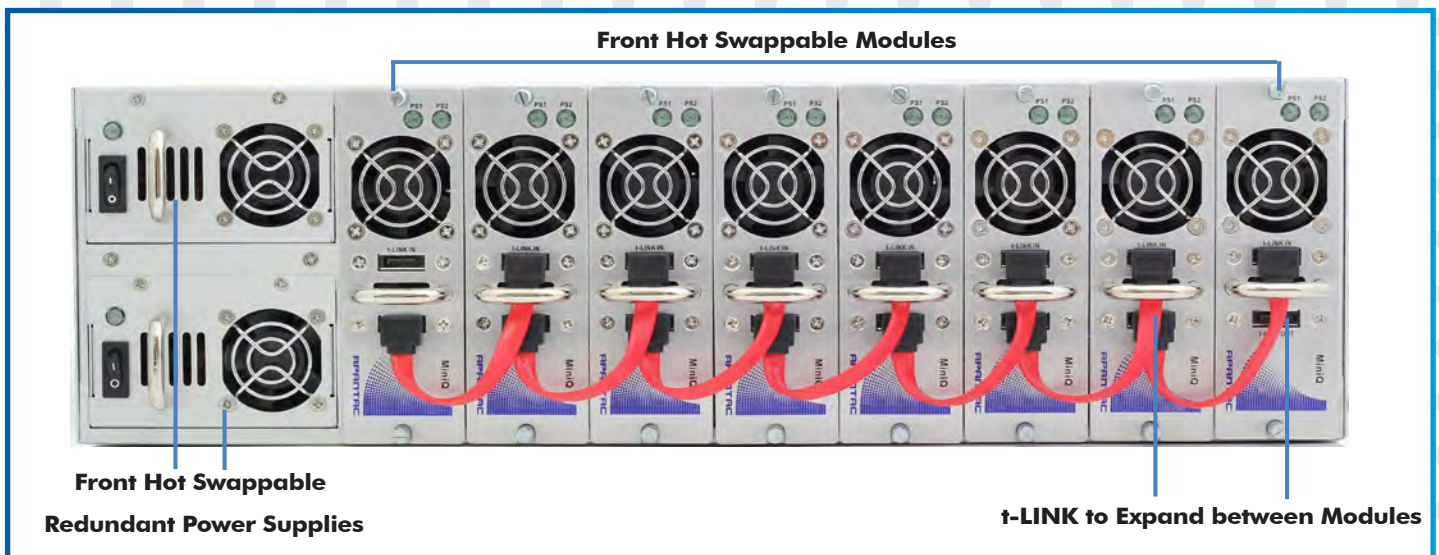
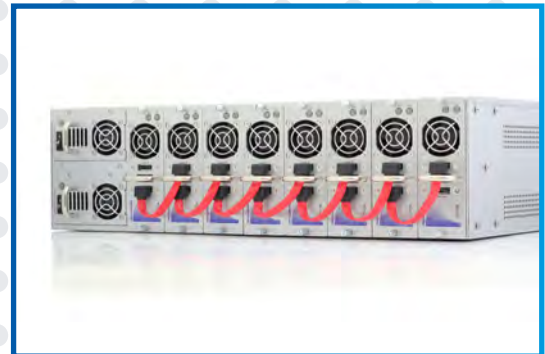
#### Standard

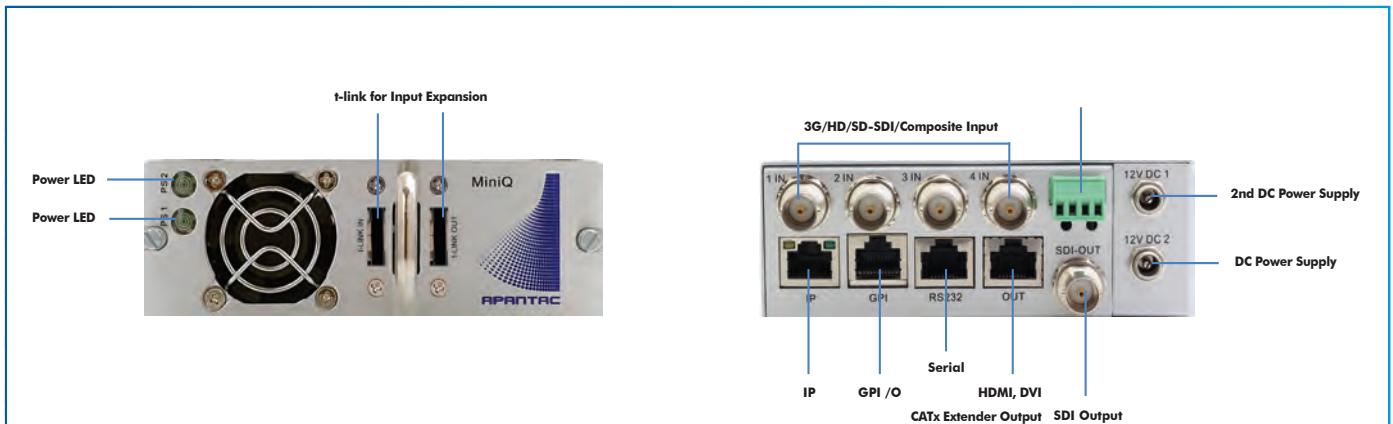
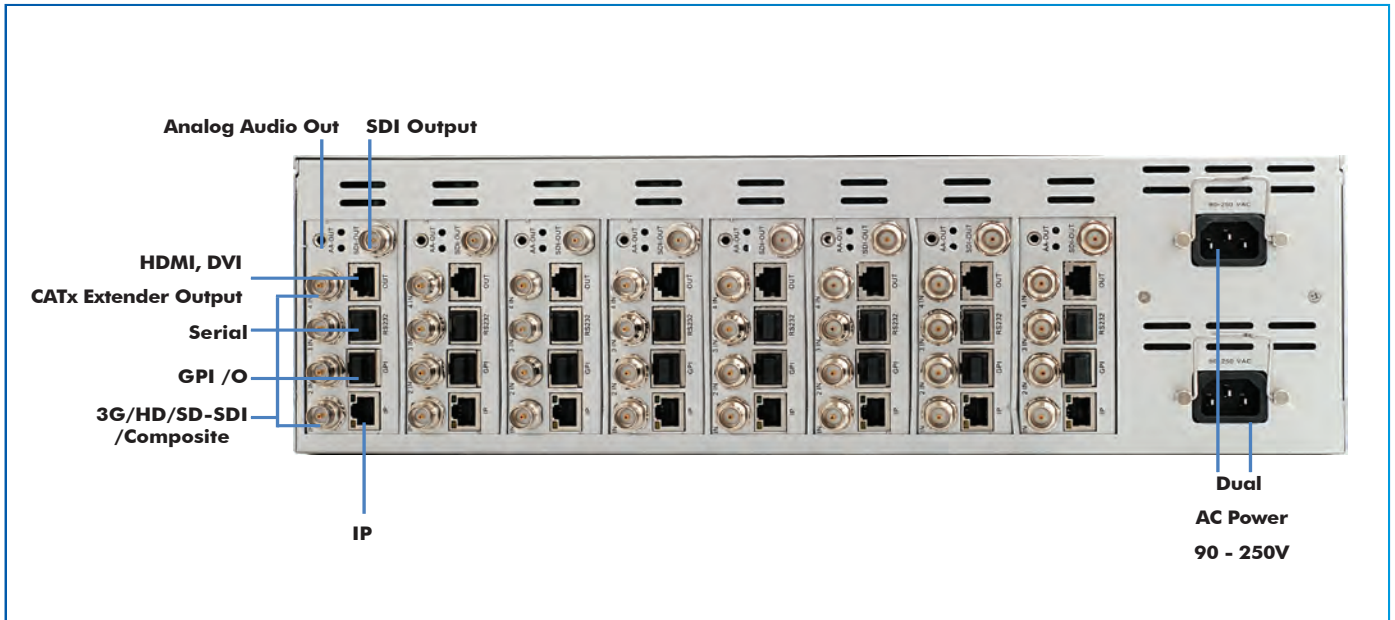
- Hot swappable redundant power supplies on the 3 RU Rackmount
- 9 feet of CAT6 to HDMI cable
- RJ50 to DB9 for GPI
- RJ45 to DB9 for Serial
- CD (software, manual)
- Rack mount

#### Options

- HDMI to DVI adapter
- RJ45 (HDMI) to VGA receiver
- DC 12V standalone power supply

*Designed with OB Vans & Mobile Truck in Mind*





# TAHOMA MINIQ MODULAR MULTIVIEWER



MiniQ-1U-FR mount with 3 x MiniQ - Rear

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 4 3G/HD/SD-SDI, Composite (PAL/NTSC)	<b>Outputs</b>	DVI, HDMI, SDI, VGA (optional)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	800 x 480 - 1920 x 1200 (1080p)
<b>Total Windows</b>	4 auto-detect inputs. 3G/HD/SD-SDI/CVBS. Up to 8 modules can be cascaded together to form 32 inputs	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Optic Extender (option)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>General Purpose IO</b>	Up to 8 inputs with RJ45 - DB9 connectors
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU 624-2)	<b>Electrical</b>	15W, 90-250V 50/60 Hz - standalone 120W, 90-250V 50/60 Hz - 3RU frame
<b>Signal Level</b>	1V nominal	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>DC Offset</b>	0V, + - 0.1V	<b>Power</b>	DC 12V power supply for standalone units. Standard redundant power supply for 3 RU Rackmount
<b>Impedance</b>	75 ohm for BNC	<b>Size</b>	Compact, 13.34 cm (5.25") 1RU, 25 cm (10") 3RU, 25 cm (10")
<b>Return Loss</b>	40db up to 5MHz		
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD		
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

### MiniQ and TAHOMA Classic Comparison

FEATURES	MiniQ	TAHOMA CLASSIC
Hot swappable quads	Yes	No
Hot swappable power supplies	Yes	No
Redundant power supplies	Yes	Yes
Maximum quad cascade	8	16 (LE-64)
Chassis depth	10 inches (25 cm)	15.7 in (40 cm) , 19.7 in (50 cm) , or 23.6 in (60 cm)23.6 in
Input auto detect	Yes	Yes
Decode and display 16 channels of embedded audio	Yes	Yes
AA/AES Audio input option	No	Yes
Up to 30 presets saved in flash memory	Yes	Yes
Fast boot-up time (< 12 seconds)	Yes	Yes
3G, HD/SD-SDI, and composite support	Yes	Model / option dependent
Output: HDMI, DVI, or VGA (option) over CAT 5e/6	Yes	Yes
SDI Output	Yes, standard	Option
Skin Technology	No	Yes
Safe Area - Two per window	Yes	Yes
Up to 4 labels per window	Yes	Yes
Window size & position can be freely adjusted - 16:9, 4:3 or free aspect ratio	Yes	Yes
Full screen capability	Yes	Yes
Aspect ratio auto detect by frequency or WSS / AFD	Yes	Yes
Digital clock / counter	Yes	Yes
Analog clock & logo	No	Yes
Clocks sync to LTC	No	Yes
Clocks sync to NTP	Yes	Yes
Analog stereo audio monitoring output	Yes	Yes
AES audio monitoring output	No	Yes
GPI Tally ( 8 per quad )	Yes	Yes
GPI/O for control / alarm	No	Yes
IP port for control and configuration, tally and label (TSL)	Yes	Yes
RS232 port for control, tally, & label management (TSL)	Yes	Yes
Video presence / format, frozen, black, WSS, AFD alarm detection	Yes	Yes
Audio presence, high or low alarm detection	Yes	Yes
SNMP support	No	Yes
Front panel buttons for quick presets recall	No	Yes
ASP (Apantac Software Panel) and touch panel support	Yes	Yes
Director configuration and control software	Yes	Yes
Standard 3 year warranty	Yes	Yes

# CRESCENT MI-9 COMPACT 9 INPUT SDI MULTIVIEWER

## Key Features

- Accepts 9 auto-detect 3G Level A&B /HD/SD-SDI inputs
- Windows can be sized and moved freely
- Low latency - single frame processing delay
- Low energy - only uses 17 W of power
- Up to 3 modules can be inserted into a 1RU
- Simultaneous HDMI and SDI outputs with embedded audio
- Decode up to 16 embedded audio per SDI input
- Ethernet for configuration and external control
- Dynamic UMD/labels & Tallies (TSL)
- Stand alone labels, customizable logos
- 9 GPIs for tallies, count up/down triggers or preset recall
- Built-in analog/digital clocks can sync with LTC or NTP
- Borders can be turned on or off
- Two sets of safe area markers
- Visual Alarm tags for video/audio alarm detection



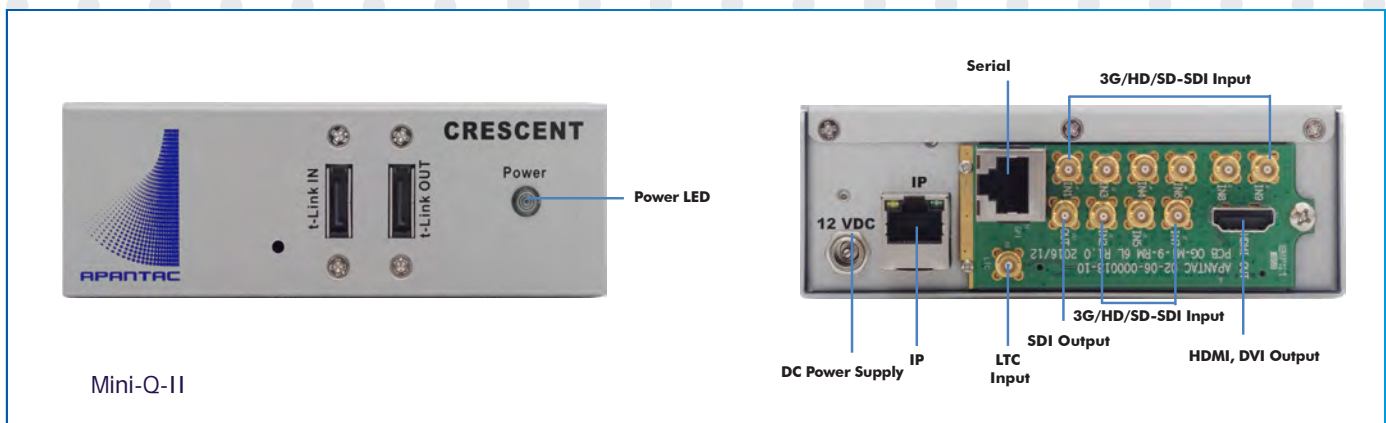
## Accessories

### Standard

- DC 12V power supply
- RJ50 to DB9 for GPI
- Breakout terminal block
- CD (software, manual)

### Options

- 1 RU rack mount



### Mi-9 SPECIFICATIONS

<b>Inputs</b>	9 3G SDI Level A&B, HD/SD-SDI	<b>Video Outputs</b>	SDI
<b>Connector Type</b>	HD-BNC	<b>Audio Outputs</b>	Embedded SDI
<b>Total Windows</b>	9	<b>Output Resolution</b>	1920 x 1080p 50/60Hz
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>On Screen Display</b>	Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>General Purpose IO</b>	9 inputs with RJ50 - DB9 connectors
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Serial Port</b>	N/A
<b>Embedded Audio</b>	SMPTE-272M-A	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>Electrical</b>	15 W
<b>Alarms</b>	No audio, audio high/low, no video, video format display	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick



RJ50-DB9: GPI Adapter



DB9 GPI Breakout



POWER SUPPLY

# CRESCENT MINI-Q-II COMPACT MULTIVIEWER

## MiniQ-II MODULAR MULTIVIEWER

### Key Features

- Single frame processing delay
- Low power consumption (15W per MiniQ-II)
- Compact in depth (10 inches / 25 cm)
- 4 auto-detect 3G/HD/SD-SDI, composite PAL/NTSC inputs
- Windows can be moved and sized freely
- Up to 3 modules can be mounted in a 1RU
- 16 channels of embedded audio per SDI input
- Multiple outputs in DVI/HDMI and SDI
- Output resolution up to 1920x1200 (incl. 1080p)
- UMD, tallies, borders
- Analog and digital clocks
- Can decode and display line 21, 608 and 708 CC
- Automatic input aspect ratio detection
- Built-in video/audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- 3 year limited warranty

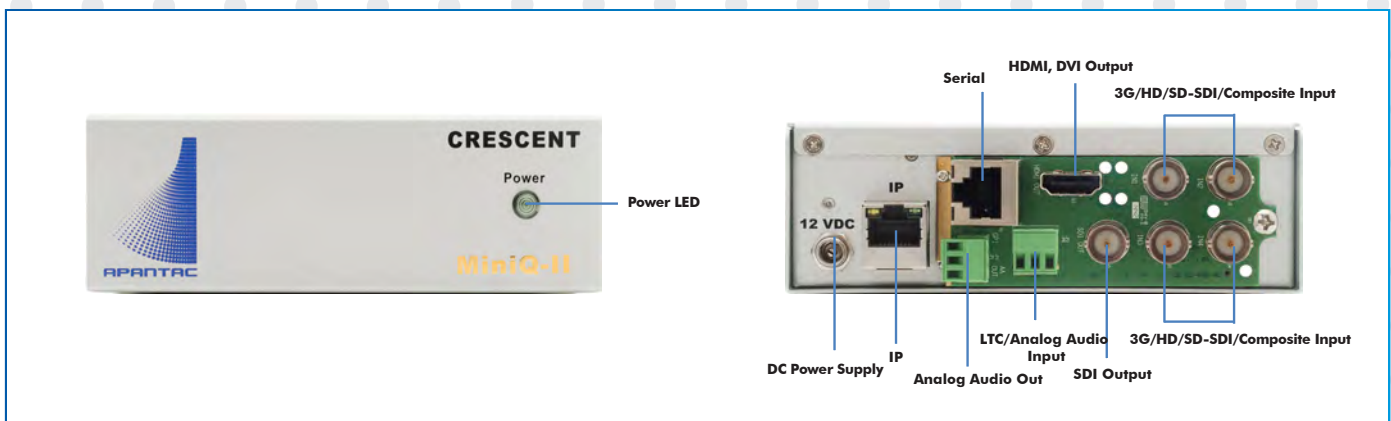
### Accessories

#### Standard

- DC 12V power supply
- RJ50 to DB9 for GPI
- Breakout terminal block
- RJ45 to DB9 for Serial
- CD (software, manual)
- Rack mount

#### Options

- 1 RU rack mount





## SPECIFICATIONS

<b>Video Inputs</b>	Up to 4 3G/HD/SD-SDI, Composite (PAL/NTSC)	<b>Outputs</b>	DVI/HDMI, SDI
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	800 x 480 - 1920 x 1200 (1080p)
<b>Total Windows</b>	4 auto-detect inputs. 3G/HD/SD-SDI/CVBS. Up to 8 modules can be cascaded together to form 32 inputs	<b>On Screen Display</b>	Analog and digital clocks. Borders, labels, tally UMD, OMD, IMD, dynamic UMD
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>General Purpose IO</b>	Up to 8 inputs with RJ45 - DB9 connectors
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Serial Port</b>	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>Electrical</b>	15W, 90-250V 50/60 Hz - standalone
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU 624-2)	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Signal Level</b>	1V nominal	<b>Power</b>	DC 12V power supply
<b>DC Offset</b>	0V, + - 0.1V	<b>Size</b>	Compact, 13.34 cm (5.25") 1RU, 25 cm (10")
<b>Impedance</b>	75 ohm for BNC		
<b>Return Loss</b>	40db up to 5MHz		
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD		
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		



RJ50-DB9: GPI Adapter



RJ45-DB9: RS232 Adapter



DB9 GPI Breakout

# CRESCENT MINI-DE-II COMPACT HDMI MULTIVIEWER

## Mini-DE-II COMPACT MULTIVIEWER

### Key Features

- Low power consumption (15W per MiniDE-II)
- Compact in depth (10 inches / 25 cm)
- 4 HDMI Windows can be moved and sized freely
- Up to 3 modules can be mounted in 1RU
- 4 channels of embedded audio per HDMI input
- Multiple outputs in DVI/HDMI and SDI
- Output resolution up to 1920x1200 (incl. 1080p)
- UMD, tallies, borders
- Analog and digital clocks
- 3 year limited warranty

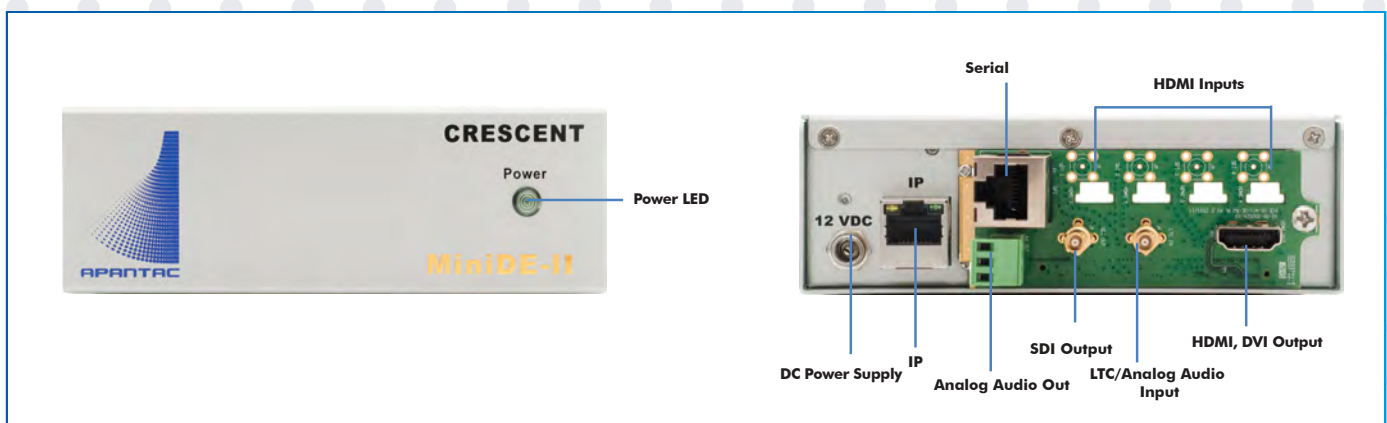
### Accessories

#### Standard

- DC 12V power supply
- RJ50 to DB9 for GPI
- Breakout terminal block
- RJ45 to DB9 for Serial
- CD (software, manual)

#### Options

- 1 RU rack mount



## SPECIFICATIONS

<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI
<b>Inputs</b>	HDMI / DVI	<b>HDMI</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Connector Type</b>	HDMI Type D	<b>Connector Type</b>	HDMI Type A
<b>Maximum Resolution</b>	up to 1920x1200/1080P60	<b>SDI</b>	Matching the HDMI output resolution up to 3G with valid SDI resolutions
<b>Embedded Audio</b>	8 channels	<b>Connector Type</b>	HD-BNC
<b>LTC</b>	1	<b>Analog Audio Output</b>	1
<b>Connector Type</b>	HD-BNC	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>GPI</b>	8 for tally or AXP (ASCII command)	<b>IP</b>	1000 Base-T, TSL, AXP_Lite protocol
<b>Connector Type</b>	RJ-50 (with Terminal Block)	<b>Power</b>	17W



RJ50-DB9: GPI Adapter



RJ45-DB9: RS232 Adapter



DB9 GPI Breakout

# CRESCENT MINI-DL-X+X COMPACT HDMI MULTIVIEWER

## Key Features

- Single frame processing delay
- Low power consumption (15W per MiniQ-II)
- Compact in depth (10 inches / 25 cm)
- Available in 3 models
  - Mini-DL-1+3 (1 video + 3 HDMI)
  - Mini-DL-2+2 (2 video + 2 HDMI)
  - Mini-DL-3+1 (3 video + 1 HDMI)
- Windows can be moved and sized freely
- Up to 3 modules can be inserted into a 1RU
- 8 channels of embedded audio per HDMI inputs
- 16 channels of embedded audio per SDi inputs
- Multiple outputs in DVI/HDMI and SDI
- Output resolution up to 1920x1200 (incl. 1080p)
- UMD, tallies, borders
- Analog and digital clocks
- Can decode and display line 21, 608 and 708 CC on video inputs
- Built-in video/audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- 3 year limited warranty

## Accessories

### Standard

- DC 12V power supply
- RJ50 to DB9 for GPI
- Breakout terminal block
- RJ45 to DB9 for Serial
- CD (software, manual)
- Rack mount

### Options

- 1 RU rack mount



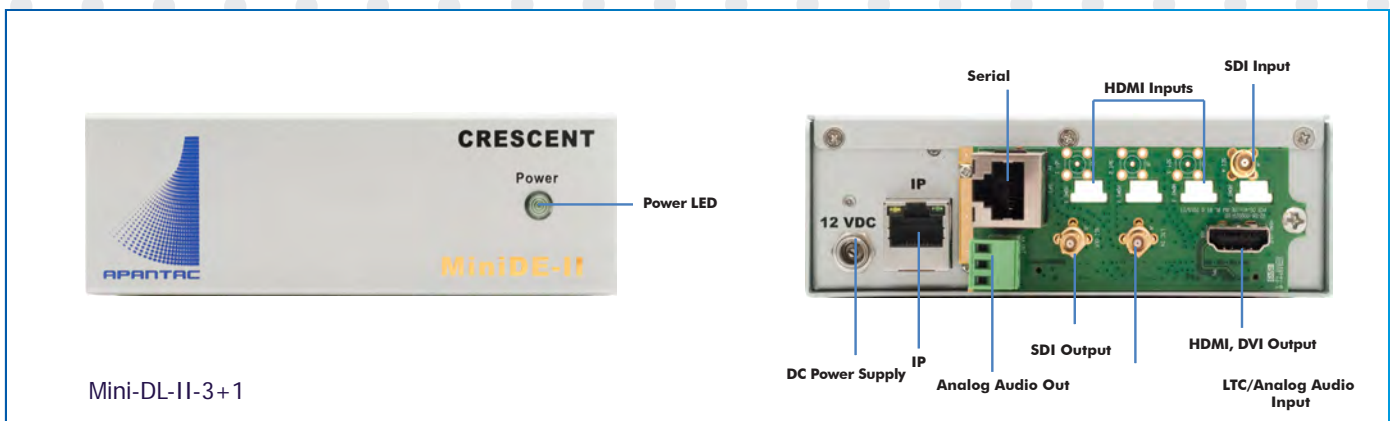
RJ50-DB9: GPI Adapter



RJ45-DB9: RS232 Adapter



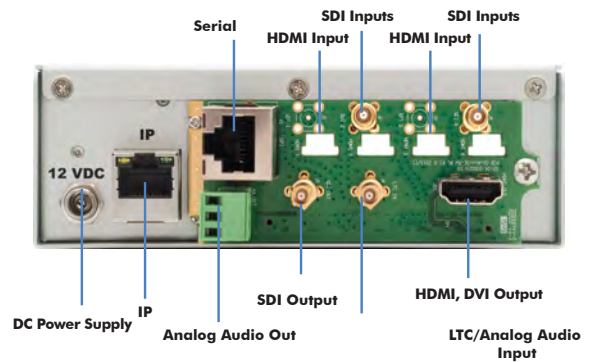
DB9 GPI Breakout





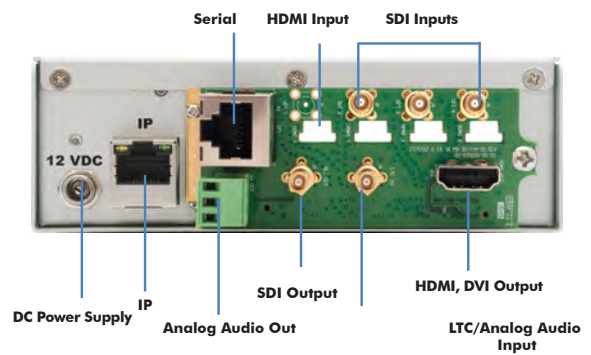
Power LED

Mini-DL-II-2+2



Power LED

Mini-DL-II-1+3



## SPECIFICATIONS

<b>Total Windows</b>	4	<b>Output</b>	1 x HDMI/DVI, 1 x SDI
<b>Inputs</b>	HDMI / DVI + SDI	<b>HDMI</b>	800x480 to 1920x1200 (1080p) 50/59.94/60Hz
<b>Connector Type</b>	HDMI Type D + HD-BNC	<b>Connector Type</b>	HDMI Type A
<b>Maximum Resolution</b>	up to 1920x1200/1080P60	<b>SDI</b>	Matching the HDMI output resolution up to 3G with valid SDI resolutions
<b>Embedded Audio</b>	8 channels	<b>Connector Type</b>	HD-BNC
<b>LTC</b>	1	<b>Analog Audio Output</b>	1
<b>Connector Type</b>	HD-BNC	<b>On Screen Display</b>	Borders, Labels, Tallies, Audio meters, Alarm tags, Safe area markers
<b>GPI</b>	8 for tally or AXP (ASCII command)	<b>IP</b>	1000 Base-T, TSL, AXP_Lite protocol
<b>Connector Type</b>	RJ-50 (with Terminal Block)	<b>Power</b>	17W

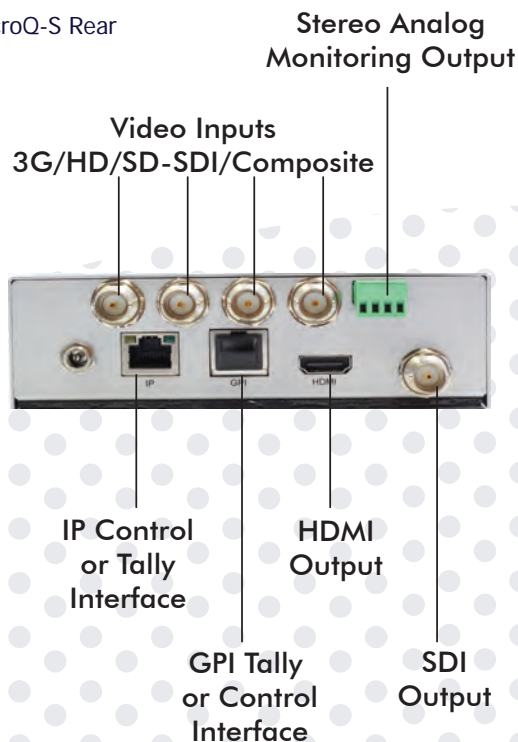
# CRESCENT MICROQ-S PRODUCTION COMPACT VIDEO QUAD SPLIT

- Compact Video Quad Split • Supports 3G/HD/SD-SDI/Composite input in 50/60Hz
  - HDMI and SDI output with embedded audio for monitoring
    - Supports embedded audio, stereo analog audio output
    - Safe Area indicators • Dynamic Tally via TSL (IP) or GPI
- Any Window can be made full screen • Front panel buttons to recall presets • IP control

## MicroQ-S

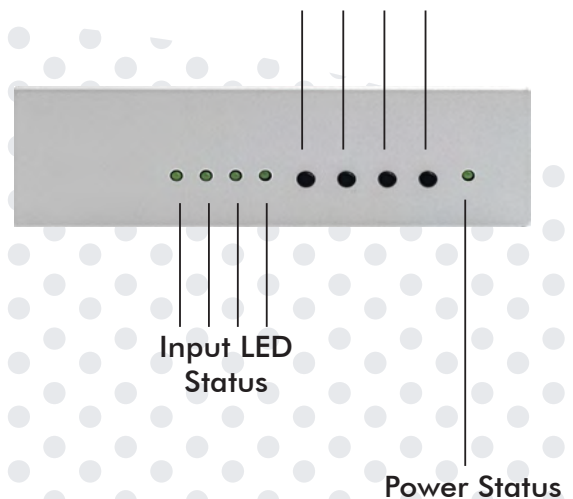
Simple Compact Video Quad Split with HDMI and SDI Output

MicroQ-S Rear

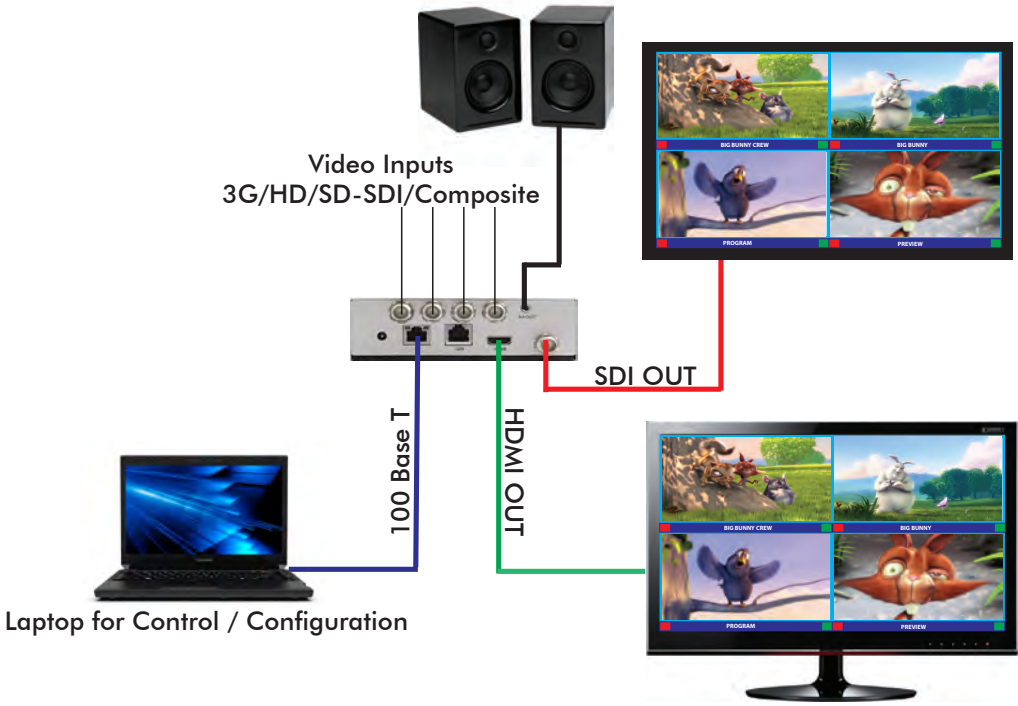
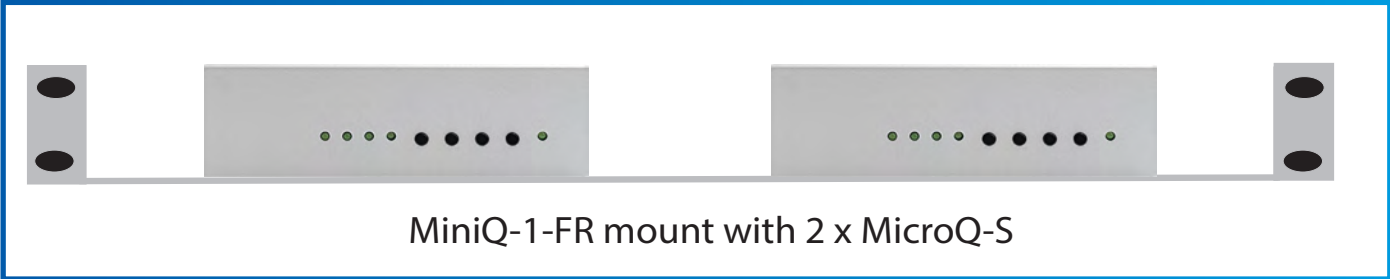


MicroQ-S Front

Each Button is dedicated for each Input  
Push the Button once to go full screen  
Push it again to go back to Quad Split



MicroQ-S			
<b>Video Inputs</b>	3G/HD/SD-SDI, Composite	<b>Outputs</b>	1 x HDMI, 1 SDI
<b>Total Windows</b>	4	<b>HDMI</b>	800x480 to 1920x1200 (1080p) 50/60 Hz
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>SDI</b>	Matching HDMI output resolution up to 3G
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>On Screen Display</b>	Border, Label, Tally, Safe Area Indicators, Alarms and Audio Meters
<b>Return Loss</b>	> 15db up to 1.485 Gbps < > 10db up to 3G	<b>GPI</b>	8 for Tally, preset recall, or ASCII
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>IP</b>	100 Base-Tx, TSL, AXP
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Electrical</b>	12 W, 90-250V 50/60Hz
<b>Signal Level</b>	1V nominal	<b>EMI/RFI</b>	Complies with FCC Part 15, Class A, CE, EU, EMC, C-tick
<b>DC Offset</b>	0V, + - 0.1V	<b>Power</b>	5 DC 3A
<b>Impedance</b>	75 ohm	<b>Size</b>	171 mm W x 120 mm D x 44.45 mm H
<b>Return Loss</b>	40db up to 5MHz	<b>Mount</b>	Magnetic



# TAHOMA CLASSIC MULTIVIEWERS

## The TAHOMA “Classic” Multiviewer Platform

Three series of multiviewers are based on the TAHOMA “Classic” platform:

### BROADCAST SERIES:

- 4 - 64 auto detect HD/SD-SDI, PAL/NTSC inputs (3G ready, SMPTE-425, Level A)
- Upgrade from SD to HD, HD to 3G via software license
- Automatic input aspect ratio detection, by frequency, by WSS and AFD
- Decodes closed captioning on Line 21, CEA608/708 on each input
- Decode and display 16 channels of embedded audio per SDI input
- Built-in video/audio alarm detection
  - video presence/format, video black, video frozen, no WSS/AFD
  - audio presence, audio high/low
- Input looping capabilities (LI series)
- Built-in router (LX series)

### UNIVERSAL SERIES:

- 4 - 16 HDMI/DVI/VGA/YPbPr/Composite inputs plus 2 - 8 optional SDI inputs
- Decodes and displays 2 channels of embedded audio per HDMI input
- HDCP compatible

### HYBRID SERIES:

- 4 - 16 mix of multimedia and broadcast inputs
- HDMI/DVI/VGA/YPbPr/SD/HD-SDI (3G ready, SMPTE-425, Level A)

### COMMON FEATURES

- Single frame of processing time
- Fast boot up ( < 12 seconds)
- Field upgradable to allow discrete audio (AES / AA)
- Up to 30 presets - internal flash memory
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet (10 meters)
  - Optional active receivers up to 115 feet (35 meters)
- Supports DVI, HDMI and VGA (optional) and SDI (optional) outputs
- Output resolution up to 2048x1080 @ 50/60Hz including 1080p and 1920x1080p
- Front panel buttons for quick preset recall
- Front panel LEDs for input signal and power supply status
- Multiple labels per video window - UMD, OMD, IMD and standalone labels
- Visual and optional SNMP alarms & logging
- Supports TSL 3.1 and 5.0 (IP and RS232)
- Supports AXP (Apantac eXchange Protocol)
- Redundant power supplies are optional for 1 RU frame
- Redundant power supplies are standard for frames larger than 1 RU
- Apantac skin technology allows on-screen graphical elements to be designed with any graphics tool
- Analog and digital clocks
- 2 sets of “safe area / safe title” markers per image
- 1 AES, 1 AA and 1 AA on front panel (with volume adjustment) audio monitoring outputs
- 3 year limited warranty



## STANDARD ACCESSORIES

- 15 feet of CAT6 FTP cable per output
- DVI/HDMI-SR passive receivers per output
- Rack mounting kit
- SCSI to DB9 cable for GPI per output
- GPI terminal block
- RJ50 to DB9 cable for GPI per module
- RJ45 to DB9 cable for serial (RS232)

## OPTIONAL ACCESSORIES

- SDI-Out (1 per module)
- HDMI-1-R, DVI-1-LR long distance receiver
- 8 channels of AES balanced/unbalanced breakout
- 16 channels of AA balanced/unbalanced breakout
- VGA receiver for VGA output
- YPbPr receiver for YPbPr output
- SPP (simple preset panel) for recalling presets
- Redundant power supply for 1 RU frames

## SPECIFICATIONS

<b>Video Inputs</b>	3G/HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 - 64	<b>Outputs</b>	DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120 m at 2.97 Gbps 140m at 1.48 Gbps 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>On Screen Display</b>	Borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, audio meters, alarm tags. Skin Technology for customizing UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 144 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or RS485 option Connector: RJ45, Baud Rate up to 115200 Protocol, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	25W, 100W, 200W, or 400W 90 - 250V 50/60 Hz
<b>Impedance</b>	75	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power Redundancy</b>	Optional power supplies for all 1 RU units Standard with all other models
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	1/2 width of 1RU - 21.5cm (8.5") W x 37cm (14.6") D 1 RU - 44.5cm (17.5") W x 50cm (19.7") D 2 RU - 44.5cm (17.5") W x 60cm (23.6") D 4 RU - 44.5cm (17.5") W x 60cm (23.6") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

# ARCHITECTURE CONCEPT

## TAHOMA Classic Platform Consists of Several Electronic Elements

### URM - Universal Receiver Module

- URME - for SDI and Composite inputs
- URMI - for LI Series with looping inputs
- URMU - for Universal Inputs (HDMI/DVI/VGA/YPbPr/Composite)

### VPM - Video Processing Module

- Processes and scales 4 video inputs
- On-screen elements (borders, labels, meters, clocks, etc.) over the background or the output of an upstream VPM
- De-embeds SDI audio
- 8 GPI inputs for tallies/counters, control
- Processes optional AA/AES audio inputs

### CPM - Control Module

- Manages serial and IP interfaces
- 8 GPI/O for control and trigger
- LTC input
- AA/AES monitoring outputs

### FPM - Front Panel Module

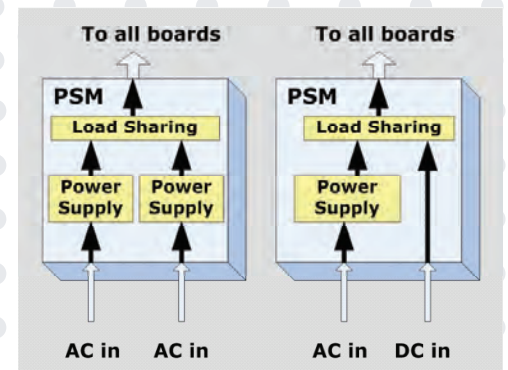
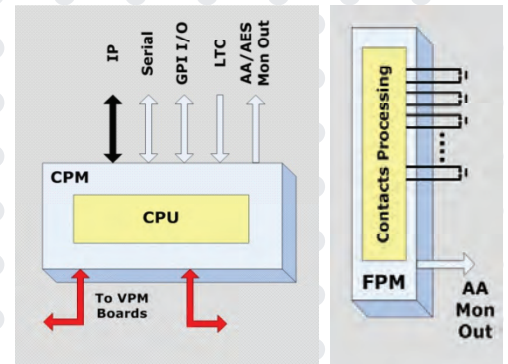
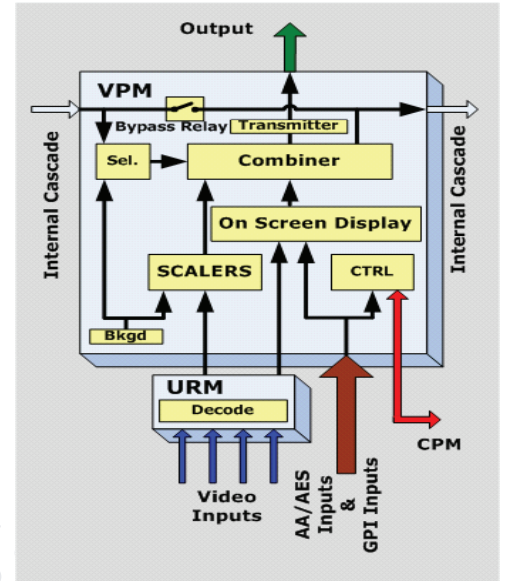
- Handles the front panel buttons (preset recall)
- LED status for power supply and video status
- Front AA monitoring output with volume adjustment

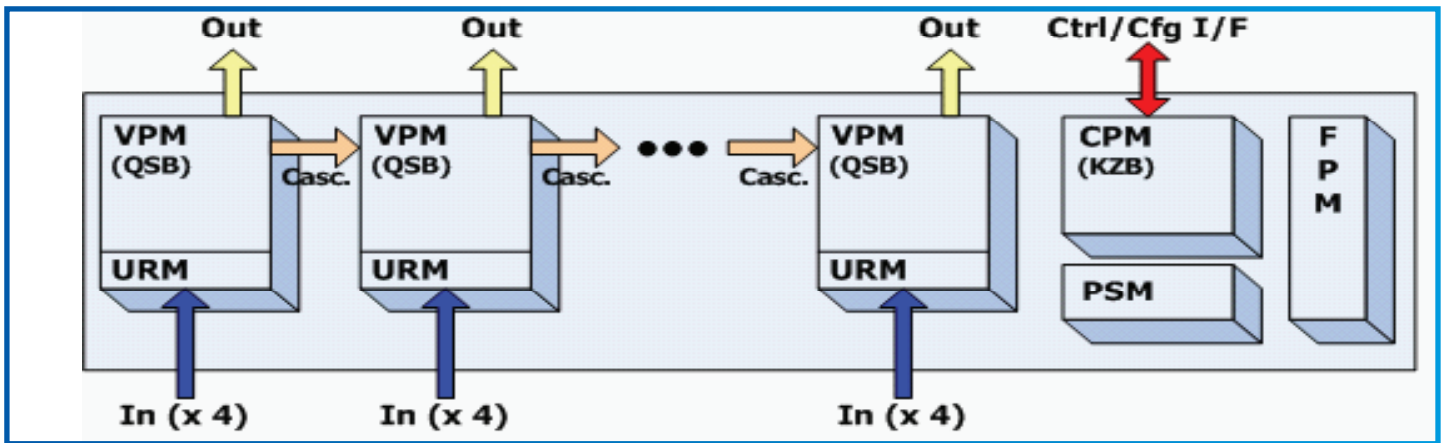
### PSM - Power Supply Module

- Load sharing redundant power supplies
- External redundant power supply for 1 RU models

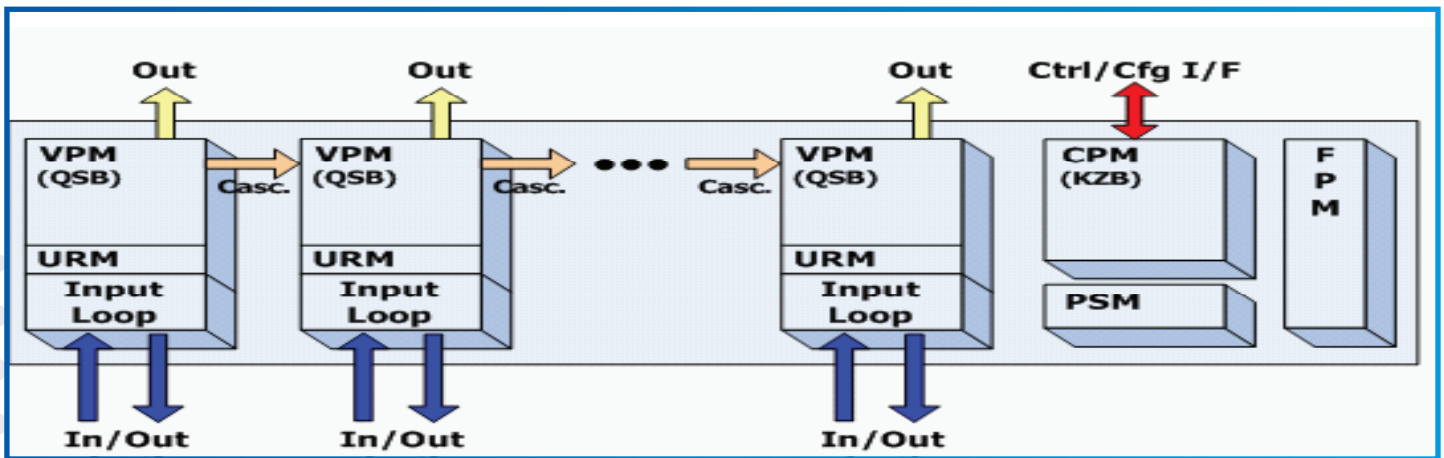
### MTX - Internal Matrix

- LX models only
- 16 x 16 or 32 x 32 internal matrix

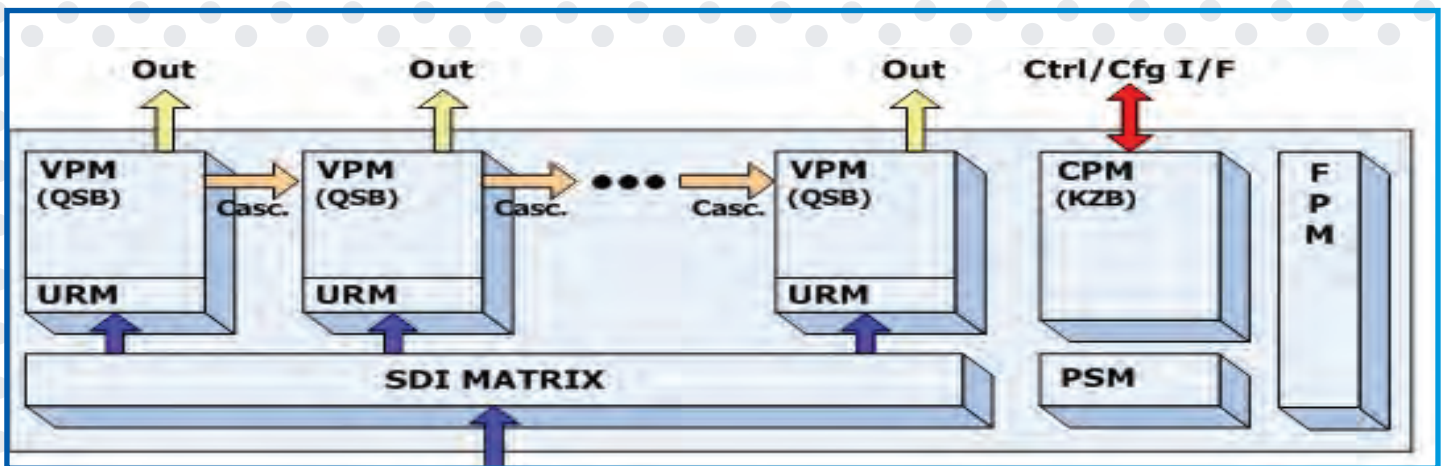




TAHOMA LE BLOCK DIAGRAM



TAHOMA LI BLOCK DIAGRAM

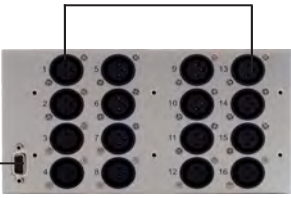


TAHOMA LX BLOCK DIAGRAM

# TAHOMA CLASSIC PLATFORM AUDIO OPTIONS

## The TAHOMA Classic Platform Audio Input Options

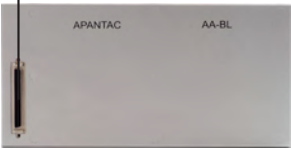
AA-BL - Analog Balanced  
**16 Balanced XLR**



GPI Pass through


FRONT

High Density Connection to VPM



REAR

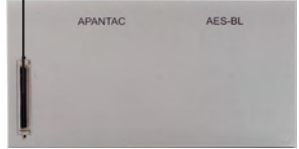
AES-BL - AES Balanced  
**8 Balanced XLR**



GPI Pass through


FRONT

High Density Connection to VPM



REAR


AA-UNBL - Analog Unbalanced  
**16 Unbalanced BNC**



GPI Pass through

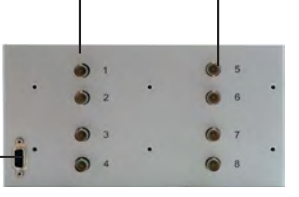
FRONT

High Density Connection to VPM



REAR


AES-UNBL - AES Unbalanced  
**8 Unbalanced BNC**



GPI Pass through

FRONT

High Density Connection to VPM



REAR





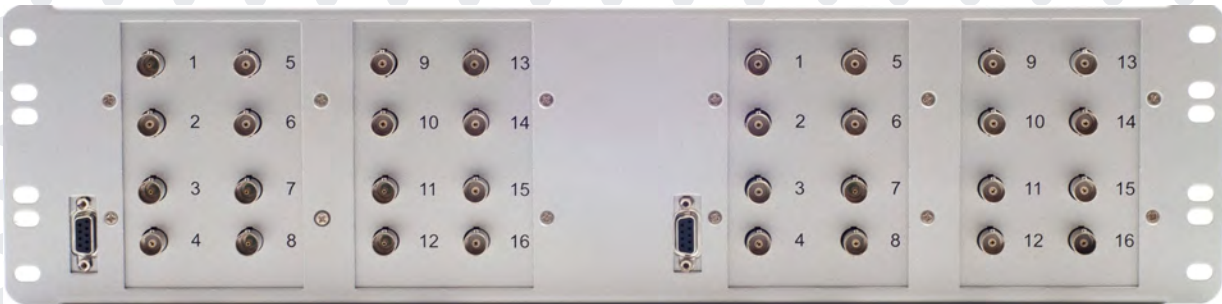
2 x AES-BL Rack Mounted



2 x AA-BL Rack Mounted



2 x AES-UNBL Rack Mounted



2 x AA-UNBL Rack Mounted

# TAHOMA CLASSIC PLATFORM AUDIO OPTIONS

16 Balanced AA

GPI Pass through

FRONT

High Density Connection to VPM

REAR

2 AA-BL-S Rack Mounted

Balanced AA Option with Phoenix Connectors

8 Balanced AES

GPI Pass through

FRONT

High Density Connection to VPM

REAR

2 AES-BL-S Rack Mounted

Balanced AES Option with Phoenix Connectors

16 unbalanced AA

GPI Pass through

FRONT

High Density Connection to VPM

REAR

2 AA-UNBL-S Rack Mounted

Unbalanced AA Option with Phoenix Connectors

8 Unbalanced AES

GPI Pass through

FRONT

High Density Connection to VPM

REAR

2 AES-UNBL-S Rack Mounted

Unbalanced AES Option with Phoenix Connectors

# notes

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# LE-4 MULTIVIEWER

## Key Features

- Single frame processing delay
- 4 auto-detect HD/SD-SDI, PAL/NTSC inputs (3G ready)
- Available in 3 versions: Composite, SD-SDI & Composite, and HD/SD-SDI & Composite
- Upgrade from SD to HD, HD to 3G via software
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI, or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1/2 1 RU with optional redundant power supply
- 3 year limited warranty

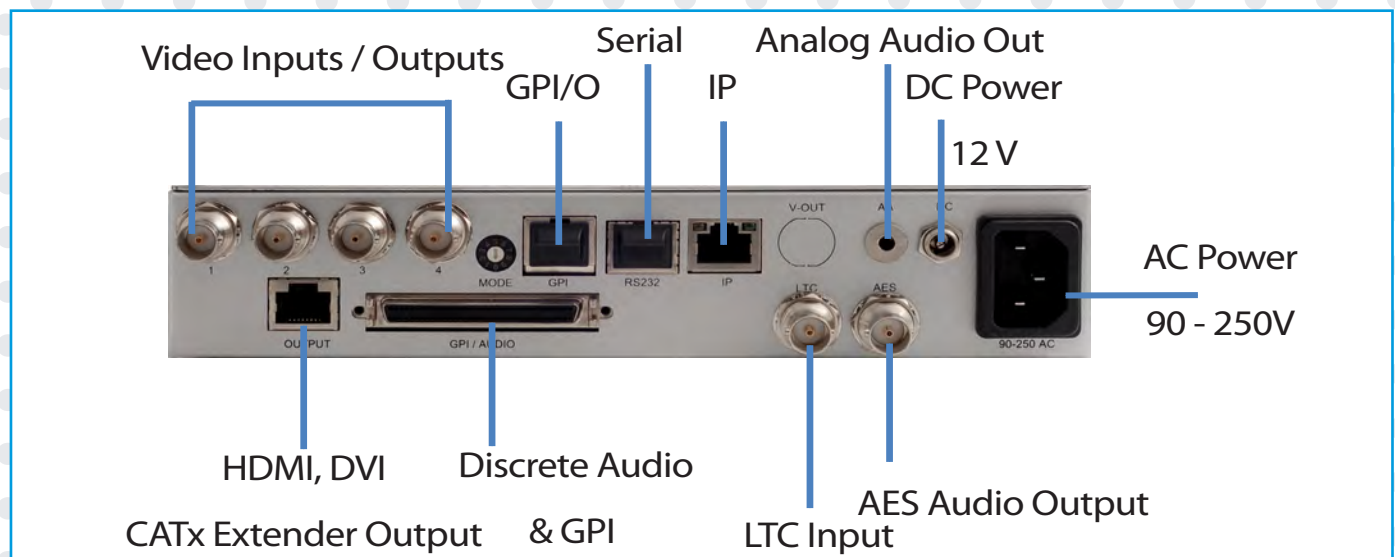
## Accessories

### Standard

- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

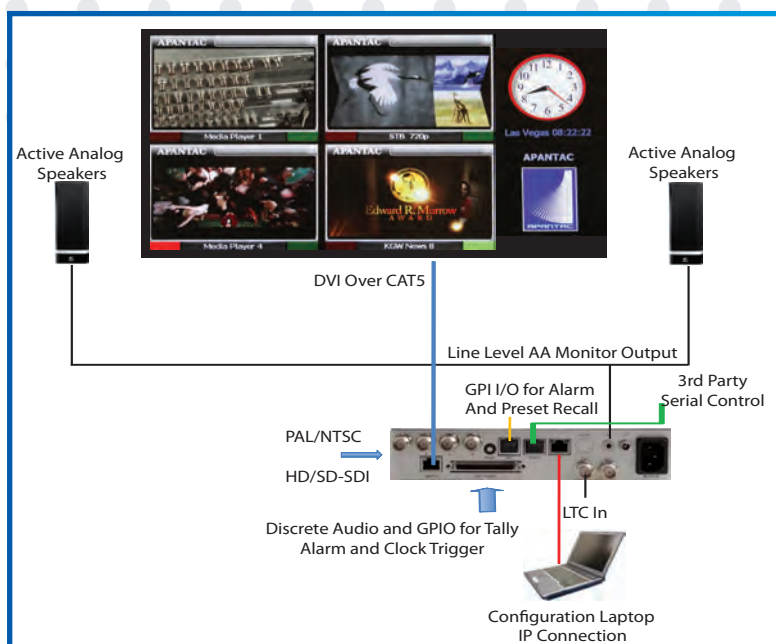
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply





## SPECIFICATIONS

<b>Video Inputs</b>	3G/HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Stereo Audio</b>	4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4		
<b>Serial Digital</b>	HD-SDI (SMPTE-292M) and/or SD-SDI (SMPTE-259M-C)	<b>Outputs</b>	1 DVI, HDMI, VGA (option), 1 SDI (option)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>Built-in CATx Extender</b>	Up to 35 feet - Extend up to 115 feet (with optional active receiver)
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>General Purpose IO</b>	16 inputs with DB9 connectors
<b>Signal Level</b>	1V nominal	<b>Serial Port</b>	RS232 with RS422 or RS485 option Connector: RJ45 Baud Rate up to 115200 Supported Protocols: TSL, TSI, AXP
<b>DC Offset</b>	0V, + - 0.1V	<b>IP</b>	100 Base-TX, Supported Protocols: TSL, AXP, Connector: RJ45
<b>Impedence</b>	75 ohm	<b>Electrical</b>	25W, 90-250V 50/60 Hz
<b>Return Loss</b>	40db up to 5MHz	<b>EMI/RFI</b>	Complies with FCC Part 15, Class A, CE, EU EMC, C-tick
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Power</b>	Optional redundant power supply
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (config & control app)	<b>Size</b>	1/2 width of 1RU 21.5cm (8.5") W x 37cm (14.6") D



**TAHOMA LE-4 with 1 Output**

# LE-8 / 12/ 16 MULTIVIEWER

## Key Features

- Single frame processing delay
- 4 -16 auto-detect HD/SD-SDI, PAL/NTSC inputs (3G ready)
- Upgradable to supports 4K/UHD inputs
- Available in 3 versions: Composite, SD-SDI & Composite, and HD/SD-SDI & Composite
- Upgrade from SD to HD, HD to 3G via software
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply

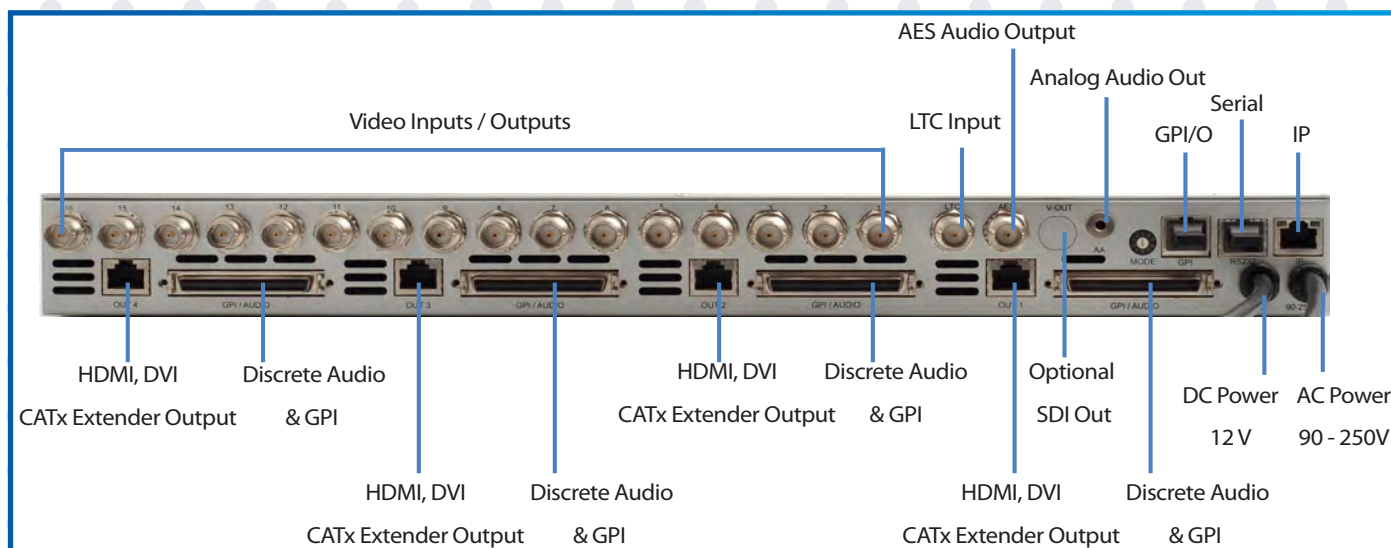
## Accessories

### Standard

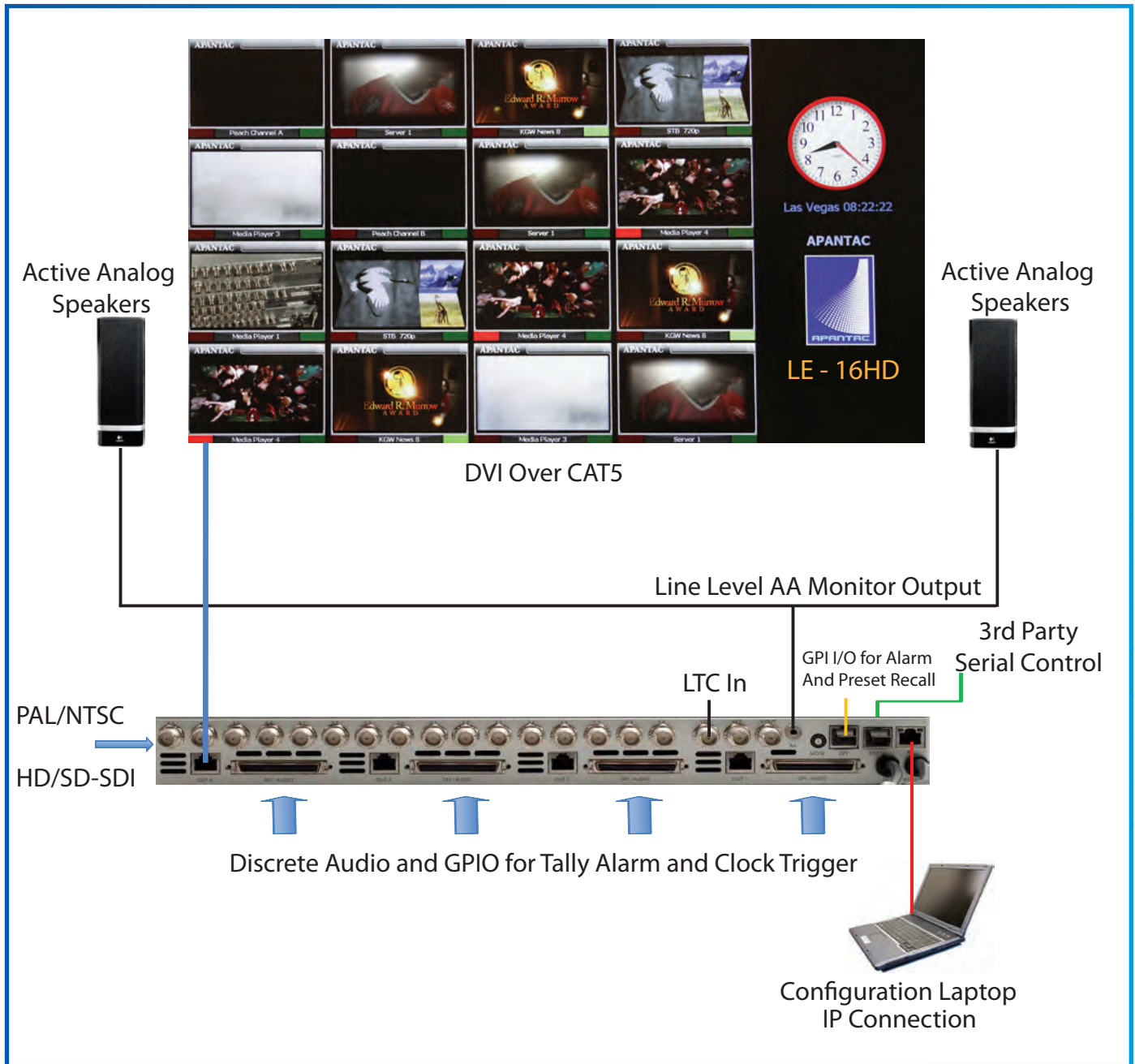
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply

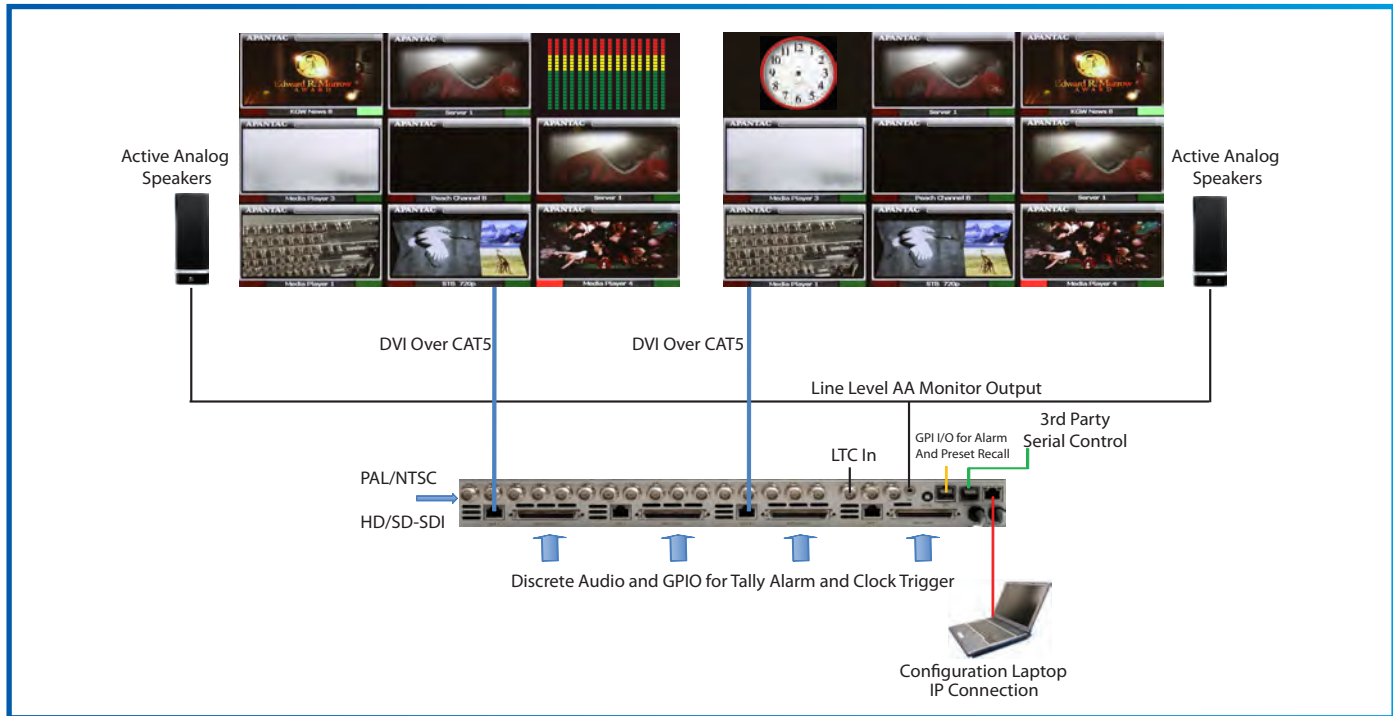


## TAHOMA LE-16 with Single Output



## LE-8 / 12/ 16 MULTIVIEWER

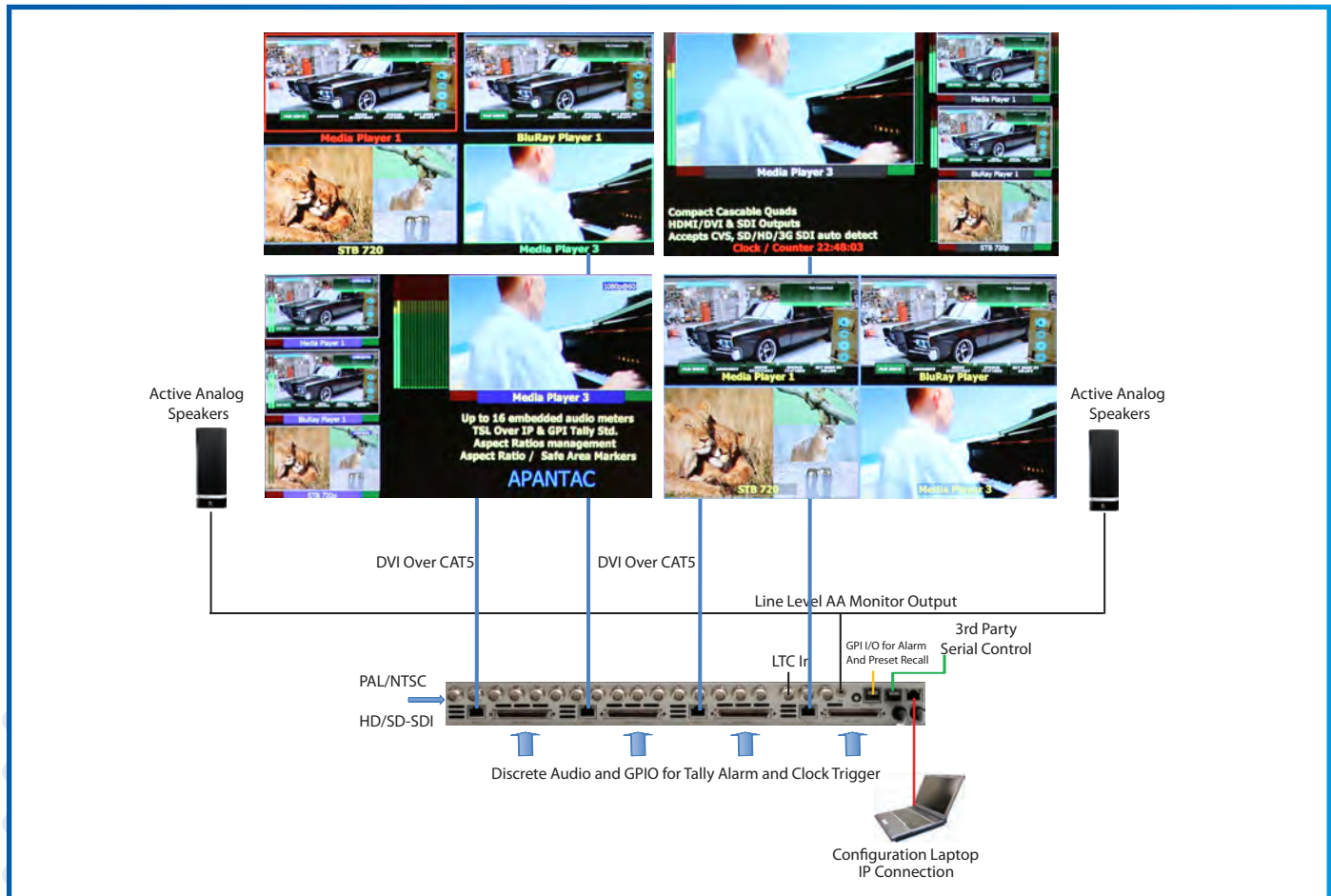
## TAHOMA LE-16 with Two Outputs



## SPECIFICATIONS

<b>Video Inputs</b>	Up to 16 HD/SD-SDI, composite	<b>Discrete AES Audio</b>	Up to 4 channels/video input (2 pairs, balanced/unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels/video input (2 pairs, balanced/unbalanced)
<b>Total Windows</b>	4, 8, 12 or 16	<b>Outputs</b>	1-4 DVI, HDMI, VGA (option), 1 SDI (option)
<b>Serial Digital</b>	SMPTE 424M, SMPTE 292M, SMPTE 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.485 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Extender (option)
<b>Return Loss</b>	> 15db up to 1.5 Gbps< > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 144 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	400W, 90 - 250V 50/60 Hz
<b>Impedence</b>	75 Ohm	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power</b>	Redundant Power Supplies
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	4 RU, 44.5 cm (17.5") W x 60 cm (23.6") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

## TAHOMA LE-16 with Four Outputs



**The TAHOMA-LE-16 Multiviewer has 4 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p).**

The following table shows all of the various output configurations:

OUTPUTS	1	2	3	4
	4	4	4	4
	4	4	8	
INPUTS	8		8	
	12			4
	16			

**The TAHOMA-LE-16 1 RU frame also supports the following models:**

- TAHOMA-LE-8 - 8 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-12 - 12 auto-detect HD/SD-SDI, PAL/NTSC inputs

# LE -20 / 24 / 28 / 32 MULTIVIEWER

## Key Features

- Single frame processing delay
- 16 -32 auto-detect HD/SD-SDI, PAL/NTSC inputs (3G Ready)
- Upgradable to support 4K/UHD inputs
- Available in 3 versions: Composite, SD-SDI & Composite, and HD/SD-SDI & Composite
- Upgrade from SD to HD, HD to 3G via software
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply

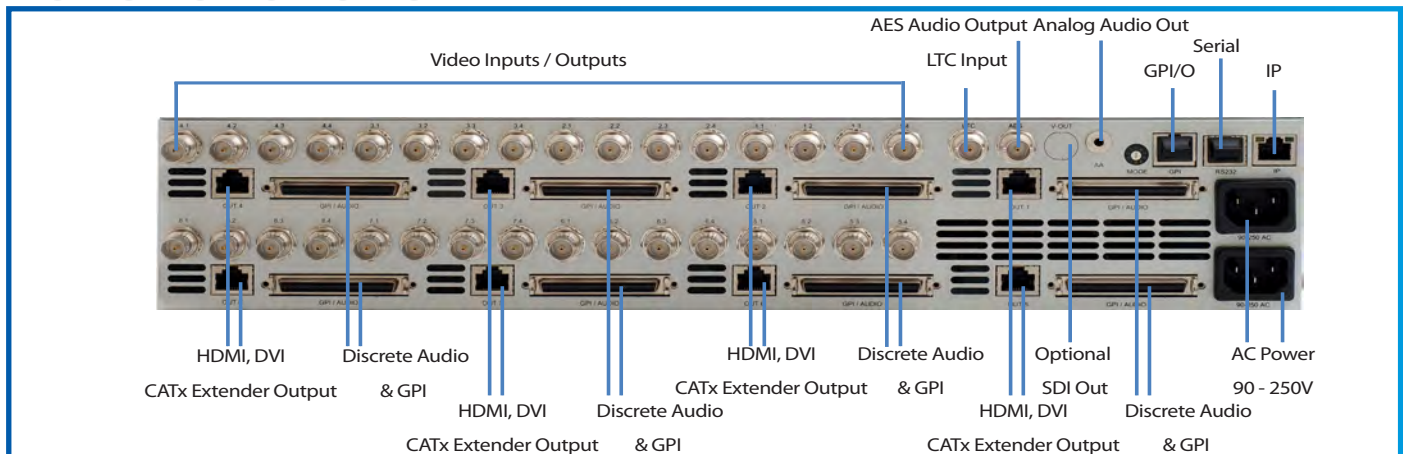
## Accessories

### Standard

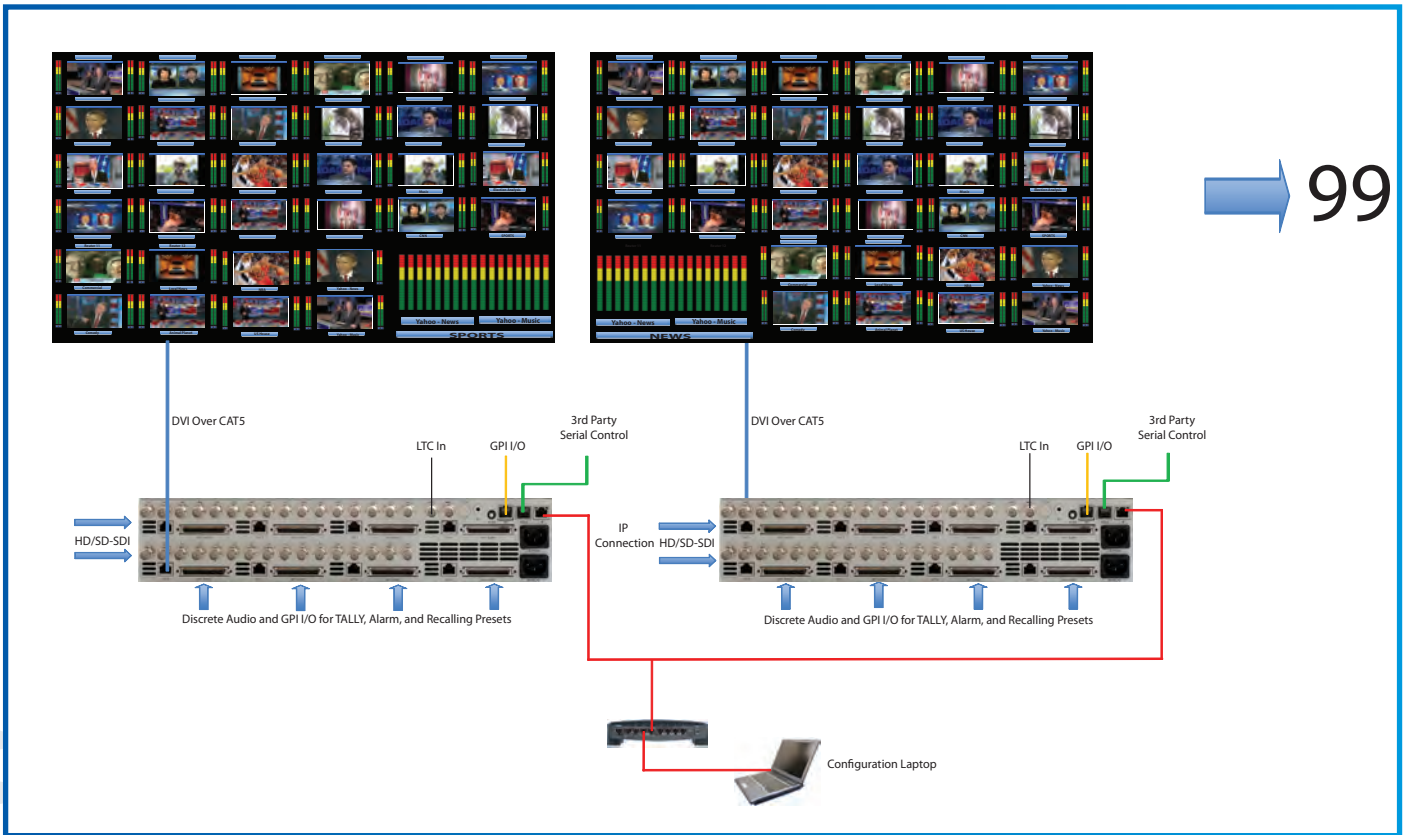
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

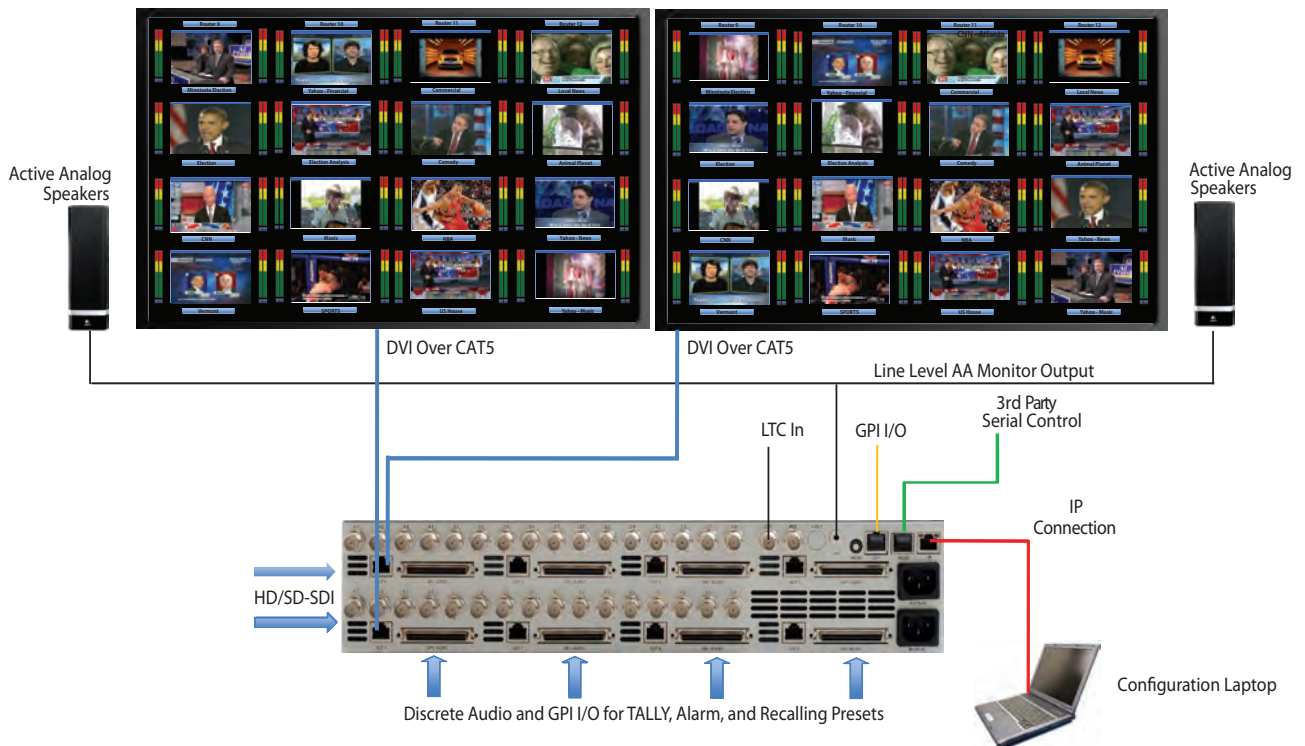
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply



## 2 x TAHOMA LE-32 on the Same Network

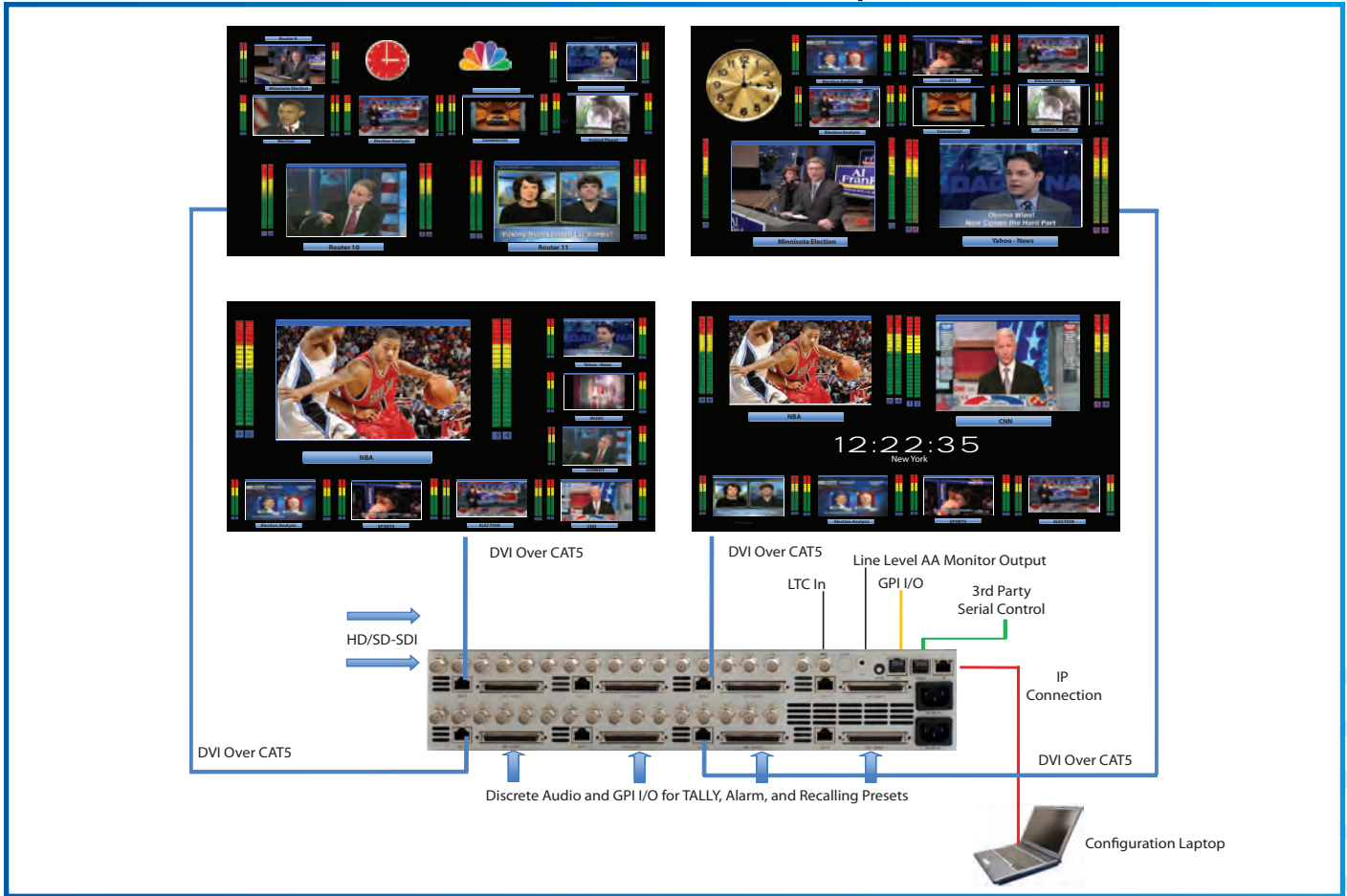


## TAHOMA LE-32 with Two Outputs



# LE -20 / 24 / 28 / 32 MULTIVIEWER

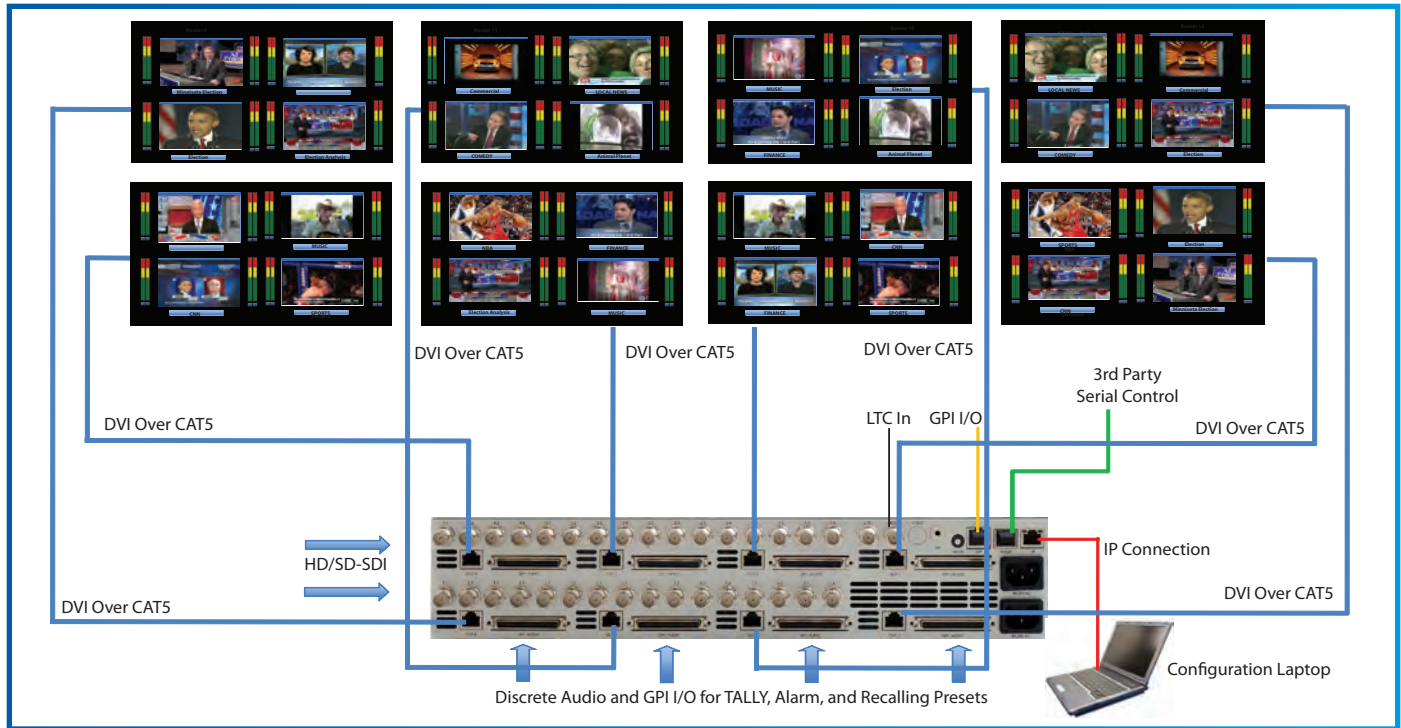
TAHOMA LE-32 with Four Outputs



FLEXIBLE OUTPUTS									
OUTPUTS	1	2	3	4	5	6	7	8	
	4	4	4	4	4	4	4	4	
	4	4	4	4	4	4	8		
	4	4	4	4	8		8		
	4	4	8		8		8		
	8		8		8		8		
	4	8		8		12			
	4	4	8		16				
	8		12			12			
INPUTS	4	12			16				
	8		8			16			
	4	8			20				
	4	4	24						
	4	28							
	8		24						
	12			20					
	16				16				
						32			



## TAHOMA LE-32 with Eight Outputs



SPECIFICATIONS			
<b>Video Inputs</b>	Up to 32 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 - 32	<b>Outputs</b>	1-8 DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver Up to 300 feet with HDBaseT Extender Up to 1500 feet with Fiber Optic Extender
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 144 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	400W, 90 - 250V 50/60 Hz
<b>Impedance</b>	75	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power</b>	Redundant Power Supplies
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	4 RU, 44.5 cm (17.5") W x 60 cm (23.6") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

# LE -36 / 40 / 44 / 48 / 52 / 56 / 60 / 64 MULTIVIEWER

## Key Features

- Single frame processing delay
- 4 -64 auto-detect HD/SD-SDI, PAL/NTSC inputs (3G ready)
- Available in 3 versions: Composite, SD-SDI & Composite, and HD/SD-SDI & Composite
- Upgradable to support 4K/UHD inputs
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI, or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- Up to 4 RU with optional redundant power supplies
- 3 year limited warranty

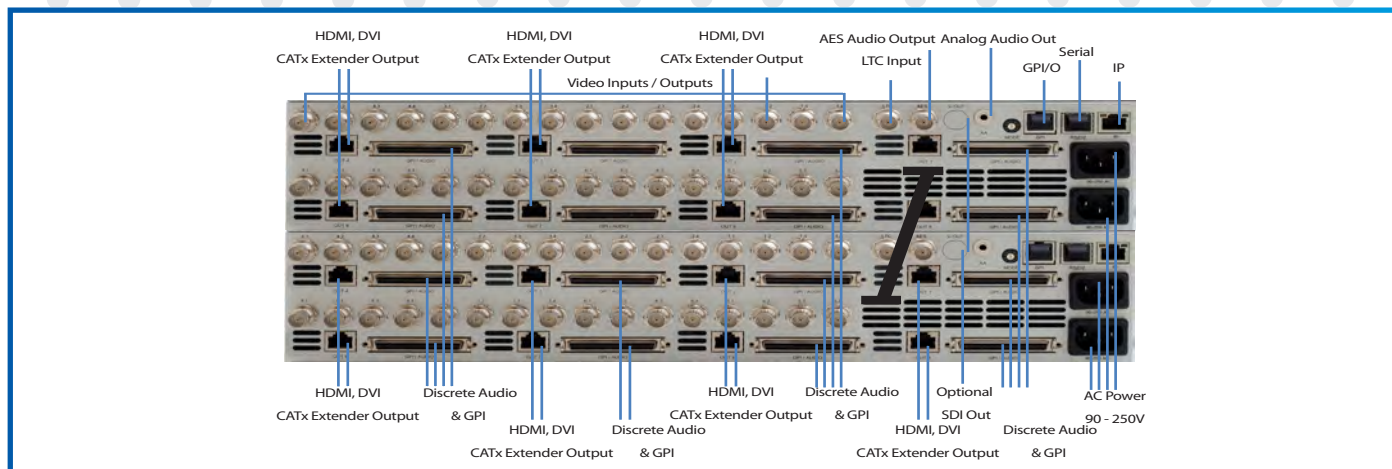
## Accessories

### Standard

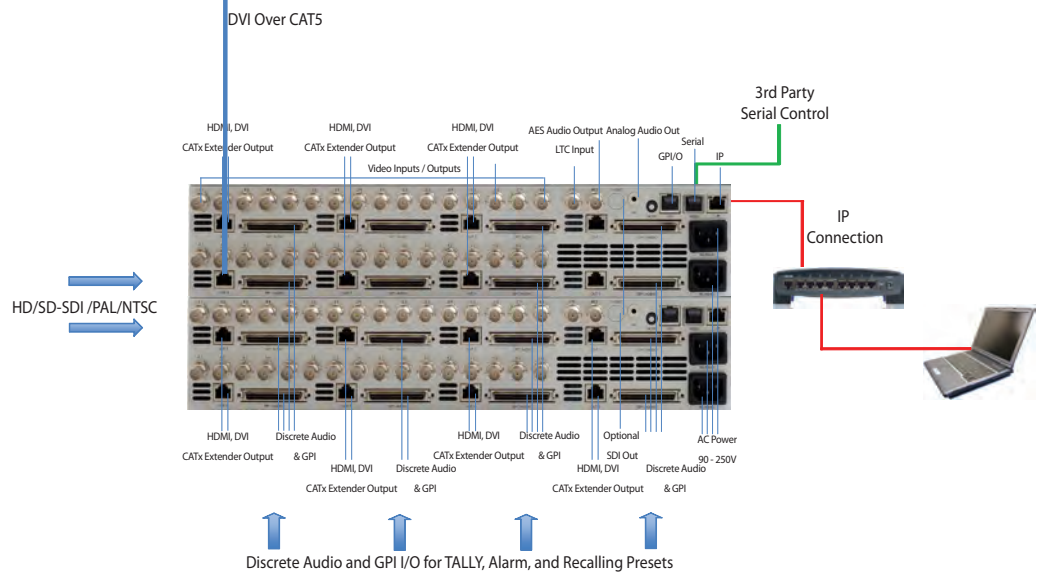
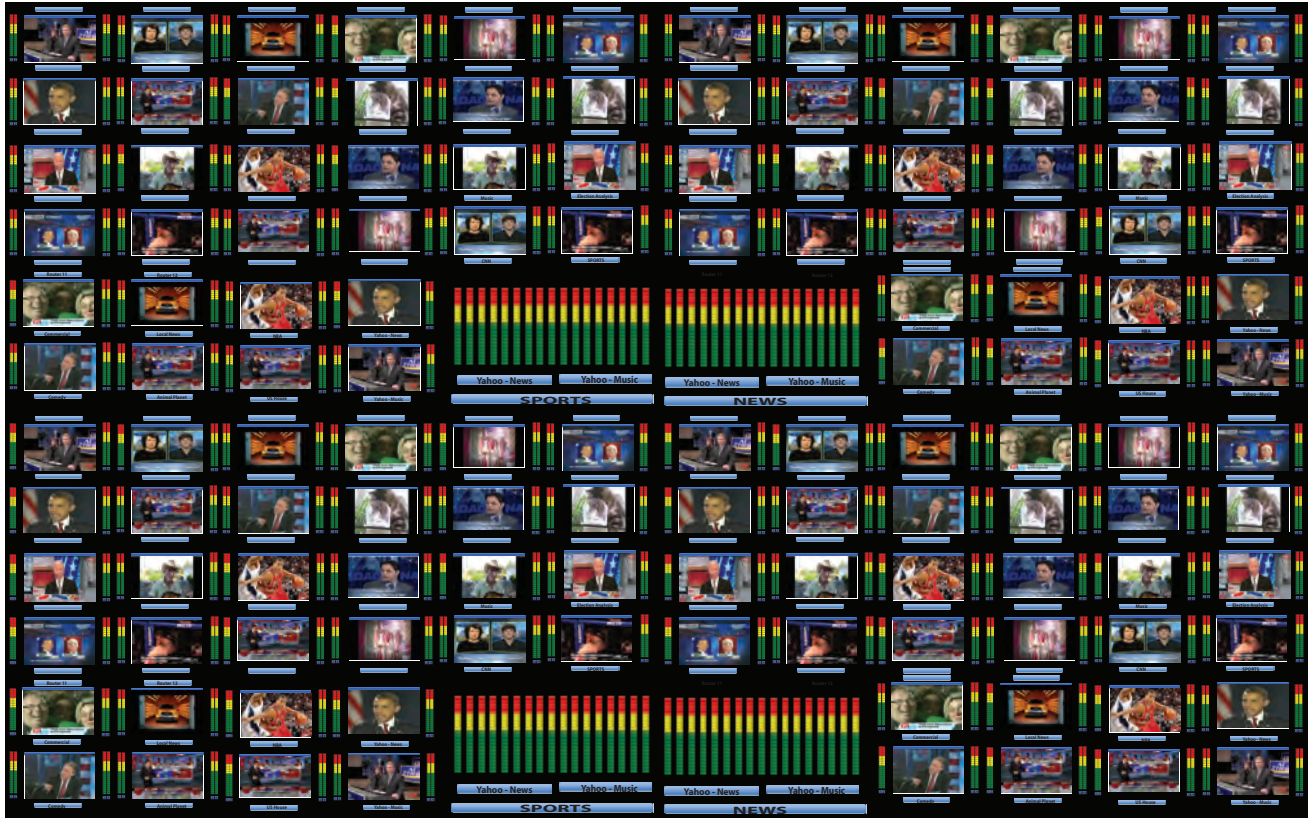
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply

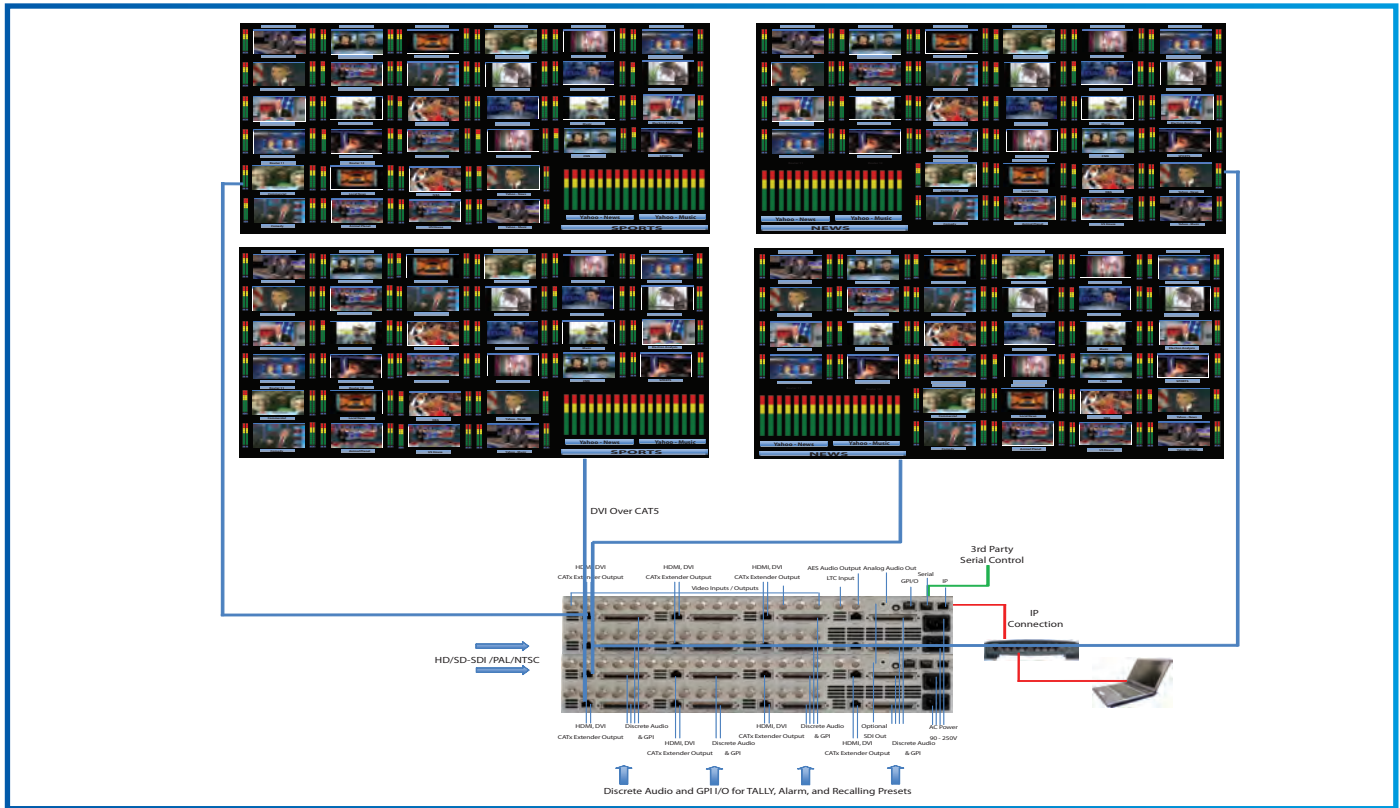


# TAHOMA LE-64 with One Output



# LE -36 / 40 / 44 / 48 / 52 / 56 / 60 / 64 MULTIVIEWER

## TAHOMA LE-64 with Four Outputs



### FLEXIBLE OUTPUTS

The TAHOMA-LE-64 4 RU Multiviewer has 16 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p). **The following table shows example of output configurations.**

OUTPUTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INPUTS	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	8		8		8		8		8		8		8		8	
	8		8		12		12		12		12		12		12	
	4		12		12		12		12		12		12		12	
		12		12		12		12		12		12		16		16
		8		12		12		16		16		16		16		16
		4		12		16		16		16		16		16		16
			16		16		16		16		16		16		16	
			12		16		16		16		20		20		20	
			8		16		20		20		20		20		20	
			4		20		20		20		20		20		20	
			8		8		24		24		24		24		24	
				16		24		24		24		24		24		24
			8			28		28		28		28		28		28
			4	4			28		28		28		28		28	
						32		32		32		32		32		32

The TAHOMA LE-64 4 RU Frame also supports the following models:

- TAHOMA-LE-40 - 40 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-44 - 44 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-48 - 48 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-52 - 52 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-56 - 56 auto-detect HD/SD-SDI, PAL/NTSC inputs
- TAHOMA-LE-60 - 60 auto-detect HD/SD-SDI, PAL/NTSC inputs

## SPECIFICATIONS

<b>Video Inputs</b>	Up to 64 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 - 64	<b>Outputs</b>	DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Extender (option)
<b>Return Loss</b>	> 15db up to 1.485 Gbps < > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 144 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	400W, 90 - 250V 50/60 Hz
<b>Impedence</b>	75 ohm	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power</b>	Redundant Power Supplies
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	4 RU, 44.5 cm (17.5") W x 60 cm (23.6") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

# LI-4 / 8 MULTIVIEWER WITH LOOPING INPUTS

## Key Features

- Input looping capabilities - for further distribution of signal
- Single frame of processing time
- 4 - 8 auto-detect HD/SD-SDI inputs (3G ready) with active loop
- 4 - 8 auto-detect PAL/NTSC composite inputs with passive input loop
- Available in HD/SD-SDI and composite models
- Upgrade from SD to HD, HD to 3G via software
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 3 year limited warranty

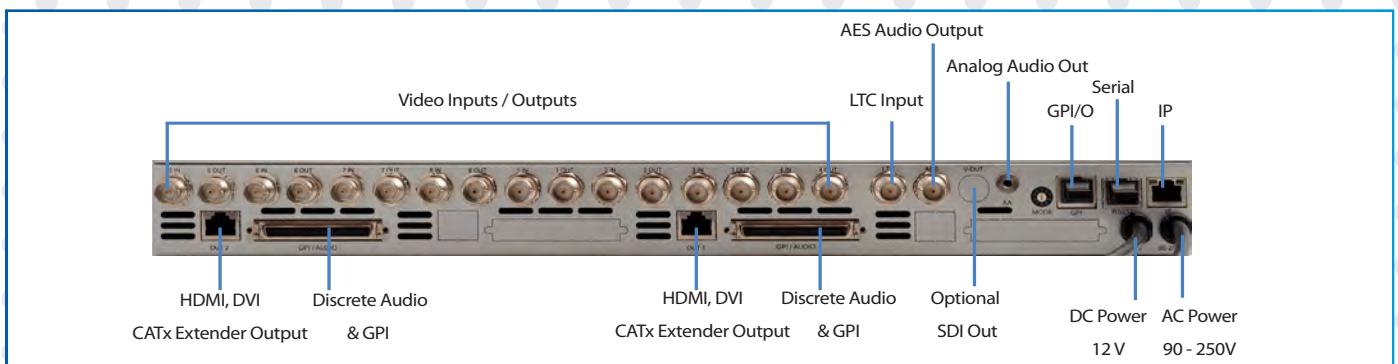
## Accessories

### Standard

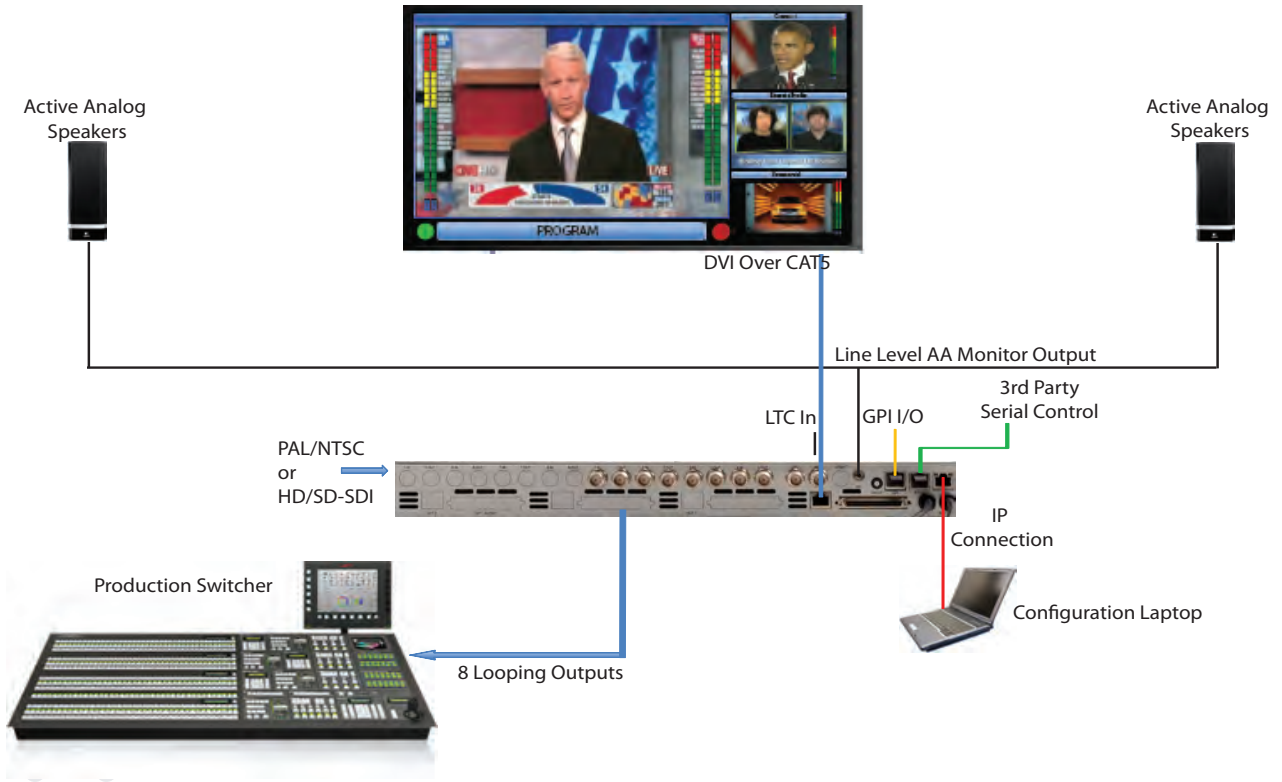
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

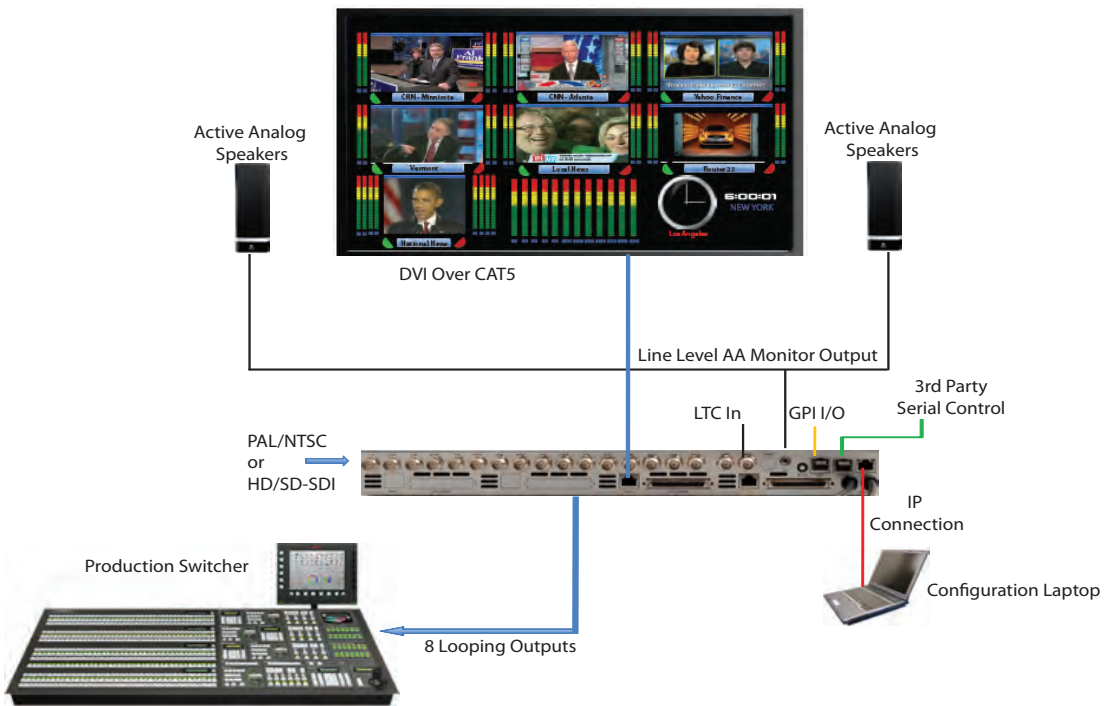
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply



## TAHOMA LI-4 with One Output

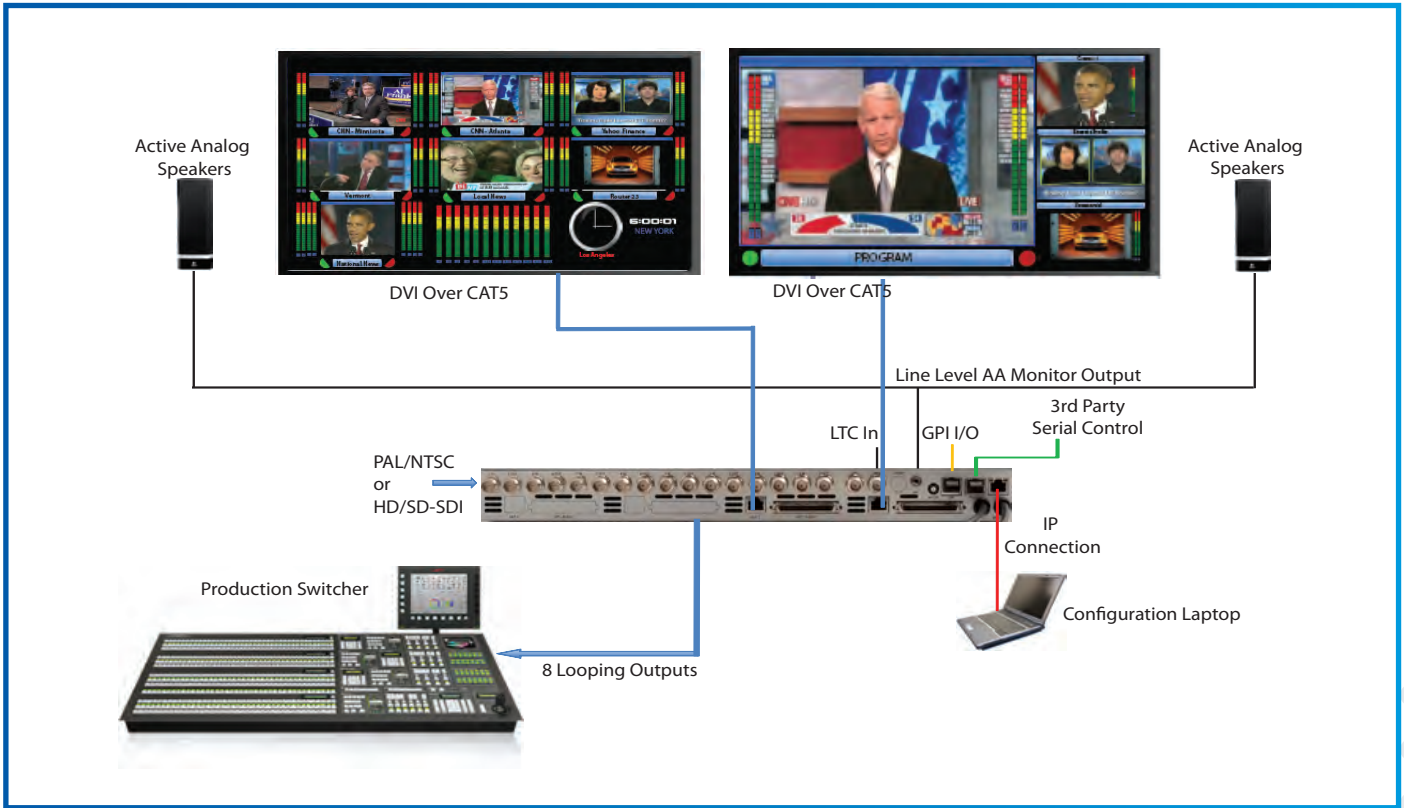


## TAHOMA LI-8 with One Output

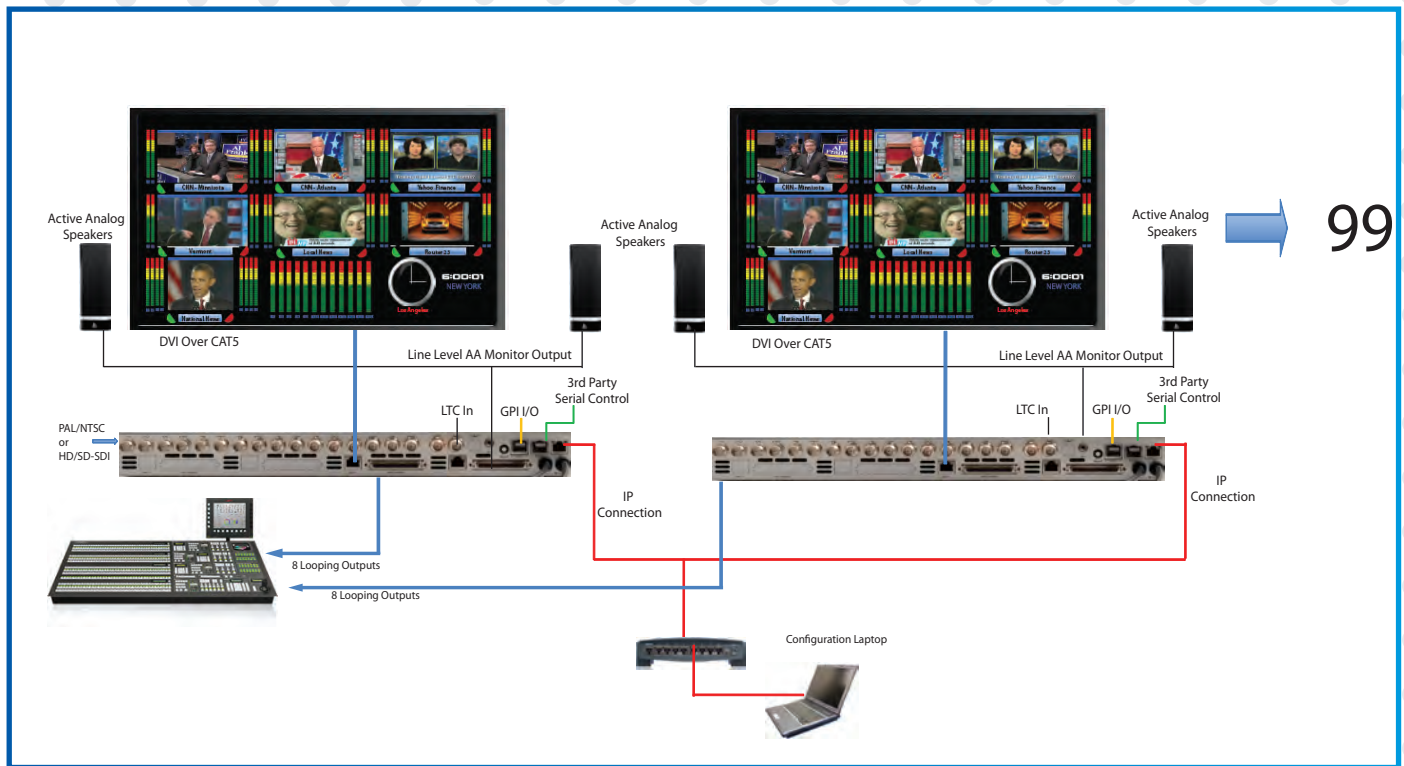


# LI-4 / 8 MULTIVIEWER WITH LOOPING INPUTS

## TAHOMA LI-8 with Two Outputs



## 2 x TAHOMA LI-8 on the Same Network





### FLEXIBLE OUTPUTS

The TAHOMA-LI 1RU Multiviewer has 2 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p). **The following table shows example of output configurations.**

OUTPUTS	1	2
INPUTS	4	4
	8	

Looping video (LI) inputs for further distribution or duplication of inputs - including 3G up to 140 meters

### SPECIFICATIONS

<b>Video Inputs (Looping)</b>	Up to 8 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 or 8	<b>Outputs</b>	1 -2 DVI, HDMI, VGA (option), 1 SDI (option)
<b>Serial Digital</b>	HD-SDI (SMPTE-292M) and / or SD-SDI (SMPTE-259M-C)	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in CATx Extender</b>	Up to 35 feet. Extend up to 115 feet (with optional active receiver)
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 24 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, Supported Protocols: TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	100W, 90-250V 50/60 Hz
<b>Impedence</b>	75 ohm	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power</b>	Optional redundant power supply
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	1 RU, 44.5cm (17.5") W x 50cm (19.7") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

# LI-12 / 16 MULTIVIEWER WITH LOOPING INPUTS

## Key Features

- Input looping capabilities - for further distribution of signals
- Single frame of processing time
- 12 - 16 auto-detect HD/SD-SDI inputs (3G ready) with active loop
- 12 - 16 auto-detect PAL/NTSC composite inputs with passive input loop
- Available in HD/SD-SDI and composite models
- Upgradable to support 4K/UHD inputs
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 2 RU with redundant power supply
- 3 year limited warranty

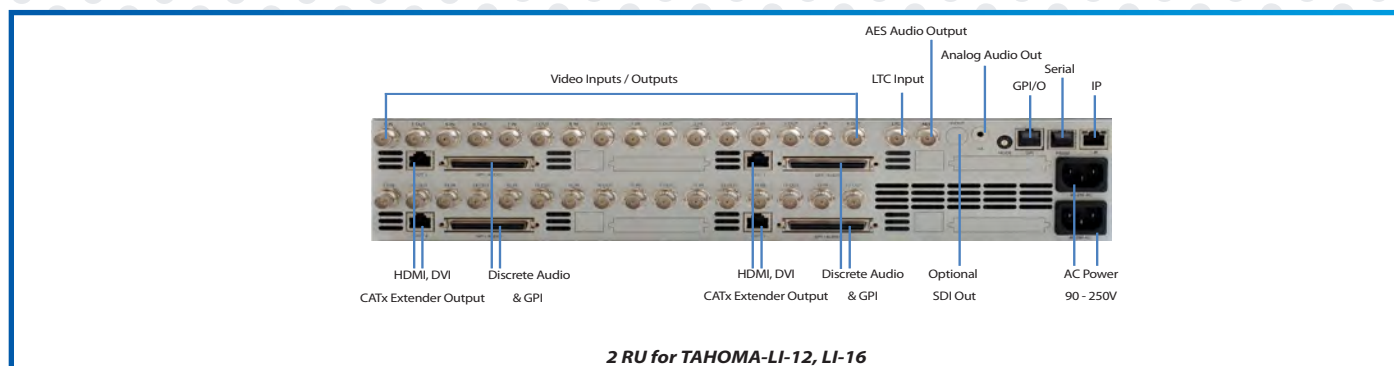
## Accessories

### Standard

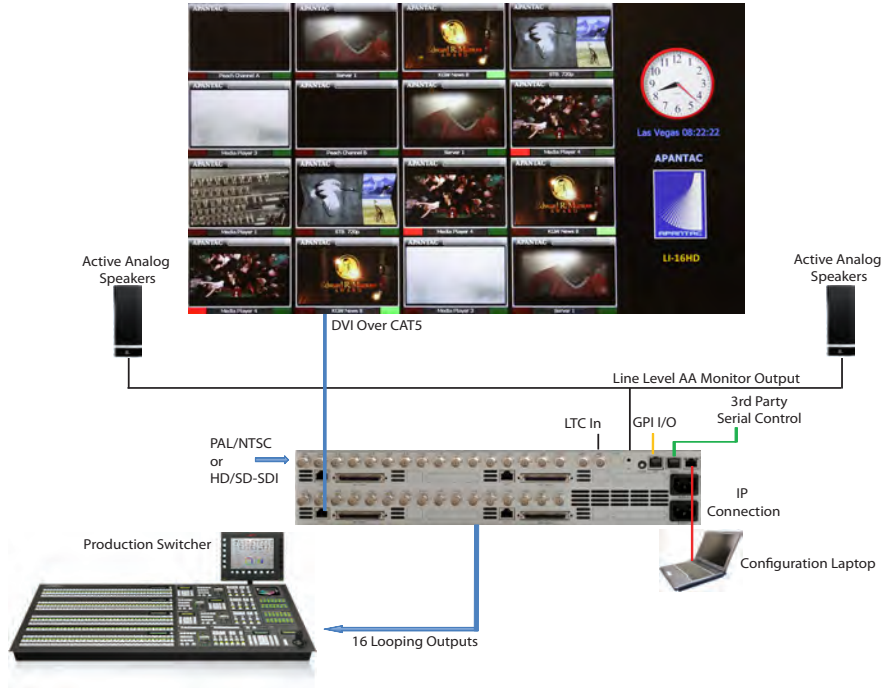
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

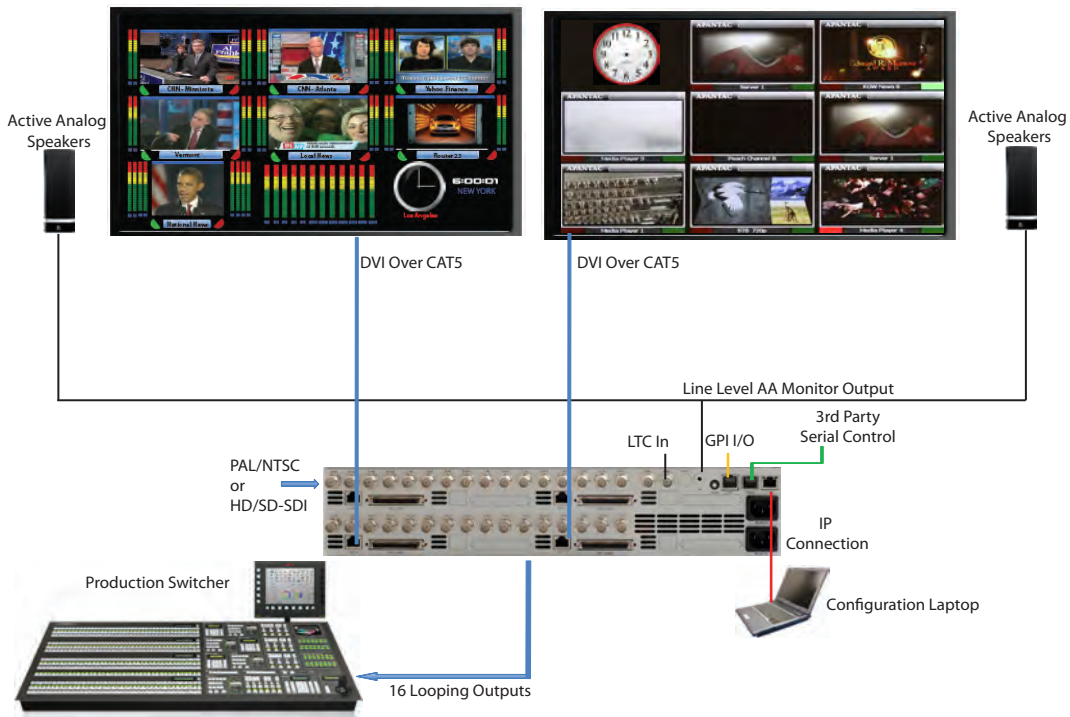
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply



## TAHOMA LI-16 with One Output

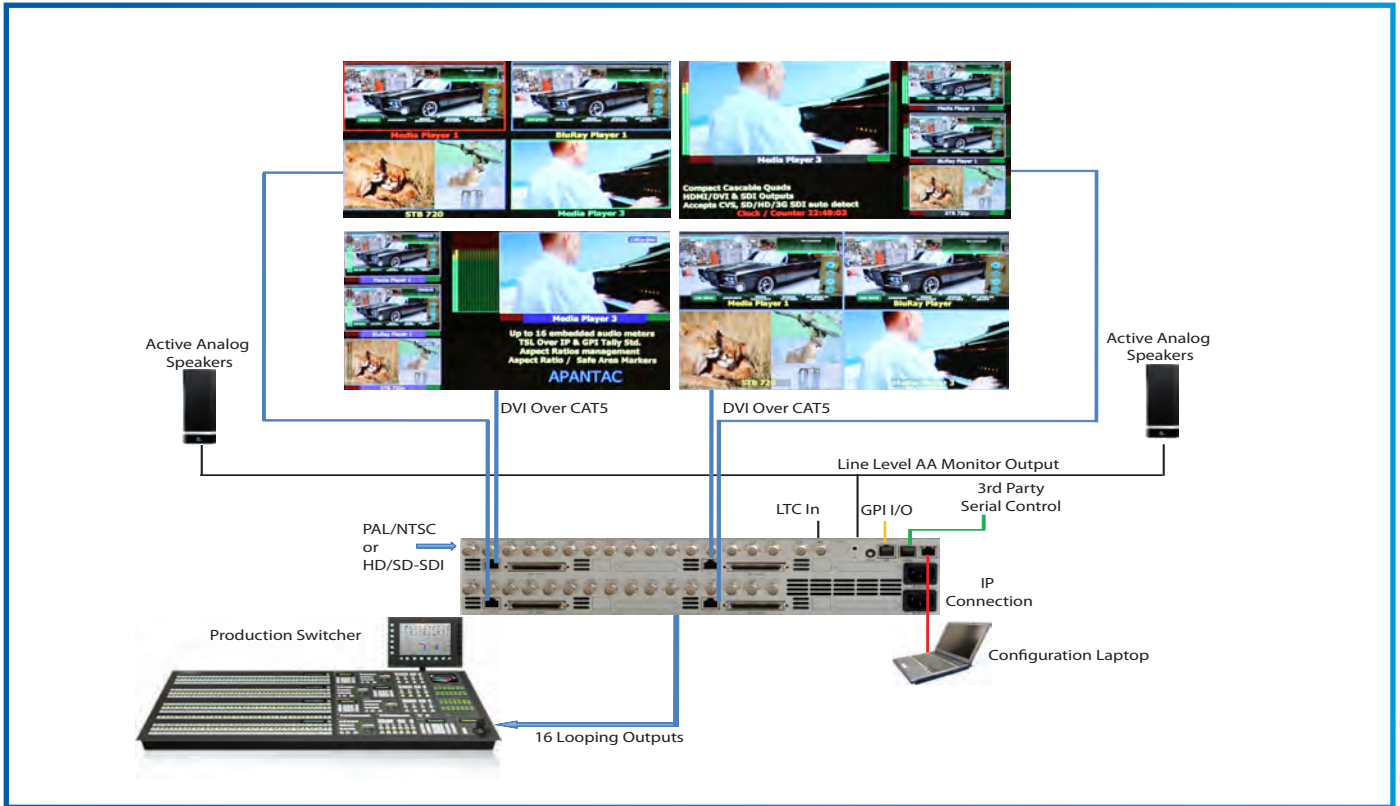


## TAHOMA LI-16 with Two Outputs

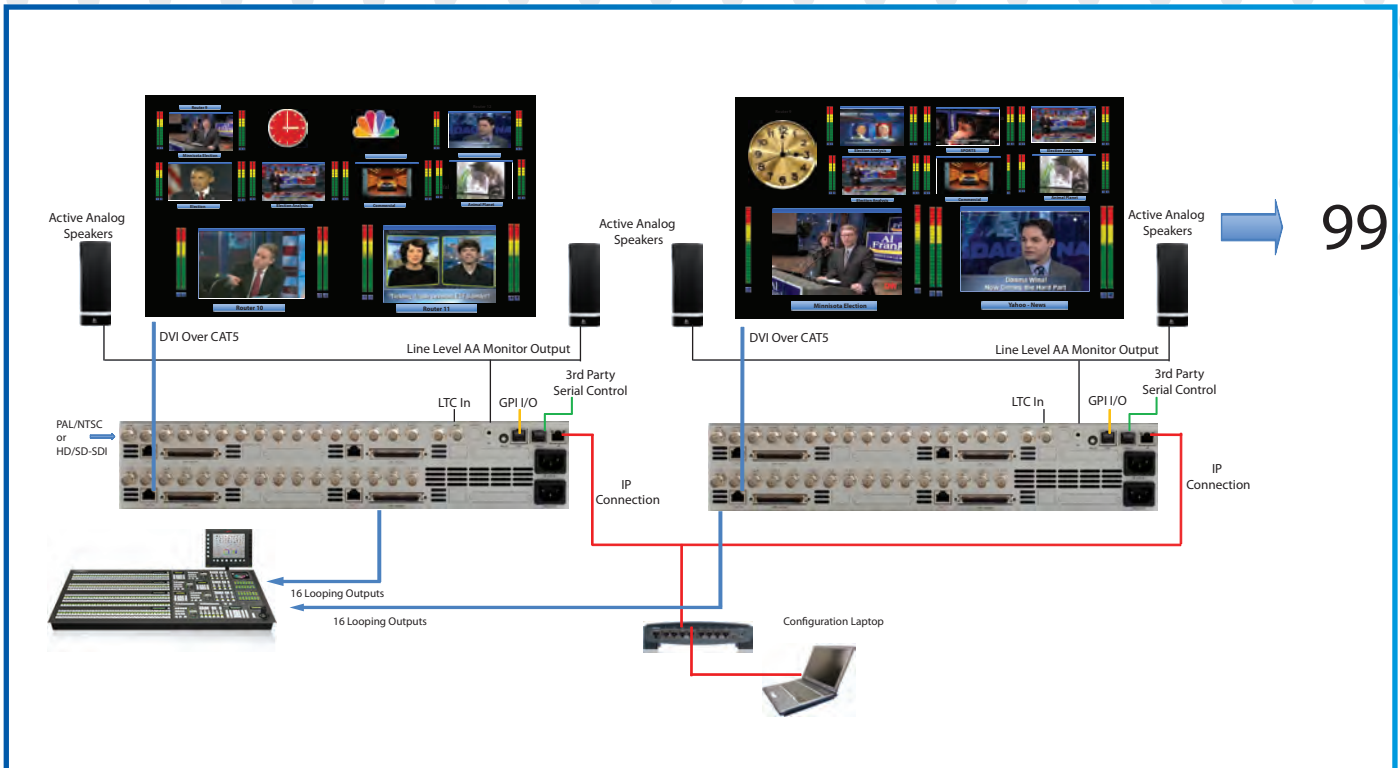


# LI-12 / 16 MULTIVIEWER WITH LOOPING INPUTS

## TAHOMA LI-16 with Four Outputs



## 2 x TAHOMA LI-16 on the same Network



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### FLEXIBLE OUTPUTS

The TAHOMA-LI 1RU Multiviewer has 2 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p). **The following table shows examples of output configurations.**

OUTPUTS	1	2	3	4
INPUTS	4	4	4	4
	4	4	8	
	8		8	
	12			4
	16			

### SPECIFICATIONS

<b>Video Inputs (Looping)</b>	Up to 16 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4, 8, 12 or 16	<b>Outputs</b>	1 -2 DVI, HDMI, VGA (option), 1 SDI (option)
<b>Serial Digital</b>	HD-SDI (SMPTE-292M) and / or SD-SDI (SMPTE-259M-C)	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in CATx Extender</b>	Up to 35 feet. Extend up to 115 feet (with optional active receiver)
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 24 inputs with DB9 connectors
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Signal Level</b>	1V nominal	<b>IP</b>	100 Base-Tx, Supported Protocols: TSL, AXP Connector: RJ45
<b>DC Offset</b>	0V, + - 0.1V	<b>Electrical</b>	200W, 90-250V 50/60 Hz
<b>Impedance</b>	75 ohm	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Return Loss</b>	40db up to 5MHz	<b>Power</b>	Optional redundant power supply
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Size</b>	2 RU, 44.5cm (17.5") W x 60cm (23.6") D
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)		

# LX-4 / 8 / 12 / 16 MULTIVIEWER WITH ROUTER

## Key Features

- Built-in routing switcher - any input can be switched to one or more image window regardless of output configuration
- Single frame of processing time
- 16 auto-detect HD/SD-SDI inputs (3G ready) with active loop
- Available in HD/SD-SDI models
- Upgradable to support 4K/UHD inputs
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 3 year limited warranty

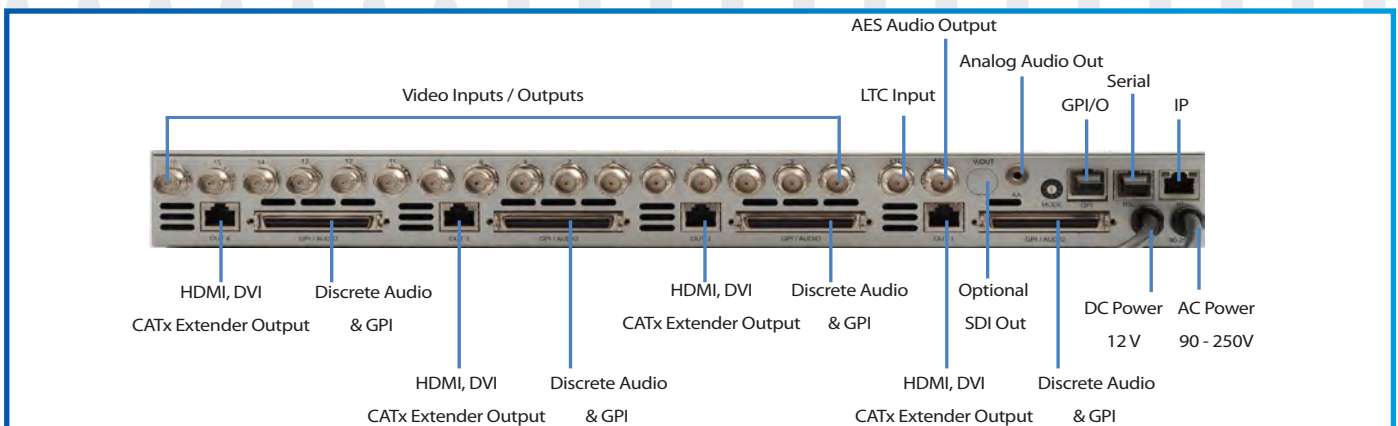
## Accessories

### Standard

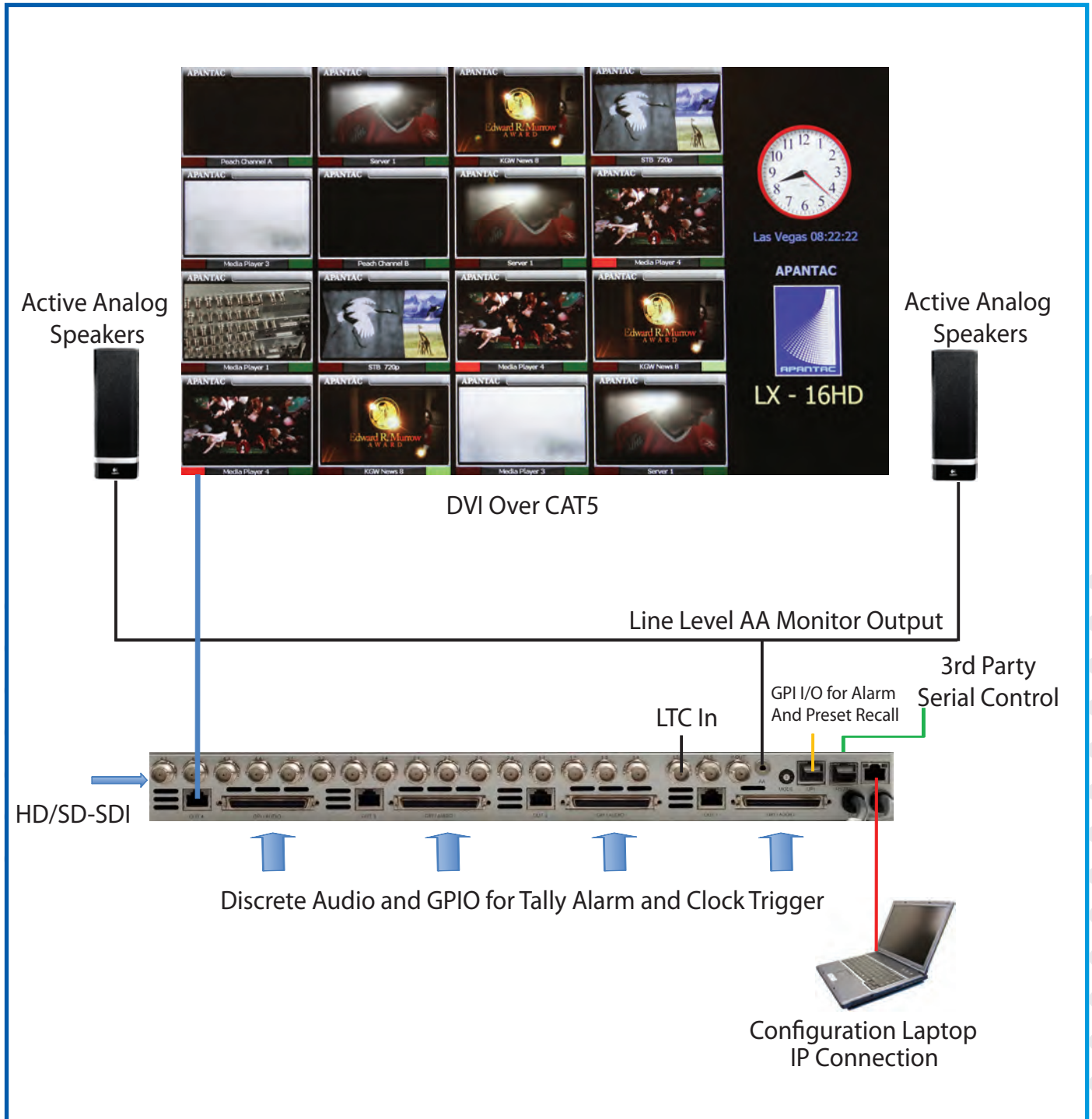
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply

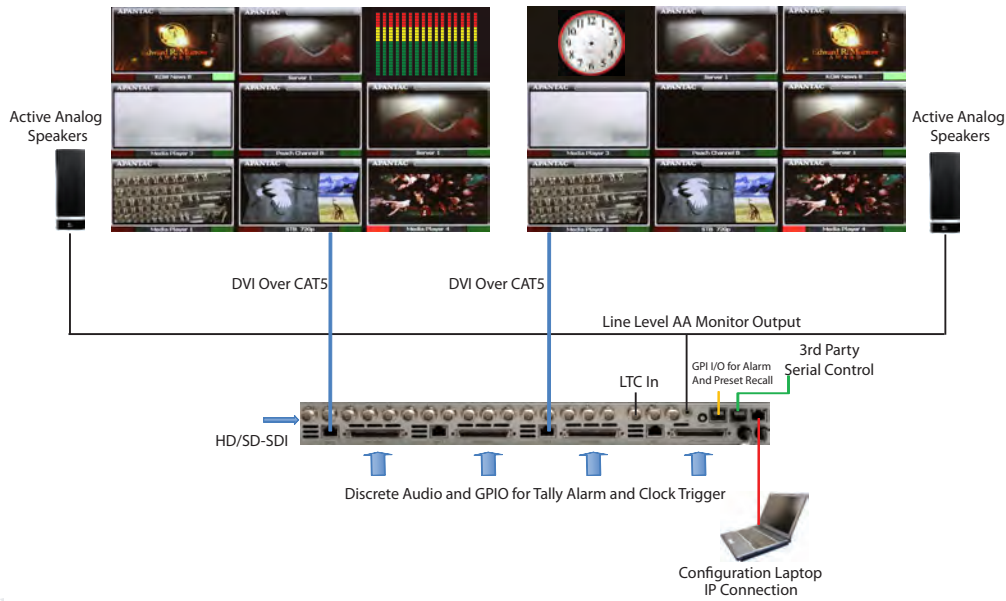


## TAHOMA LX-16 with One Output

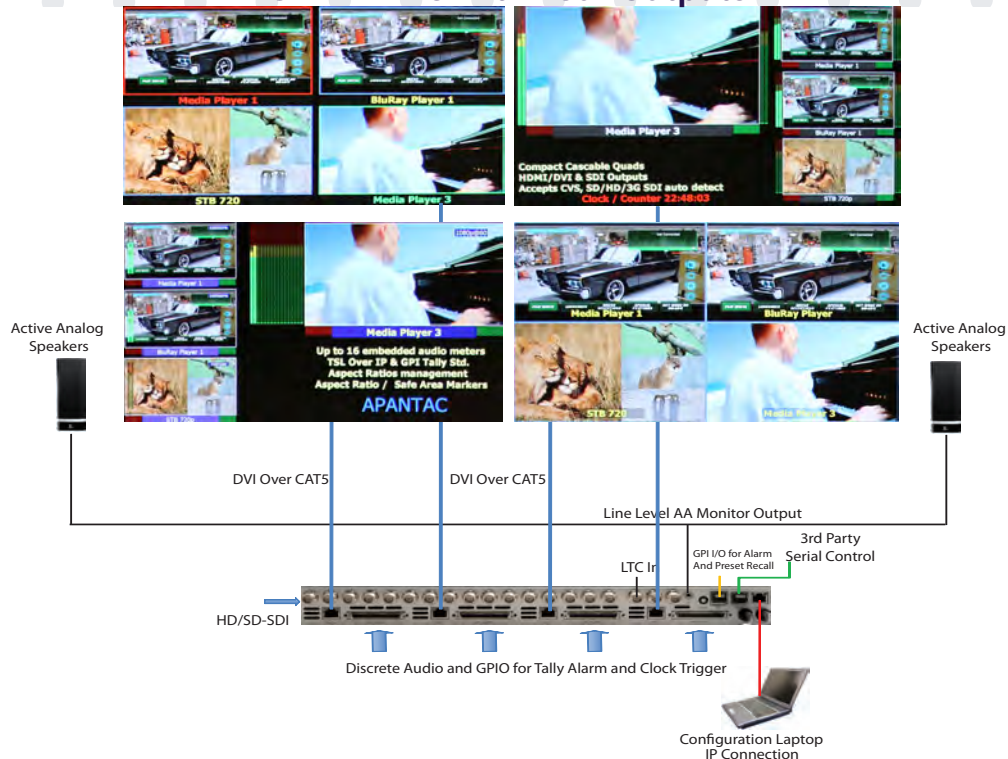


# LX-4 / 8 / 12 / 16 MULTIVIEWER WITH ROUTER

## TAHOMA LX-16 with Two Outputs



## TAHOMA LX-16 with Four Outputs



**TAHOMA-LX-4** - 4 auto-detect HD/SD-SDI inputs, with built-in 16x4 routing switcher  
-Displays up to 4 images on one multiviewer output

**TAHOMA-LX-8** - 8 auto-detect HD/SD-SDI inputs, with built-in 16x8 routing switcher  
-Displays up to 8 images on one multiviewer output, or up to 4 images on each of two multiviewer outputs

**TAHOMA-LX-12** - 12 auto-detect HD/SD-SDI inputs with built-in 16x12 routing switcher  
-Displays up to 12 images on one multiviewer output, or up to 8 images on one multiviewer output and up to 4 images on a second multiviewer output, or up to 4 images on each of three multiviewer outputs

**TAHOMA-LX-16** - 16 auto-detect HD/SD-SDI inputs, with built-in 16x16 routing switcher  
-Displays up to 16 images on one multiviewer output, or any of the following combinations: 8+8, 12+4, 8+4+4, 4+4+4+4



### FLEXIBLE OUTPUTS

The TAHOMA-LX 1RU Multiviewer has 4 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p). **The following table shows examples of output configurations.**

OUTPUTS	1	2	3	4
INPUTS	4	4	4	4
	4	4	8	
	8		8	
	12			4
	16			

### SPECIFICATIONS

<b>Video Inputs</b>	16 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 , 8, 12 or 16	<b>Outputs</b>	DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Extender (option)
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE 299M	<b>General Purpose IO</b>	Up to 40 inputs with DB9 connectors
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200, Format, TSL, TSI, AXP
<b>Control</b>	Front Panel buttons for quick preset recalls, GPIs, Apantac eXchange Protocol (AX), Director (Config & control application)	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
		<b>Electrical</b>	110W, 90 - 250V 50/60 Hz
		<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
		<b>Power</b>	Optional redundant power supply
		<b>Size</b>	1 RU, 44.5 cm (17.5") W x 50 cm (19.7") D

# LX-20 / 24 / 28 / 32 MULTIVIEWER WITH ROUTER

## Key Features

- Built-in routing switcher - any input can be switched to one or more image window regardless of output configuration
- Single frame of processing time
- 32 auto-detect HD/SD-SDI inputs (3G ready) with active loop
- Available in HD/SD-SDI models
- Upgradable to support 4K/UHD inputs
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 2 RU with redundant power supply
- 3 year limited warranty

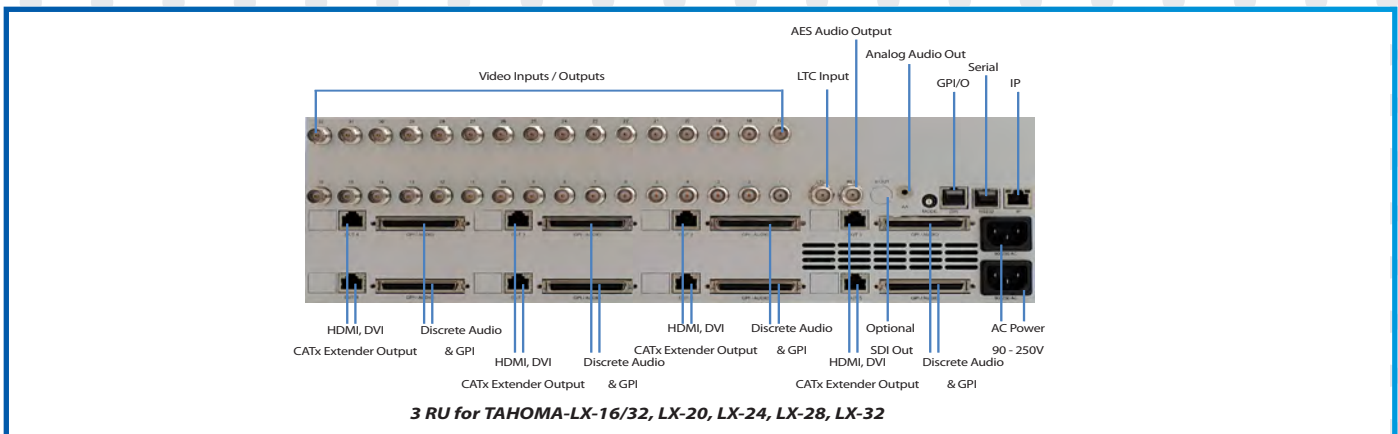
## Accessories

### Standard

- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

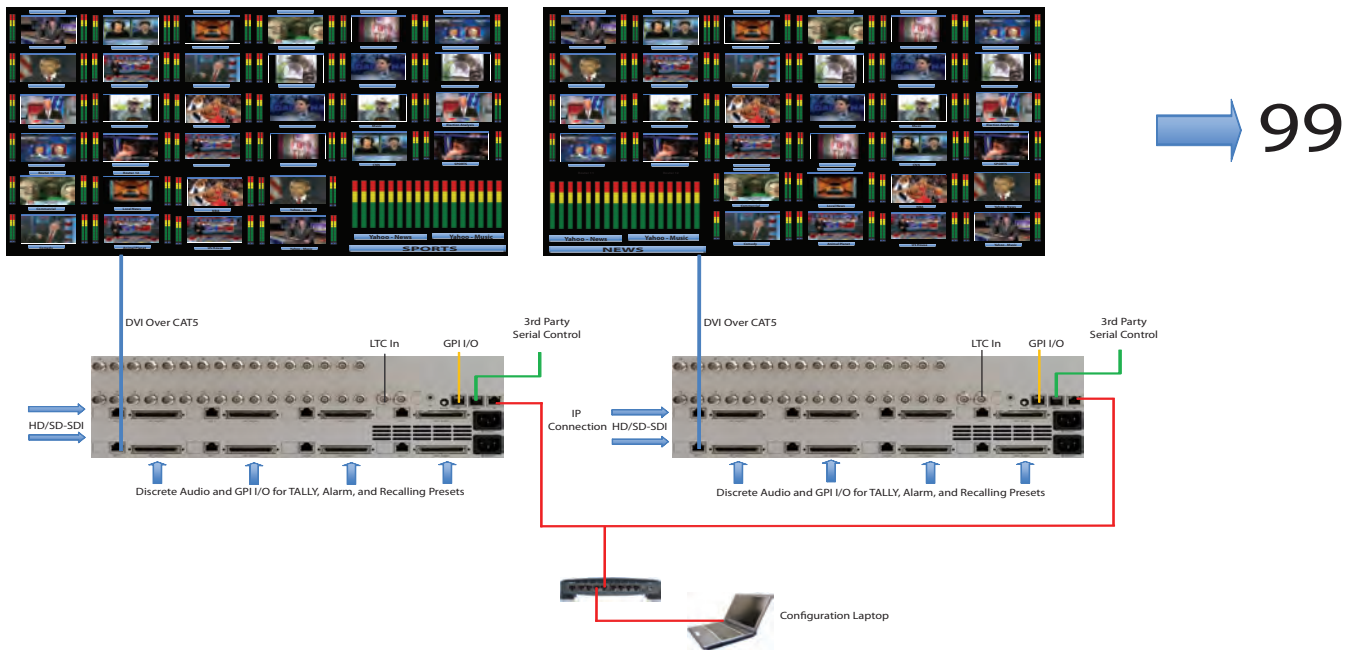
### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply

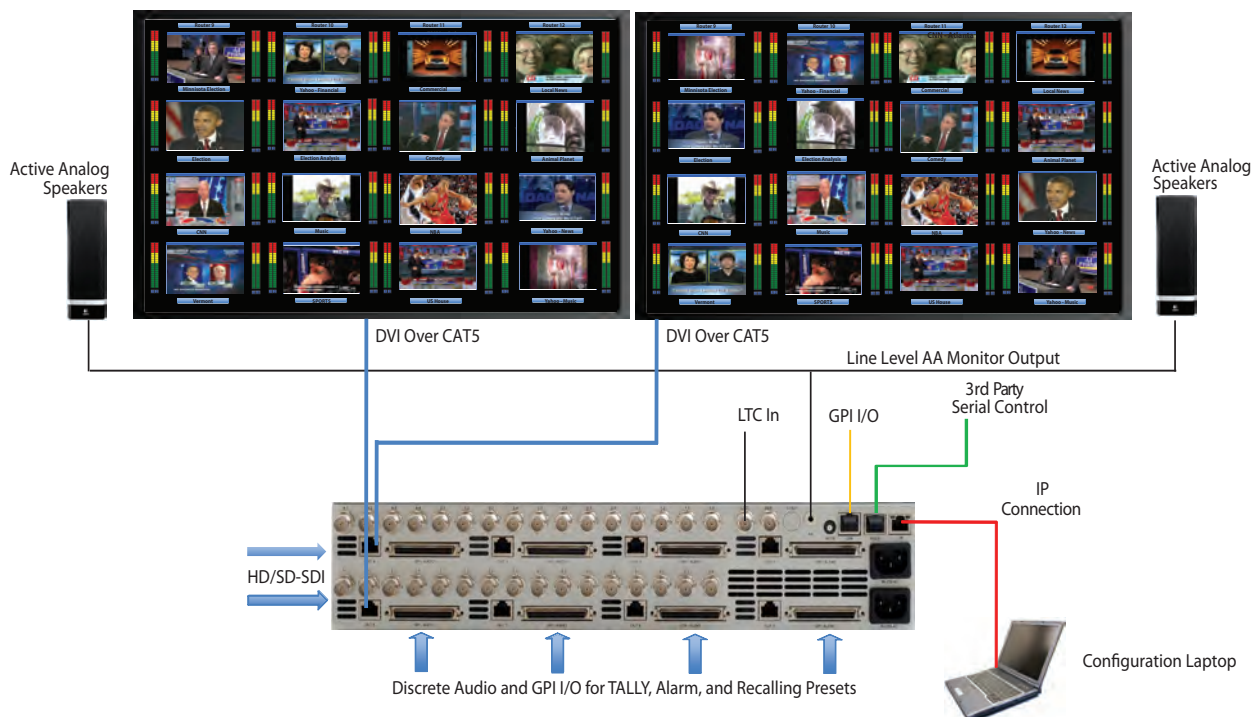


## Multiple TAHOMA-LX-32 Modules Controlled on a LAN

- LX-16/32: 32 auto-detect inputs. Built-in 32 x 16 routing switcher. Displays up to 16 images. 4 Multiviewer outputs
  - LX-20: 32 auto-detect inputs. Built-in 32 x 20 routing switcher. Displays up to 20 images. 5 Multiviewer outputs
  - LX-24: 32 auto-detect inputs. Built-in 32 x 24 routing switcher. Displays up to 24 images. 6 Multiviewer outputs
- See flexible output section for capabilities



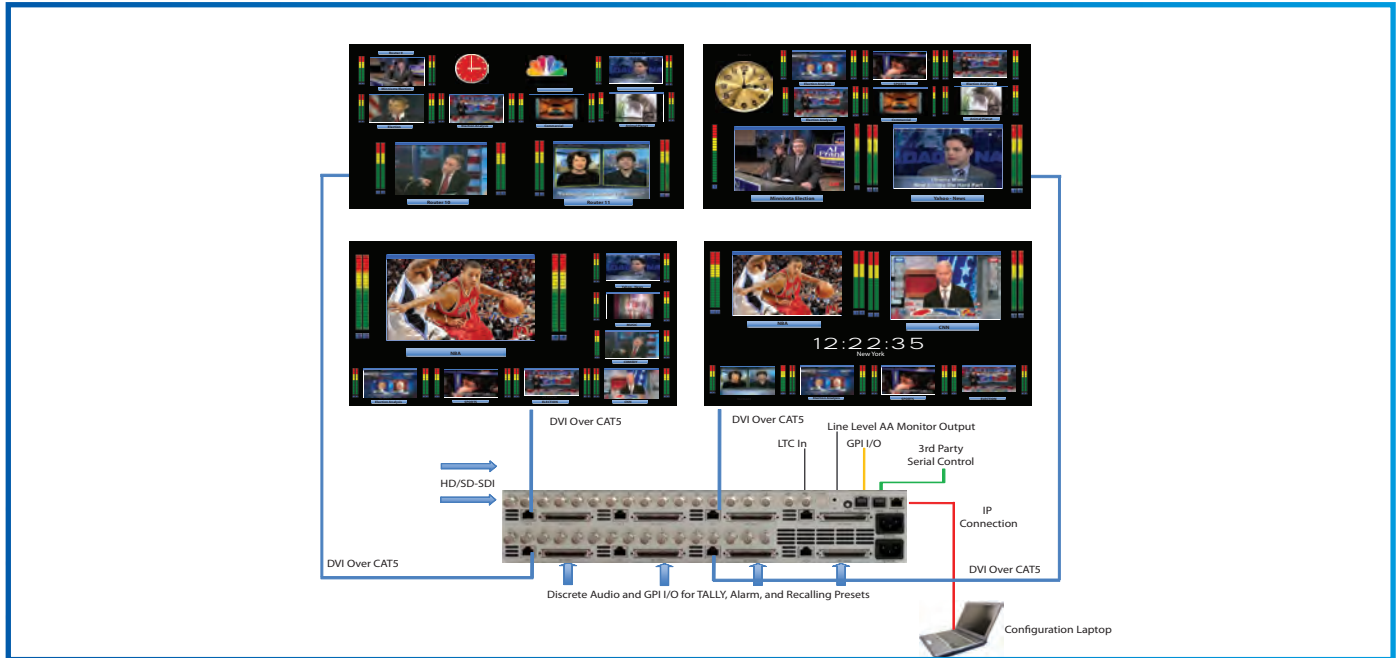
## TAHOMA-LX-32 with 2 Outputs, 16 Windows Each



# LX-20 / 24 / 28 / 32 MULTIVIEWER WITH ROUTER

## TAHOMA-LX-32 with 4 Outputs, 8 Windows Each

- LX-28: 32 auto-detect inputs. Built-in 32 x 28 routing switcher. Displays up to 28 images. 7 Multiviewer outputs
  - LX-32: 32 auto-detect inputs. Built-in 32 x 32 routing switcher. Displays up to 32 images. 8 Multiviewer outputs
- See flexible output section for capabilities

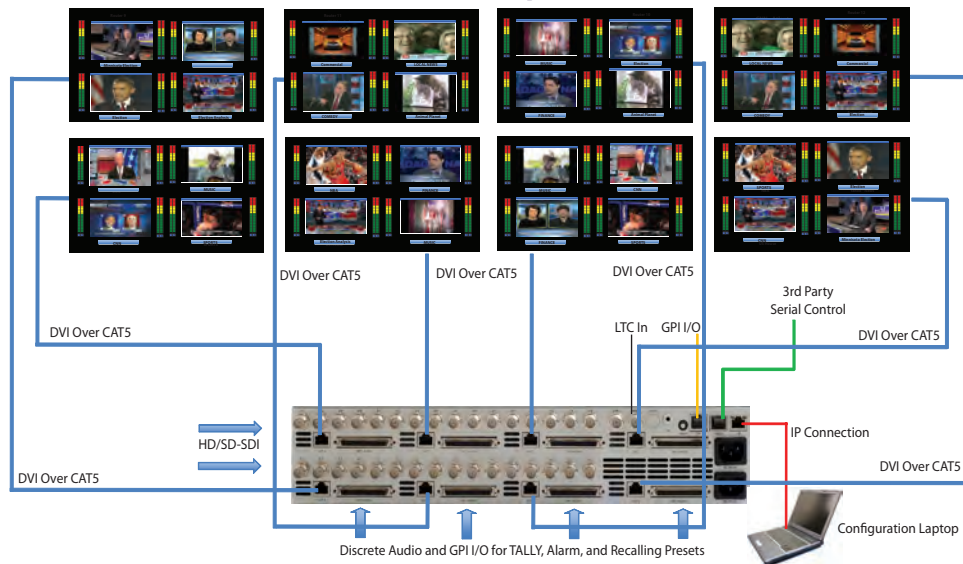


### FLEXIBLE OUTPUTS

The TAHOMA-LX 3 RU Multiviewer has 8 flexible DVI/HDMI (1.2/3) / VGA outputs with user selectable resolutions up to 2048x1080 (including 1920x1080p). **The following table shows examples of output configurations.**

OUTPUTS	1	2	3	4	5	6	7	8
	4	4	4	4	4	4	4	4
	4	4	4	4	4	4	8	
	4	4	4	4	8		8	
	4	4	8		8		8	
	8		8		8		8	
	4	8		8		12		
	4	4	8		16			
	8		12			12		
INPUTS	4	8		20				
	4	12			16			
	8		8		16			
	4	8		20				
	4	4	24					
	4	28						
	8		24					
	12			20				
	16				16			

## TAHOMA-LX-32 with 8 Outputs, 4 Windows Each



SPECIFICATIONS			
<b>Video Inputs</b>	32 HD/SD-SDI, Composite	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 , 8, 16, 20, 24, 28 or 32	<b>Outputs</b>	4-8 DVI, HDMI, VGA (optional), 1 SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Extender (option)
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>General Purpose IO</b>	Up to 72 inputs with DB9 connectors
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Control</b>	Front Panel buttons for quick preset recalls, GPIs, Apantac eXchange Protocol (AX), Director (Config & control application)	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
		<b>Electrical</b>	200W, 90 - 250V 50/60 Hz
		<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
		<b>Power</b>	Standard redundant power supply
		<b>Size</b>	3RU, 44.5 cm (17.5") W x 60 cm (23.6") D

# DL-X+X "HYBRID" MULTIVIEWER - MULTIMEDIA + SDI

## Key Features

- Hybrid inputs
- Mixture of 4-16 auto-detect DVI, VGA, YPbPr, Composite, HDMI, SD-SDI/HD-SDI/3G inputs in groups of four
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection on SDI inputs
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 2 RU with standard redundant power supplies
- 3 year limited warranty

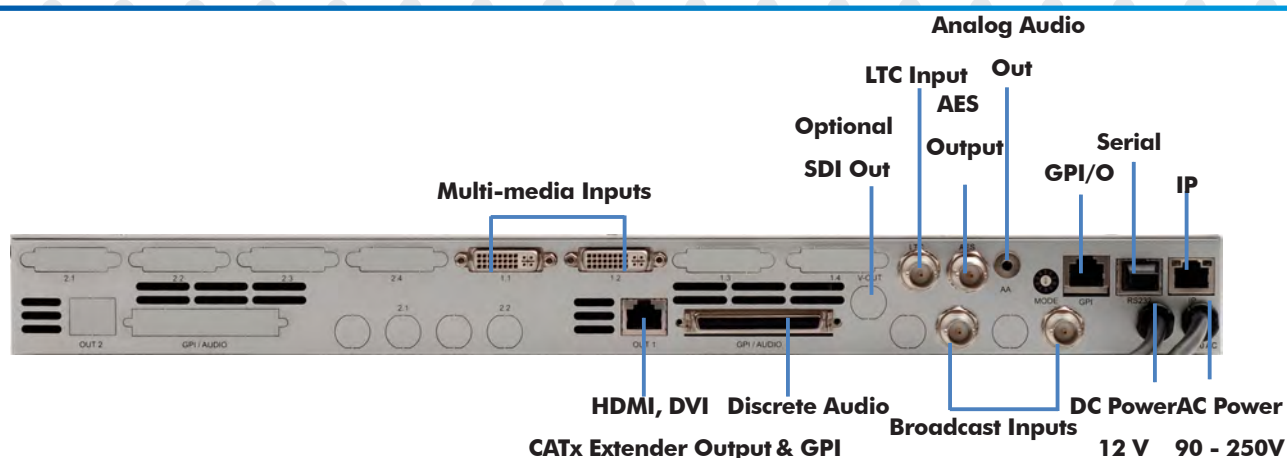
## Accessories

### Standard

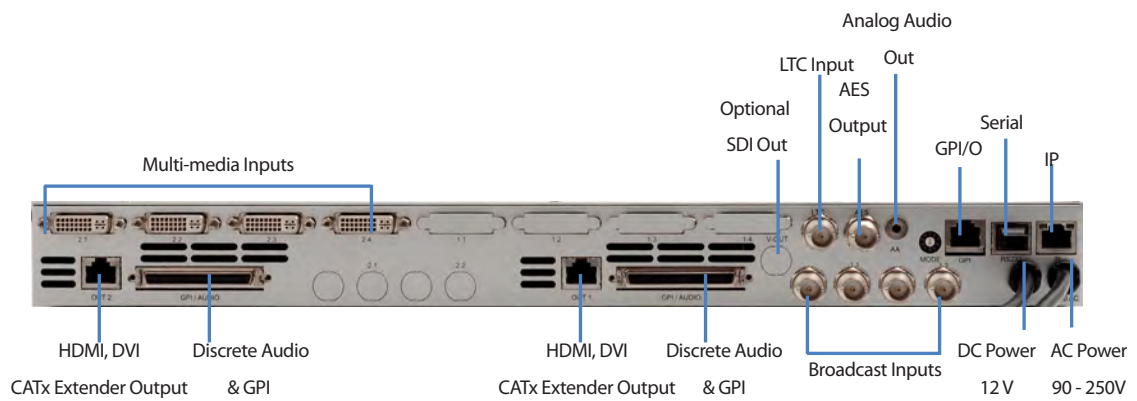
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

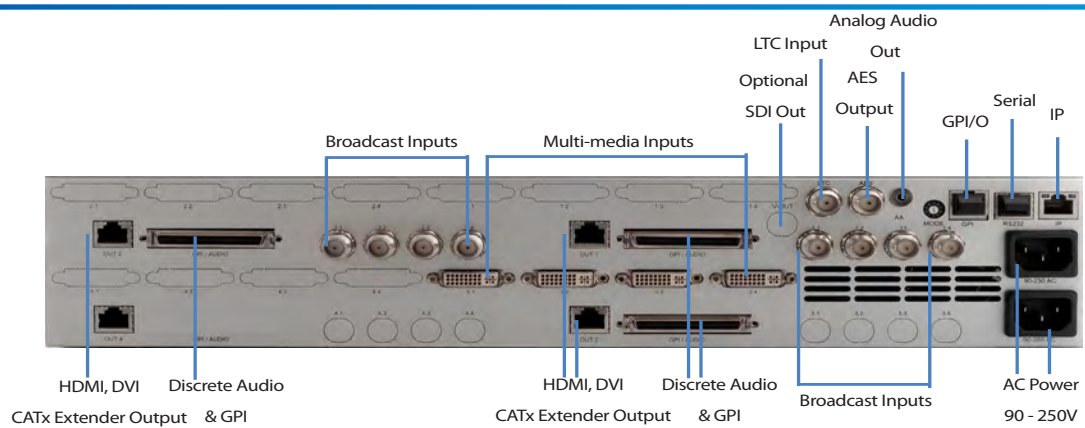
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply



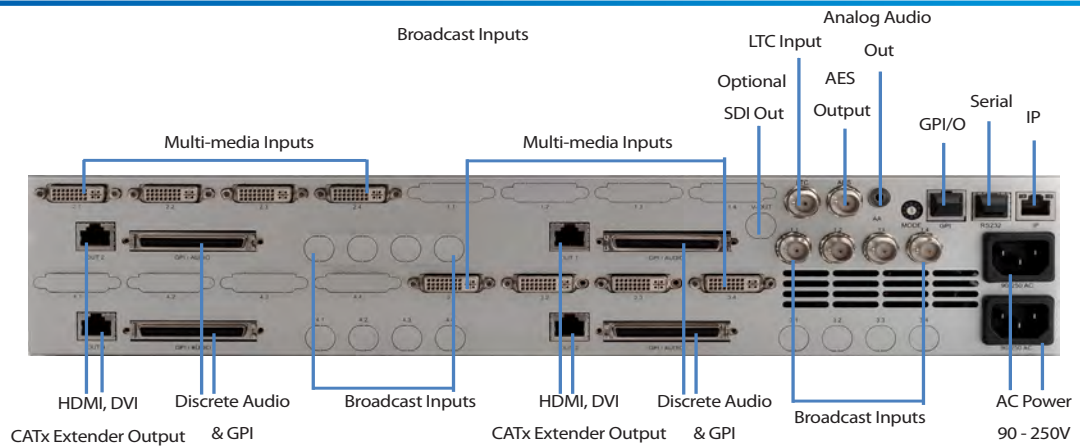
1 RU for TAHOMA-DL-2+2



**1 RU for TAHOMA-DL-4+4**

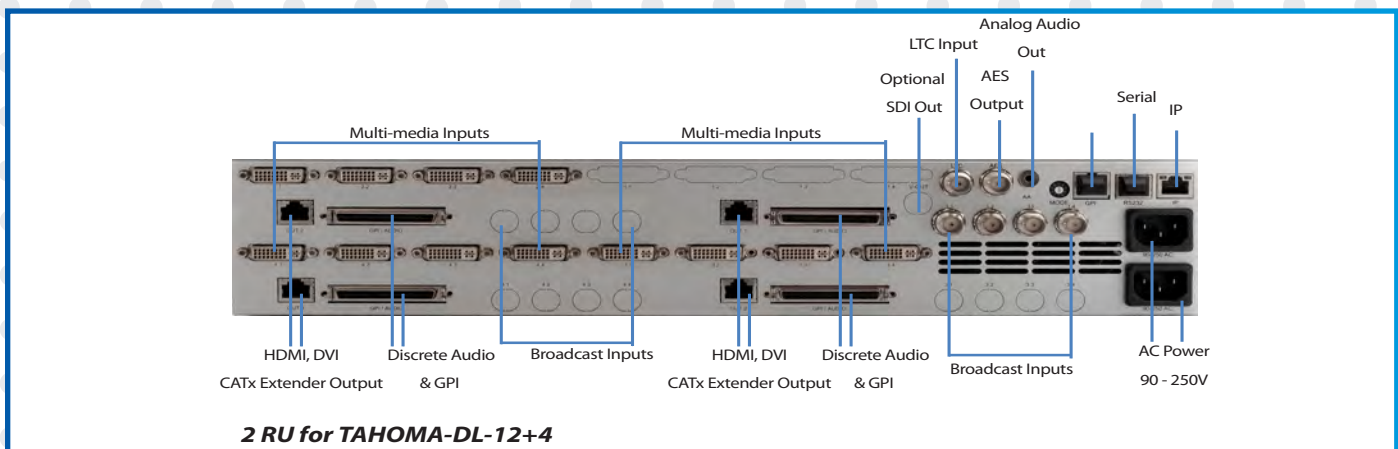
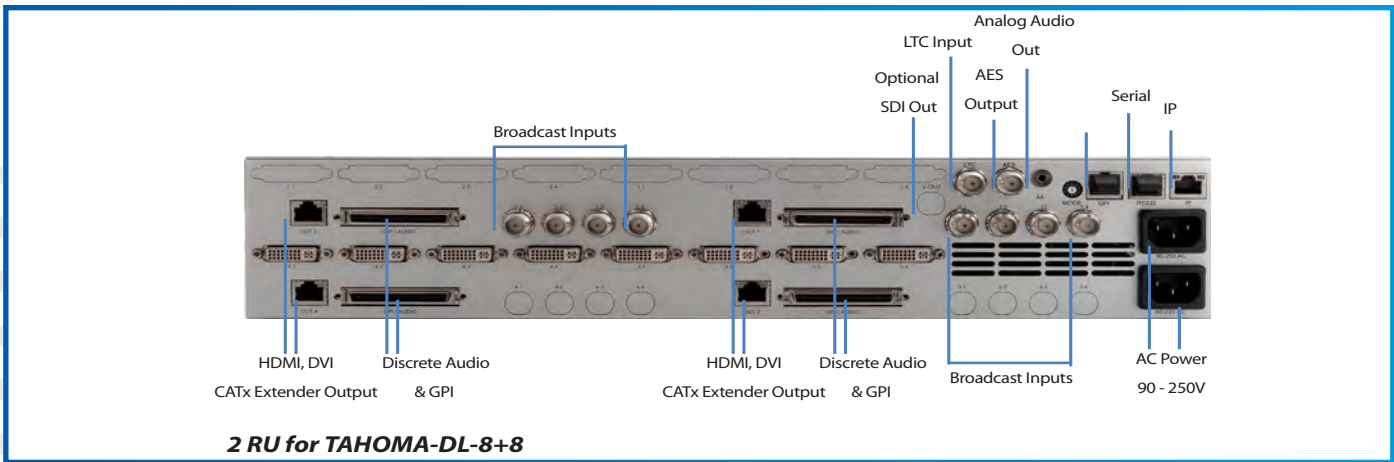
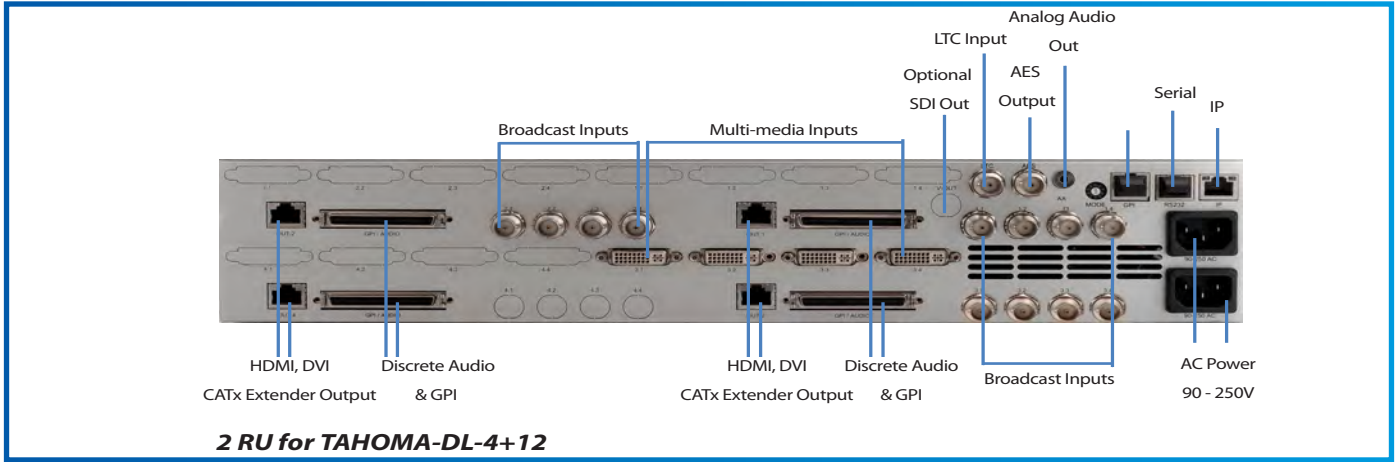


**2 RU for TAHOMA-DL-4+8**



**2 RU for TAHOMA-DL-8+4**

# DL-X+X "HYBRID" MULTIVIEWER





The TAHOMA-DL-4+4, DL-4+8, DL-8+4 Multiviewers have 2 to 3 flexible DVI/VGA/HDMI outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p).

OUTPUT	1	2	3
INPUTS	4	4	4
	8		4

The TAHOMA-DL-8+8, Multiviewers have 4 flexible DVI/VGA/HDMI / VGA outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p).

OUTPUT	1	2	3	4
INPUTS	4	4	4	4
	4	4	8	
	8		8	
	12			4
	16			

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 12 3G/HD/SD-SDI	<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)
<b>Multimedia Inputs</b>	Up to 16 DVI, VGA, HDMI, Composite, YPbPr, YC	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A DVI-I (DVI-I-VGA adapter, optional) DVI-I-Composite/C/YPbPr adapter, optional DVI-I-HDMI adapter)	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4, 8, 12 or 16	<b>Outputs</b>	DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver Up to 300 feet with HDBaseT Extender Up to 1500 feet with Fiber Optic Extender
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>HDMI</b>	1.2, 1.3 with HDCP	<b>General Purpose IO</b>	Up to 40 inputs with DB9 connectors
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE-299M	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Signal Level</b>	1V nominal	<b>Electrical</b>	100W, 90-250V 50/60 Hz for 1RU 200W, 90-250V 50/60 Hz for 2 RU
<b>DC Offset</b>	0V, + - 0.1V	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Input Impedence</b>	75 ohm for BNC 100 ohm for DVI-I	<b>Power</b>	Optional redundant power supply for 1 RU. Standard redundant power supply for 2 RU
<b>Return Loss</b>	40db up to 5MHz	<b>Size</b>	1RU 44.5 cm (17.5") W x 50 cm (19.7") D 2RU 44.5 cm (17.5") W x 60 cm (23.6") D
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD		

# DE-4 / 8 / 12 / 16 "UNIVERSAL" MULTIVIEWER

## Key Features

- Universal inputs
- 4-16 DVI, VGA, YPbPr, Composite, HDMI (optional), and SD-SDI/HD-SDI (optional) inputs
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 3 year limited warranty

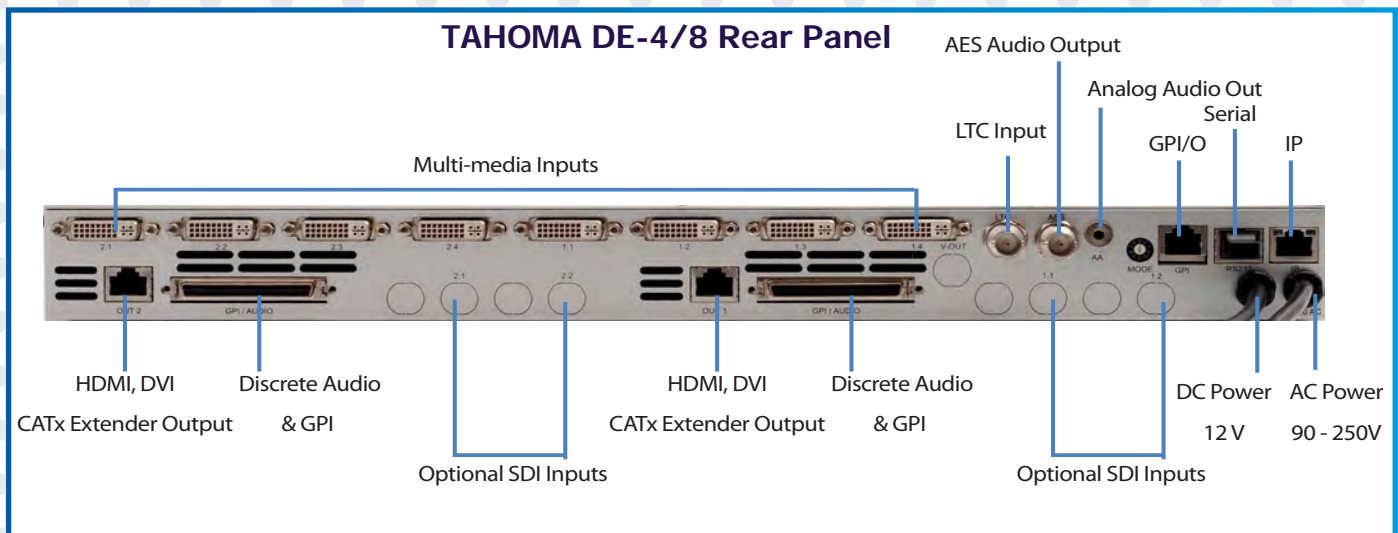
## Accessories

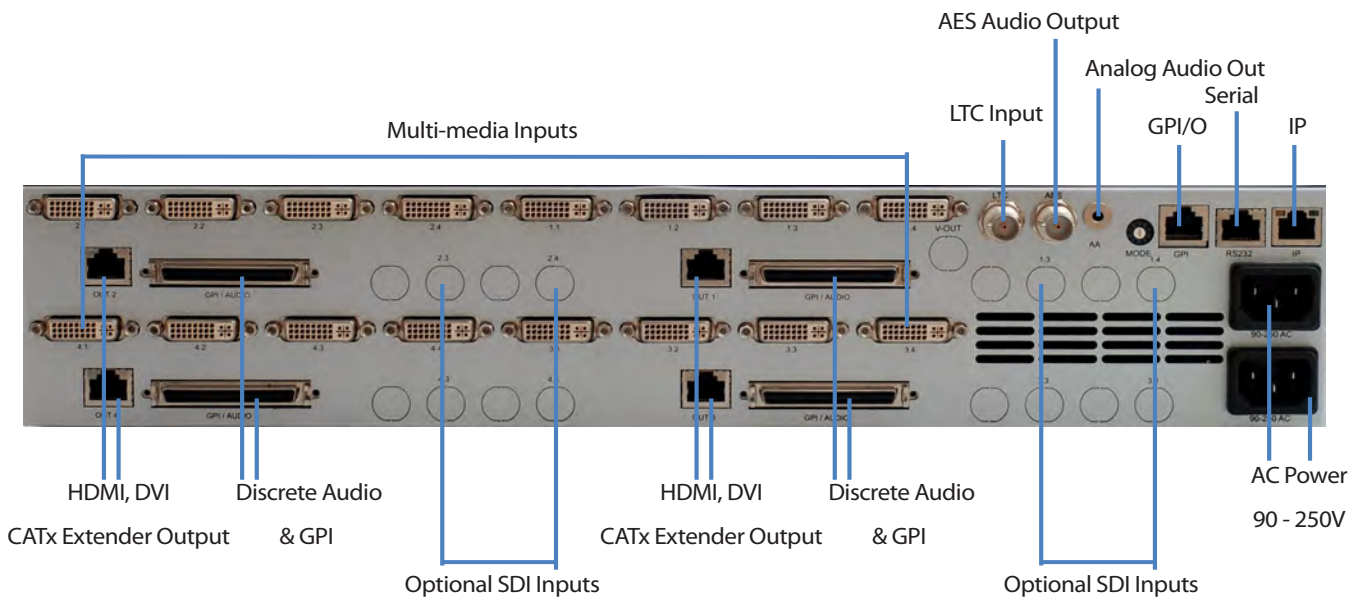
### Standard

- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

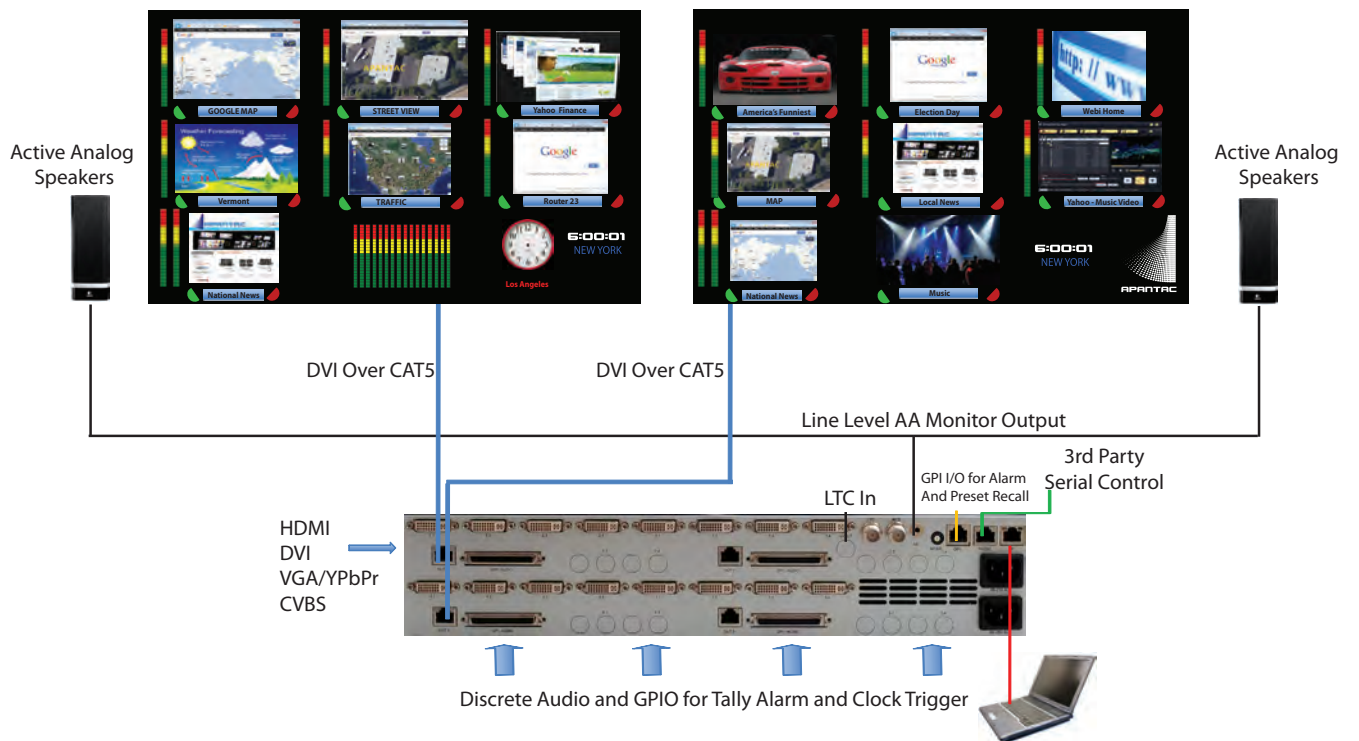
- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply





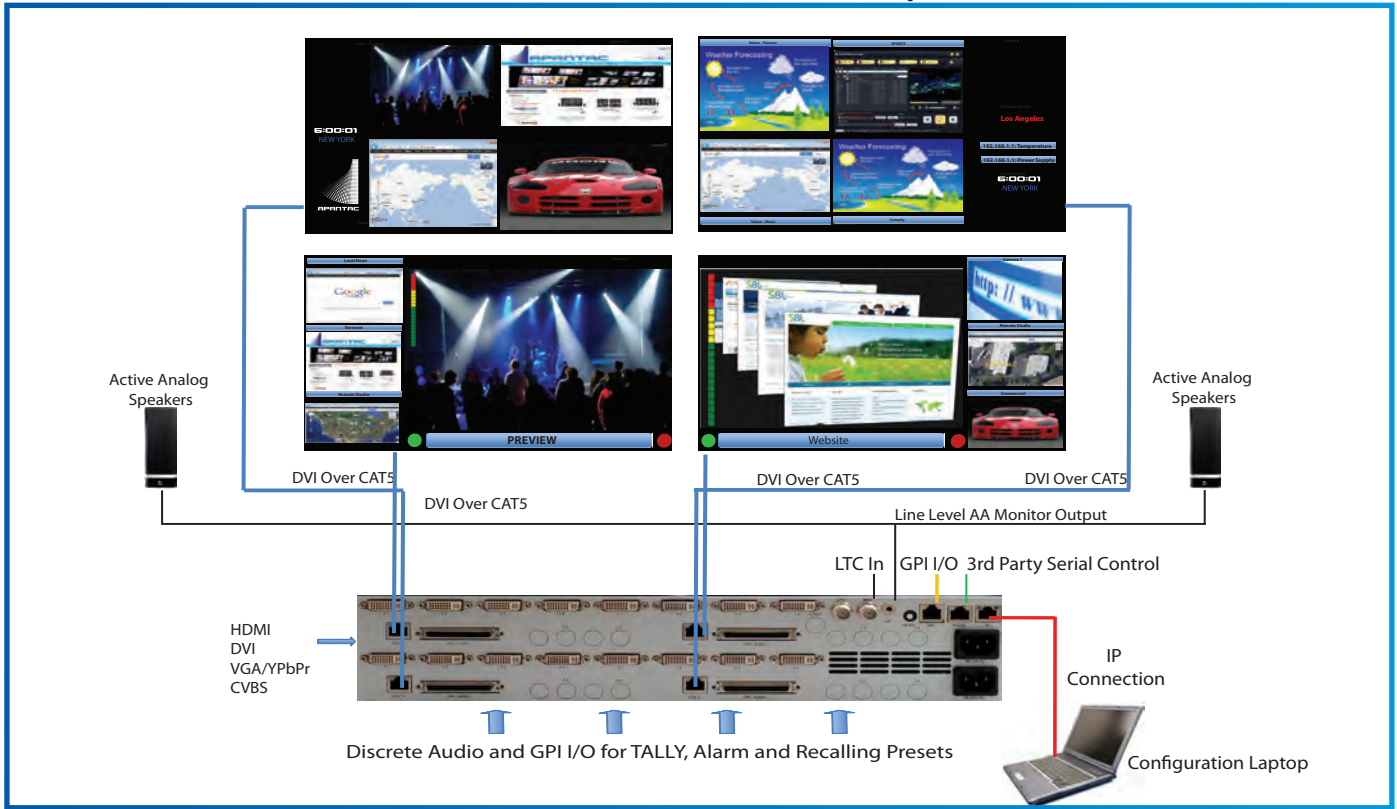
**2 RU for TAHOMA-DE-12, DE-16**

**TAHOMA DE-8 with Two Outputs**

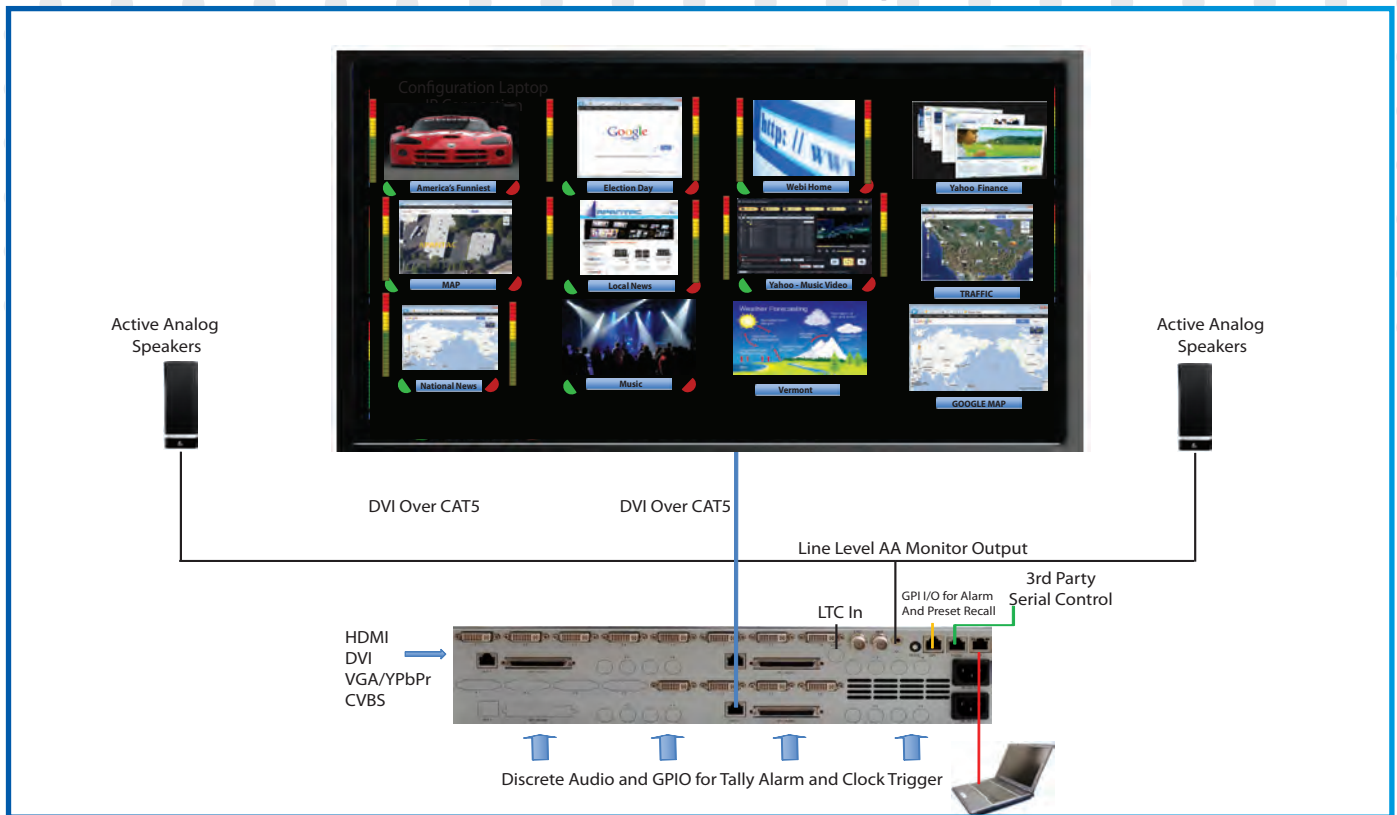


# DE-4 / 8 / 12 / 16 "UNIVERSAL" MULTIVIEWER

## TAHOMA DE-16 with Four Outputs



## TAHOMA DE-12 with One Output



116 The TAHOMA-DE-8 Multiviewer has 2 flexible DVI/VGA/HDMI (1.2/3) outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p).

OUTPUT	1	2
INPUTS	4	4
	8	

The TAHOMA-DE-8 1 RU Frame also supports the TAHOMA-DE-4

The TAHOMA-DE-16 Multiviewer has 4 flexible DVI/VGA/HDMI (1.2/3) / VGA outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p)

OUTPUT	1	2	3	4
INPUTS	4	4	4	4
	4	4	8	
	8		8	
	12			4
	16			

The TAHOMA-DE-16 2RU frame also supports the following model:

TAHOMA-DE-12 - 12 auto-detect DVI/VGA/HDMI/Composite/YPbPr/YC inputs and an optional HD-SDI/SD-SDI input

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 16 DVI/VGA/HDMI/3G/HD/Composite/YPbPr/YC and optional HD-SDI/SD-SDI	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A, DVI-I (DVI-I-VGA adapter, opt DVI-I-Composite/C/YPbPr adapter, opt DVI-1-HDMI adapter)	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4, 8, 12 or 16	<b>Outputs</b>	1-4 DVI, HDMI, VGA / SDI (optional)
<b>Embedded Audio</b>	2 channels of embedded HDMI audio	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver (option) Up to 300 feet with HDBaseT Extender (option) Up to 1500 feet with Fiber Extender (option)
<b>Signal Level</b>	1V nominal	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>DC Offset</b>	0V, + - 0.1 V	<b>General Purpose IO</b>	Up to 40 inputs with DB9 connectors
<b>Impedance</b>	75 ohm for BNC, 100 ohm for DVI-U	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Return Loss</b>	40 db up to 5 MHz	<b>IP</b>	100 Base-Tx, TSL, AXP, Conn: RJ45
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen	<b>Electrical</b>	100W, 90 - 250V 50/60 Hz for 1RU 200W, 90 - 250V 50/60 Hz for 2RU
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII protocol (AXP), Director	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
		<b>Power</b>	Optional redundant power supply 1 RU Standard redundant power supply 2 RU
		<b>Size</b>	1 RU 44.5 cm (17.5") W x 50 cm (19.7") D 2 RU 44.5 cm (17.5") W x 60 cm (23.6") D

# TAHOMA IP MULTIVIEWER

## IP-4/8/12/16

### Key Features

- Decode up to 16 streams
- Compliant to ISO/IEC 13818-1 MPEG-2 Transport Stream Specification
- Demultiplex incoming SPTS/MPTS
- Supports AFD, WSS
- MPEG2 / H.264 decode
- MPEG2 MP@HL, resolution up to 1080P/1080i@60Hz
- Supports both 50 and 60Hz
- Output resolution up to 2048x1080 (incl. 1080p)
- Built-in CATx extender for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 3 year limited warranty

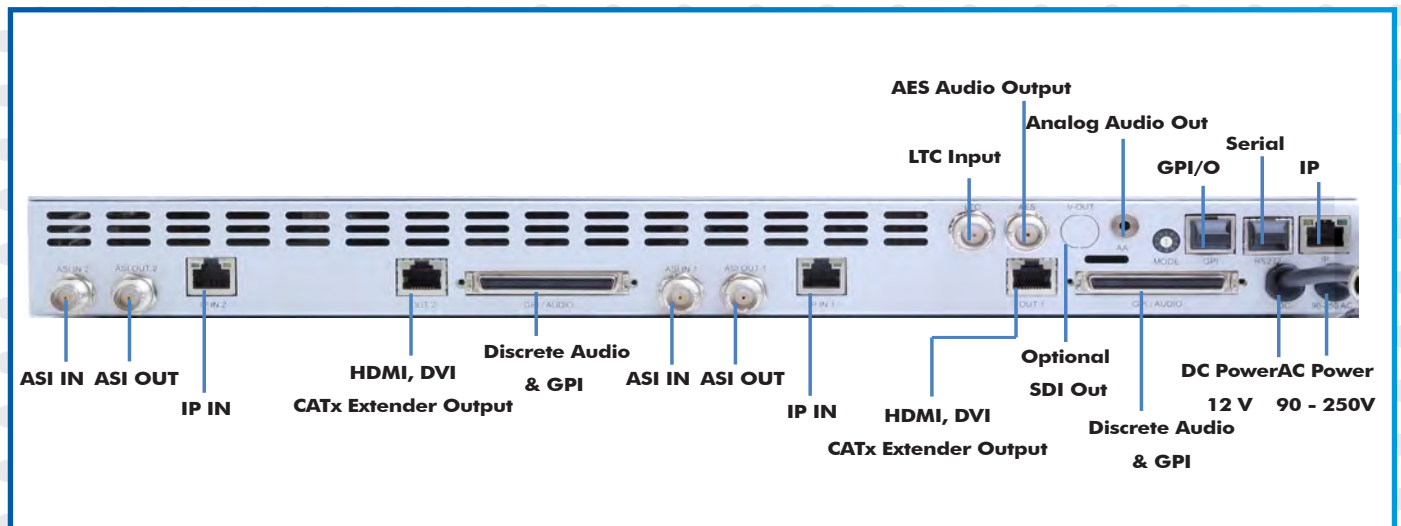
### Accessories

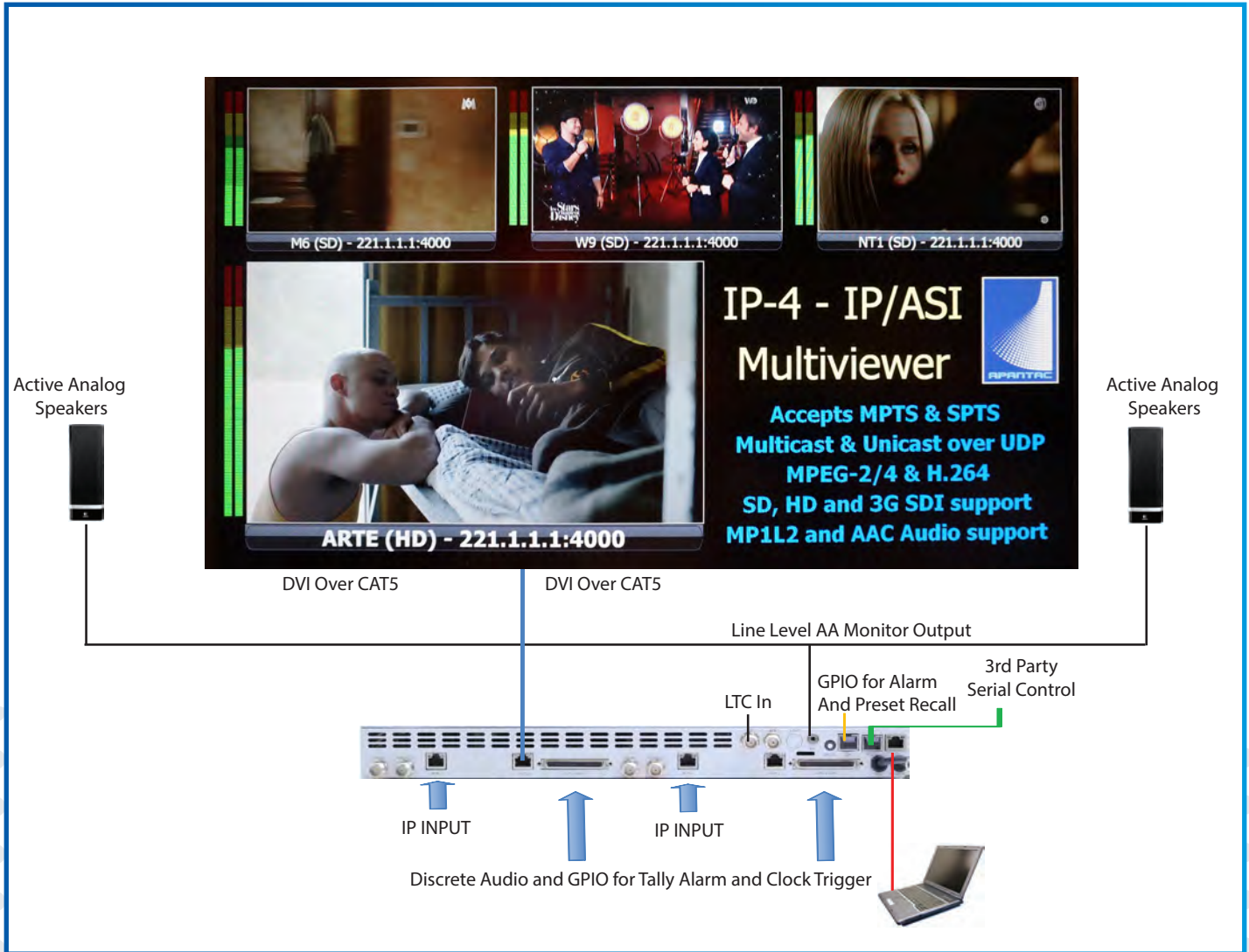
#### Standard

- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

#### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- Redundant power supply





SPECIFICATIONS			
<b>Video Inputs</b>	MPEG2 transport stream, H.264, MPEG4	<b>Outputs</b>	2 DVI, HDMI (RJ45), SDI (optional)
<b>Connectors</b>	BNC IEC 61169-8 Annex A	<b>Output Resolution</b>	2048 x 1080 (1080p)
<b>Total Windows</b>	4, 8, 12, 16	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LED, clock faces, logos, UMD, OMD, IMD
<b>Metadata</b>	AFD, WSS, Closed Captioning	<b>General Purpose IO</b>	Up to 24 inputs with DB9 connectors
<b>Audio, Video Decode</b>	MPEG2 / H.264 decode up to 4 video streams at 1080i Decode one stereo audio stream per video stream	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format: TSL, TSI, AXP
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen	<b>IP</b>	100 Base-Tx, TSL, AXP, Connector: RJ45
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (config & control app)	<b>Electrical</b>	100W, 90-250V 50/60 Hz for 1 RU 200W, 90-250V 50/60 Hz for 2 RU
<b>Power</b>	Optional redundant power supply for 1 RU Standard redundant power supply for 2 RU	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Size</b>	1RU 44.5 cm (17.5") W x 50 cm (19.7") D 2RU 44.5 cm (17.5") W x 60 cm (23.6") D		

# 1L-X+X "HYBRID" MULTIVIEWER (IP + SDI)

## Key Features

- Hybrid inputs
- Mixture of 4-16 IP, SD-SDI/HD-SDI/3G inputs in groups of four
- Decode up to 16 streams
- Compliant to ISO/IEC 13818-1 MPEG-2 Transport Stream Specification
- Demultiplex incoming SPTS/MPTS
- Supports AFD, WSS
- MPEG2 / H.264 decode
- MPEG2 MP@HL, resolution up to 1080p/1080i@60Hz
- 2 - 4 channels of audio per decode IP stream
- 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Output resolution up to 2048 x 1080 (incl. 1080p)
- Built-in CATx extenders for each output
  - Passive short-distance receivers up to 35 feet
  - Active long-distance receivers up to 115 feet (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection on SDI inputs
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply

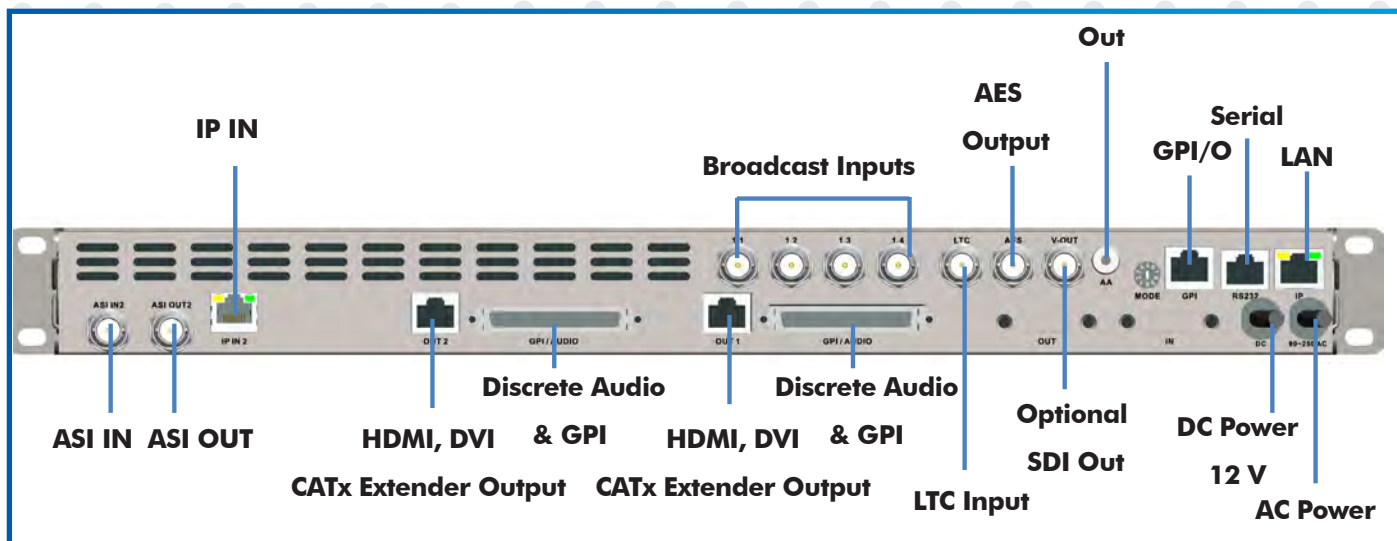
## Accessories

### Standard

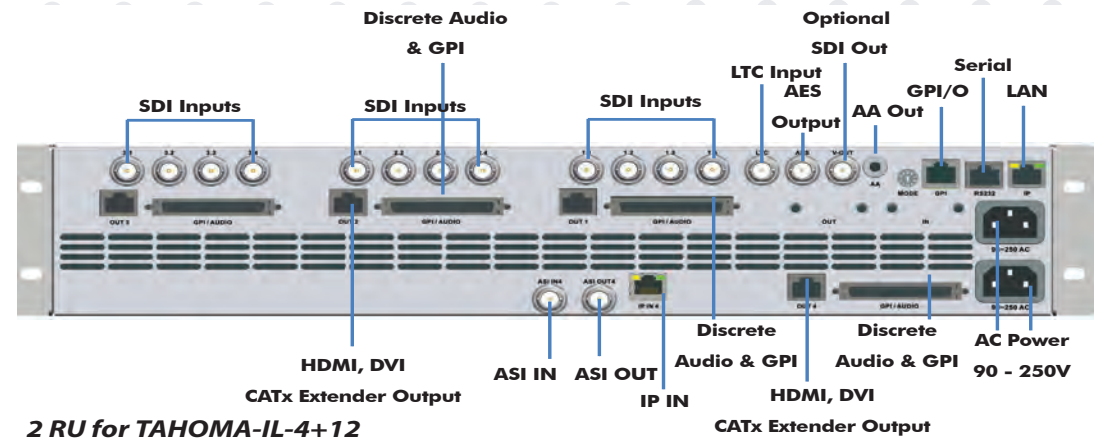
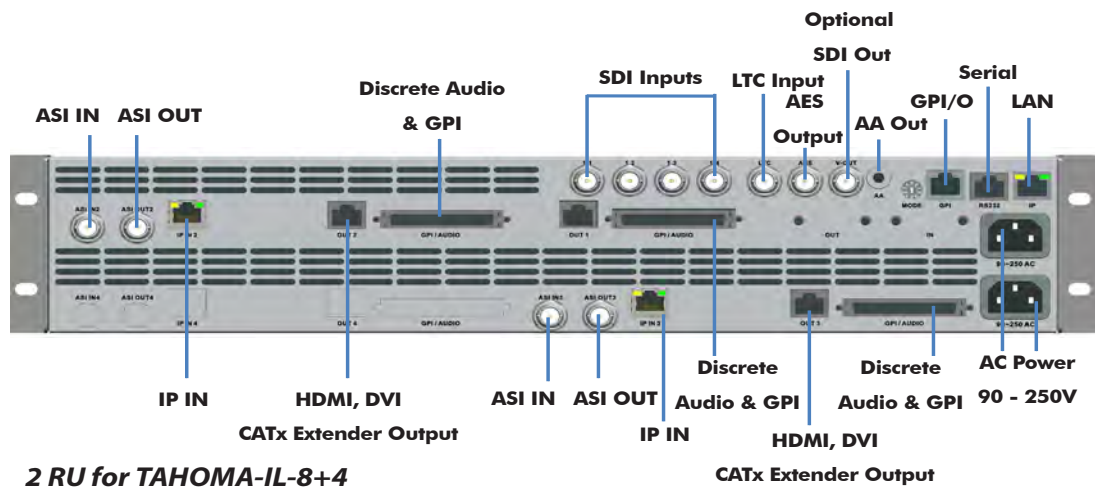
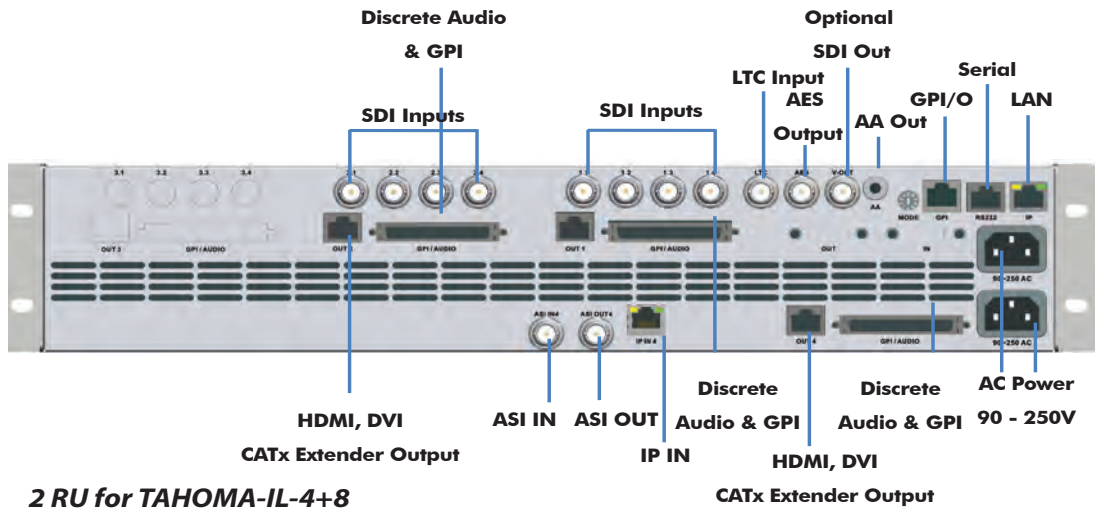
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

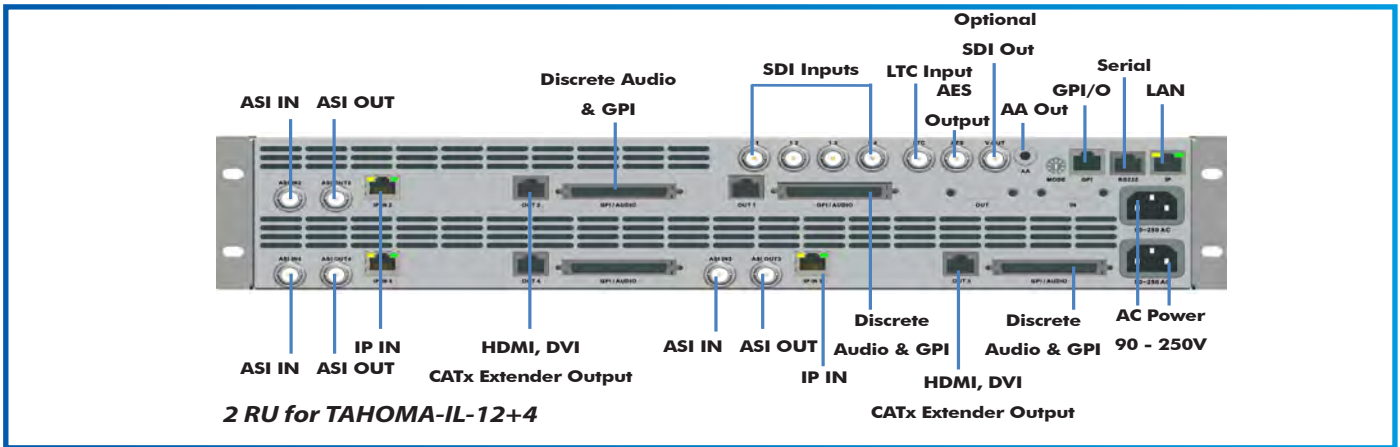
- SDI Output (1 per module)
- Decode second pair of IP audio
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout







# IL-X+X "HYBRID" MULTIVIEWER (IP+SDI)



The TAHOMA-IL-4+4, IL-4+8, IL-8+4 Multiviewers have 3 flexible DVI/VGA/HDMI (1.2/3) outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p).

OUTPUT	1	2	3
INPUTS	4	4	4
	8		4

The TAHOMA-IL-4+4, IL-4+8, IL-8+4 Multiviewers have 4 flexible DVI/VGA/HDMI (1.2/3) / VGA outputs and an optional SDI output with user selectable resolutions up to 2048x1080 (including 1920x1080p).

OUTPUT	1	2	3	4
INPUTS	4	4	4	4
	4	4	8	
	8		8	
	12			4
	16			

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 12 3G/HD/SD-SDI	<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (Config & control app)
<b>IP Inputs</b>	MPEG2 transport stream, H.264, MPEG4 and ASI	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A RJ45	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4, 8, 12 or 16	<b>Outputs</b>	DVI, HDMI, VGA (optional), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	800 x 480 - 2048 x 1080 (1080p)
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>Built-in Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver Up to 300 feet with HDBaseT Extender Up to 1500 feet with Fiber Optic Extender
<b>Return Loss</b>	> 15db up to 1.5 Gbps > 10db up to 3G	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LEDs, clock faces, logos, UMD, OMD, IMD, dynamic UMD
<b>HDMI</b>	1.2, 1.3 with HDCP	<b>General Purpose IO</b>	Up to 40 inputs with DB9 connectors
<b>Embedded Audio</b>	SMPTE-272M-A, SMPTE 299M	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	100 Base-Tx, TSL, AXP Connector: RJ45
<b>Signal Level</b>	1V nominal	<b>Electrical</b>	100W, 90-250V 50/60 Hz for 1RU 200W, 90-250V 50/60 Hz for 2 RU
<b>DC Offset</b>	0V, + - 0.1V	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Input Impedence</b>	75 ohm for BNC 100 ohm for DVI-I	<b>Power</b>	Optional redundant power supply for 1 RU. Standard redundant power supply for 2 RU
<b>Return Loss</b>	40db up to 5MHz	<b>Size</b>	1RU 44.5 cm (17.5") W x 50 cm (19.7") D 2RU 44.5 cm (17.5") W x 60 cm (23.6") D
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen, WSS, AFD		

# MINI MULTIMEDIA MULTIVIEWER

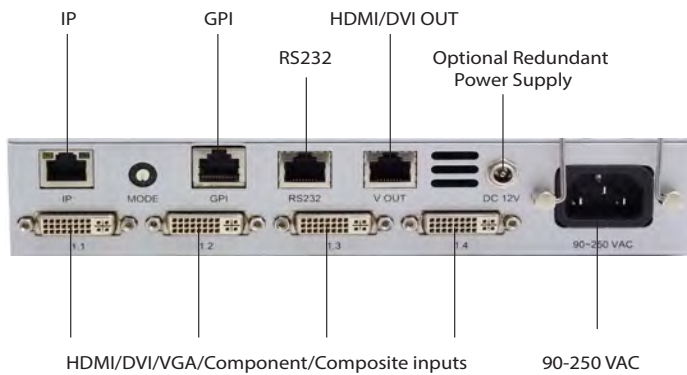
- Cost effective multimedia input multiviewer
- 4 Universal inputs: DVI, HDMI - with HDCP, VGA, YPbPr, composite
  - Windows can be sized freely
- ASCII protocol for remote control • IP and RS232 control
  - DVI / HDMI outputs up to 1080P60

## MiniDE-4

Simple Compact Multiviewer with Multimedia Inputs



MiniDE-4			
<b>Video Inputs</b>	HDMI, VGA, DVI, Component, Composite	<b>Outputs</b>	1 x HDMI/DVI
<b>Total Windows</b>	4	<b>HDMI</b>	800x480 - 1920x1080P
<b>Connector</b>	DVI-I (DVI-I-VGA Adapter DVI-I-Composite adapter Optional DVI-I-HDMI adapter optional DVI-I-YPbPr adapter) BNC IEC 61169-8 Annex A	<b>Built-In CATx Extender</b>	Up to 35 feet with passive receiver Up to 115 feet with active receiver
<b>Composite</b>	NTSC (SMPTE-170M) PAL (ITU624-2)	<b>On Screen Display</b>	N/A
<b>Signal Level</b>	1 V nominal	<b>General Purpose IO</b>	RJ50 (8 connectors)
<b>DC Offset</b>	0V, + - 0.1V	<b>IP</b>	100 Base-Tx, Supported Protocol: AXP_Lite, Connector: RJ45
<b>Impedence</b>	75 ohm	<b>Electrical</b>	25 W, 90-250 V 50/60 Hz
<b>Return Loss</b>	40db up to 5MHz	<b>EMI/RFI</b>	Complies with FCC Part 15, Class A, CE, EU EMC, C-tick
<b>Size</b>	1/2 width of 1RU 21.5cm (8.5") W x 37cm (14.6") D	<b>Power</b>	Optional redundant power supply
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, AXP_Lite, built-in webpage, MiniDE_Lite control application		



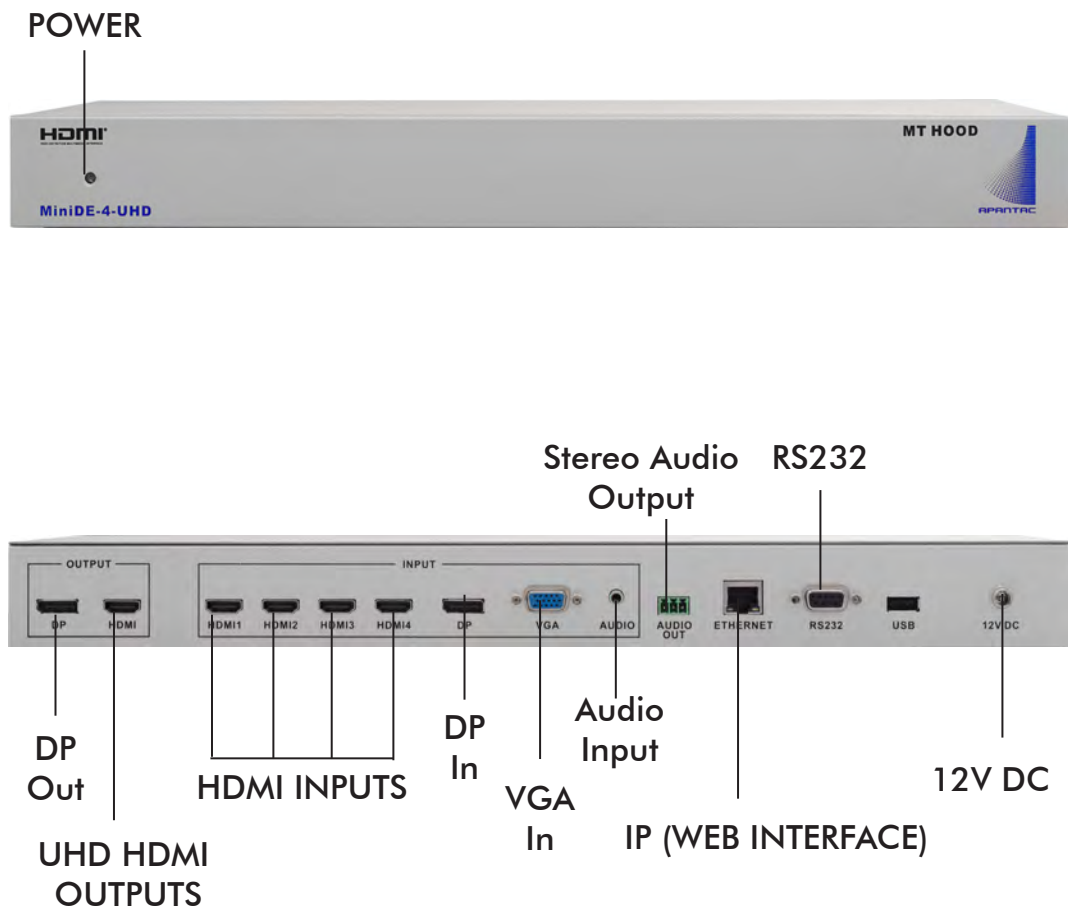
*MiniDE-4*



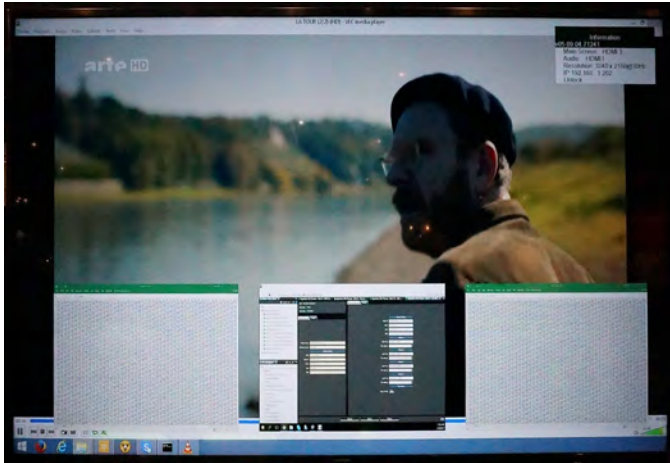
*MiniDE-4 APPLICATION DIAGRAM*

# HDMI 2.0 UHD MULTIVIEWER

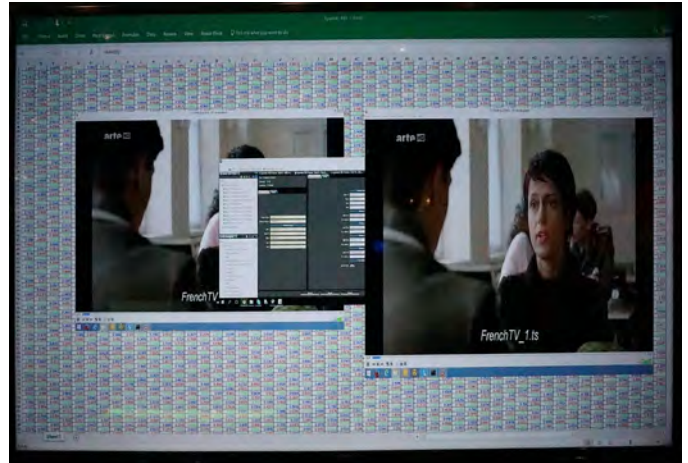
- Can display up to 4 video inputs on the same screen
- Supports 4 x HDMI inputs (UHD, HD and SD) as well one displayport and one analog VGA inputs
- Windows can be sized and moved freely
- Supports true 4K/UHD input up to 4K@60Hz at 4:4:4
- Supports true 4K/UHD output up to 4K@60Hz at 4:4:4
- Supports Deep color and HDCP 1.4 and 2.2
- Supports Dolby Digital 5.1, DTS 5.1 and uncompressed 7.1
- Analog stereo audio monitoring output
- Can be controlled via RS-232, Ethernet or Webpage



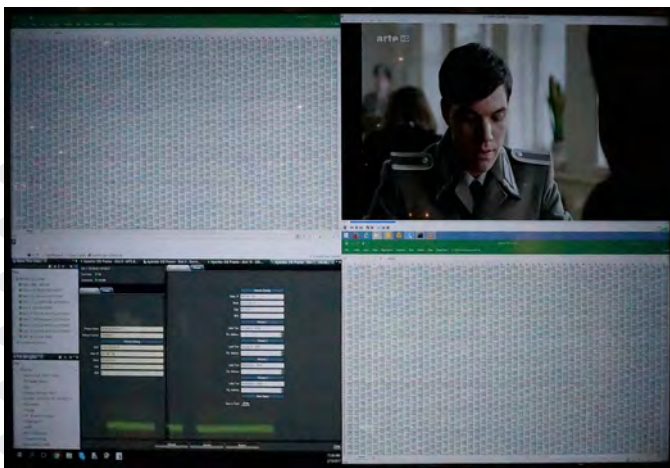
**Layout Examples: These are actual screen output captures.  
Not artist renderings!**



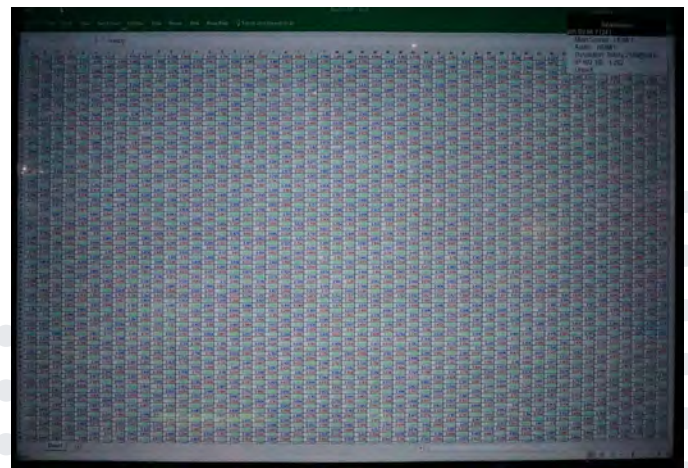
Picture in Picture Mode



Multi-layer Picture in Picture Mode



Quad Split Mode



Full Screen Mode

MODEL	MiniDE-4-UHD
Description	UHD Multiviewer
Input	4 x HDMI (Female), DP 1.2 x 1, VGA x 1, stereo audio x 1
Output	HDMI 2.0 UHD 4:4:4 with DP 1.2 loop through and stereo audio monitoring output
Max Input Resolution	4096 x 2160 @ 60Hz, 4:4:4 color sampling
Control	Ethernet and RS232
Power Supply	DC 12 3.34A 40W, FCC, CE, UL CCC and PSE
Power Consumption	15 W
Environment	Operating temperature 0 ~ 45 C
	Operating humidity 20 ~ 90% RH
	Storage temperature -20 ~ 60 C
Dimension	1 RU - 440.4 x 230 x 45 mm (L x W x H)
Weight	2.72 Kg

# TAHOMA ULTRA-DE-4K-4/8 MULTIVIEWER

## Key Features

- Output resolution at 3840 x 2160
- Universal inputs
- 4-8 DVI, VGA, YPbPr, Composite, HDMI (optional) and SD-SDI/HD-SDI (optional) inputs
- Up to 16 channels of embedded audio per SDI input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac Skin Technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 2 RU with standard redundant power supplies
- 3 year limited warranty

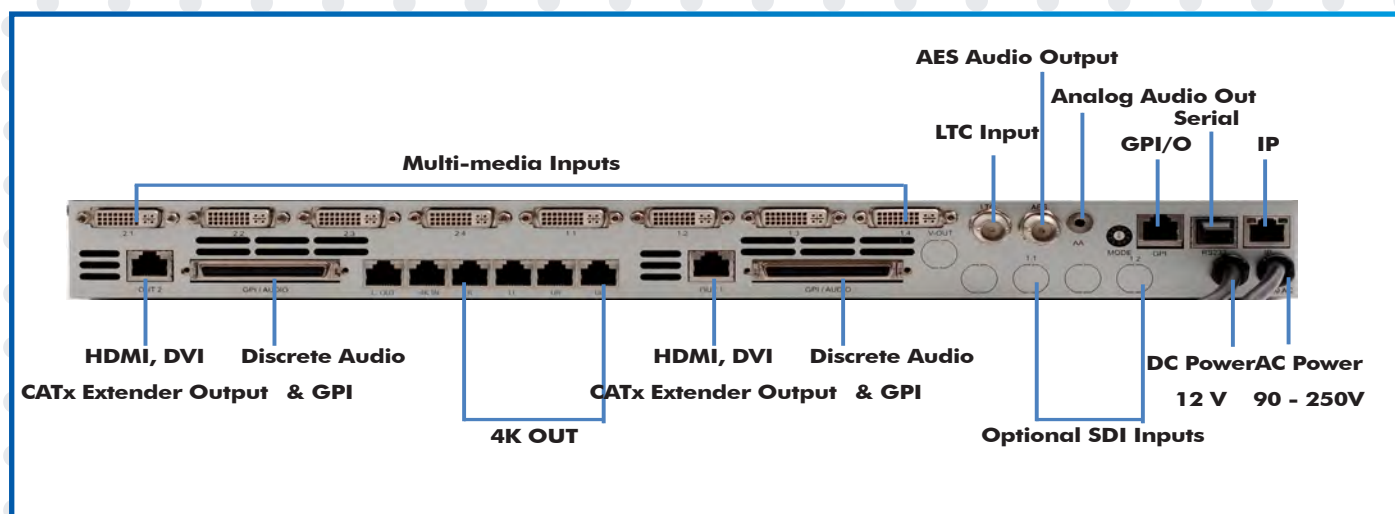
## Accessories

### Standard

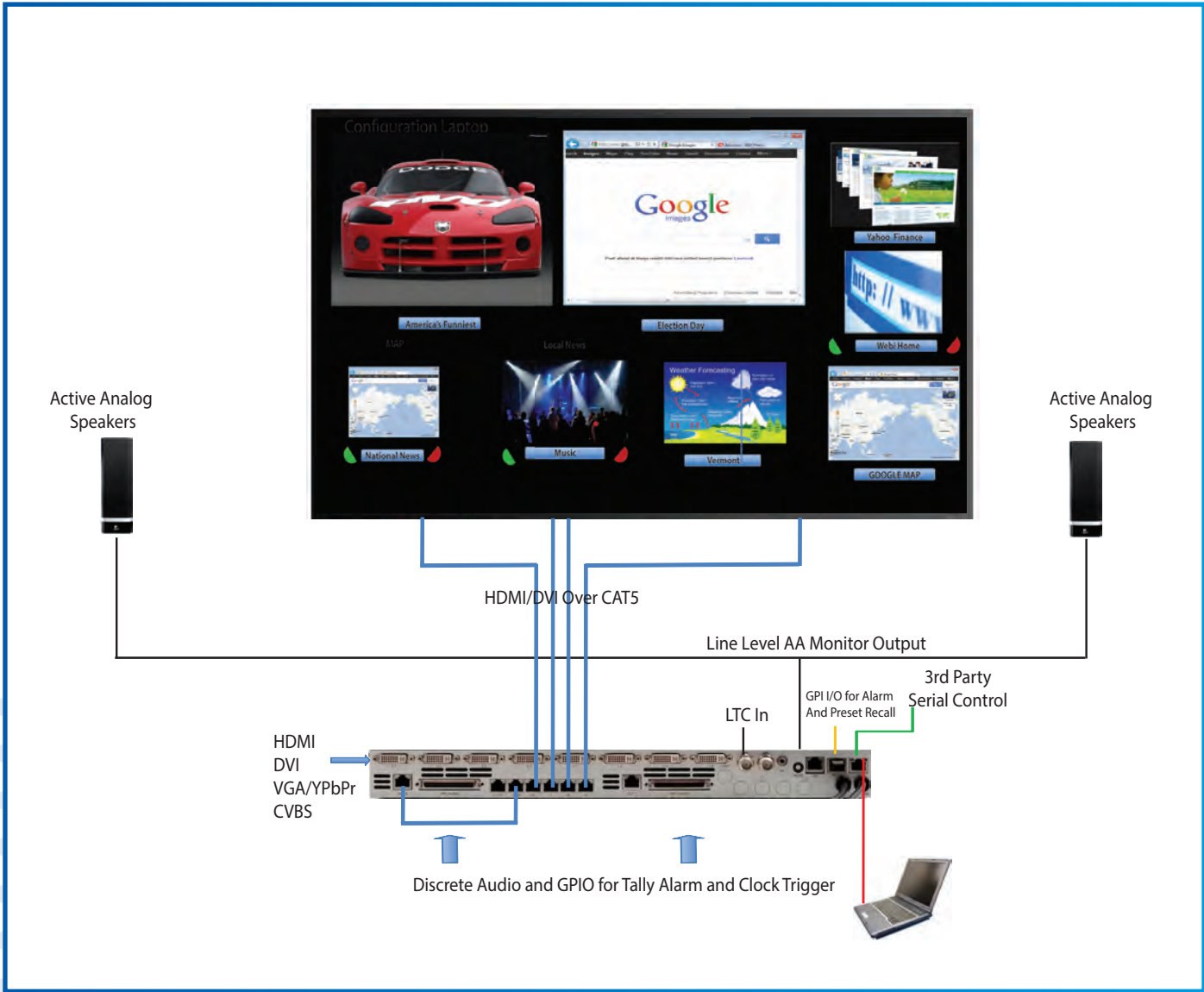
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply







## TAHOMA ULTRA DE - 4K

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 8 DVI/VGA/HDMI/3G/HD/Composite/YPbPr/YC and optional HD-SDI/SD-SDI	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A, DVI-I (DVI-I-VGA adapter, opt DVI-I-Composite/C/YPbPr adapter, opt DVI-I-HDMI adapter)	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 or 8	<b>Outputs</b>	4 DVI, HDMI (RJ45), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	3840 x 2160 @ 60Hz
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LED, clock faces, logos, UMD, OMD, IMD
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>General Purpose IO</b>	Up to 24 inputs with DB9 connectors
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	100 Base-Tx, TSL, AXP, Connector: RJ45
<b>Signal Level</b>	1V nominal	<b>Electrical</b>	100 W, 90 - 250V 50/60 Hz
<b>DC Offset</b>	0V, + - 0.1V	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Impedence</b>	75 ohm for BNC, 100 ohm for DVI-I	<b>Power</b>	Optional redundant power supply
<b>Return Loss</b>	40db up to 5MHz	<b>Size</b>	1 RU, 44.5 cm (17.5") W x 50 cm (19.7") D
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen		
<b>Control</b>	Front panel buttons for quick preset recalls, GPs, Apantac ASCII Protocol (AXP), Director (config & control app)		



# ULTRA-DE-PMW-4/8 MULTIVIEWER

## Key Features

- Output resolution at 3240 x 1920
- Utilizes 3X 1080P displays mounted in portrait mode
- Universal inputs
- 4-8 DVI, VGA, YPbPr, Composite, HDMI (optional) and SD-SDI/HD-SDI (optional) inputs
- Up to 16 channels of embedded audio per input
- 4 channels of discrete audio per input (optional)
- Field upgradable to allow discrete audio (AES/AA)
- Multiple outputs in DVI, HDMI or VGA (option)
- Multiple labels per video windows - UMD, OMD, IMD, standalone labels
- Automatic input aspect ratio detection
- Built-in video, audio alarm detections - no audio, audio high/low, no video, video black, video frozen
- Apantac skin technology allows on-screen graphical elements to be designed with any graphics tool
- Front panel headphone jack with volume adjustment for audio monitoring
- Front panel buttons for quick preset recalls
- 1 RU with optional redundant power supply
- 3 year limited warranty

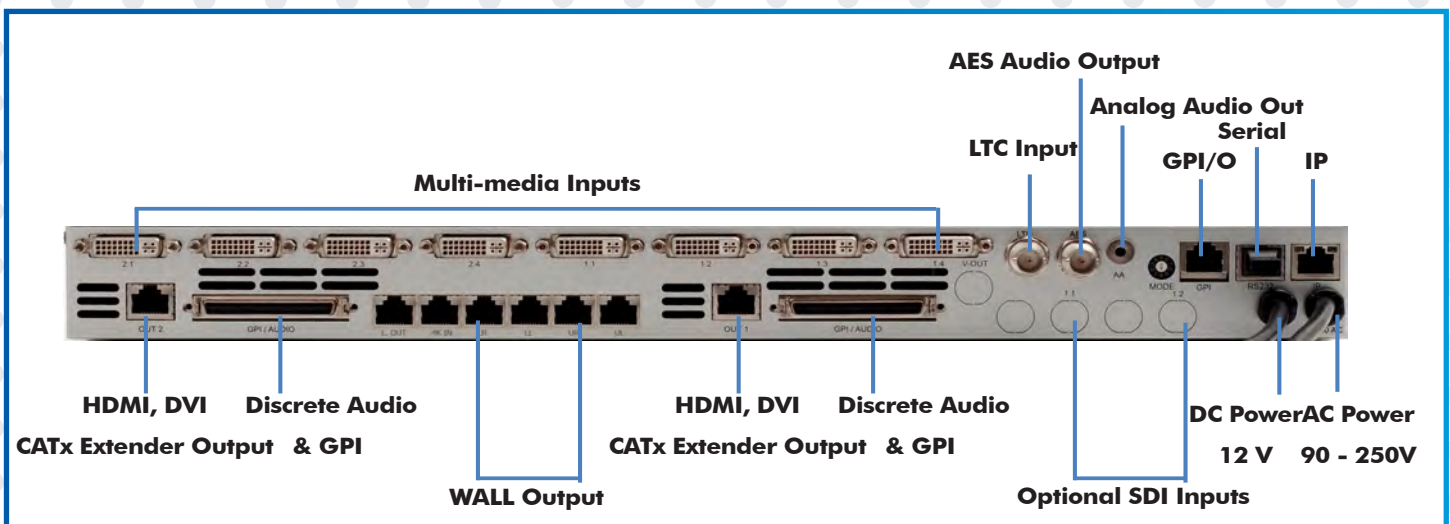
## Accessories

### Standard

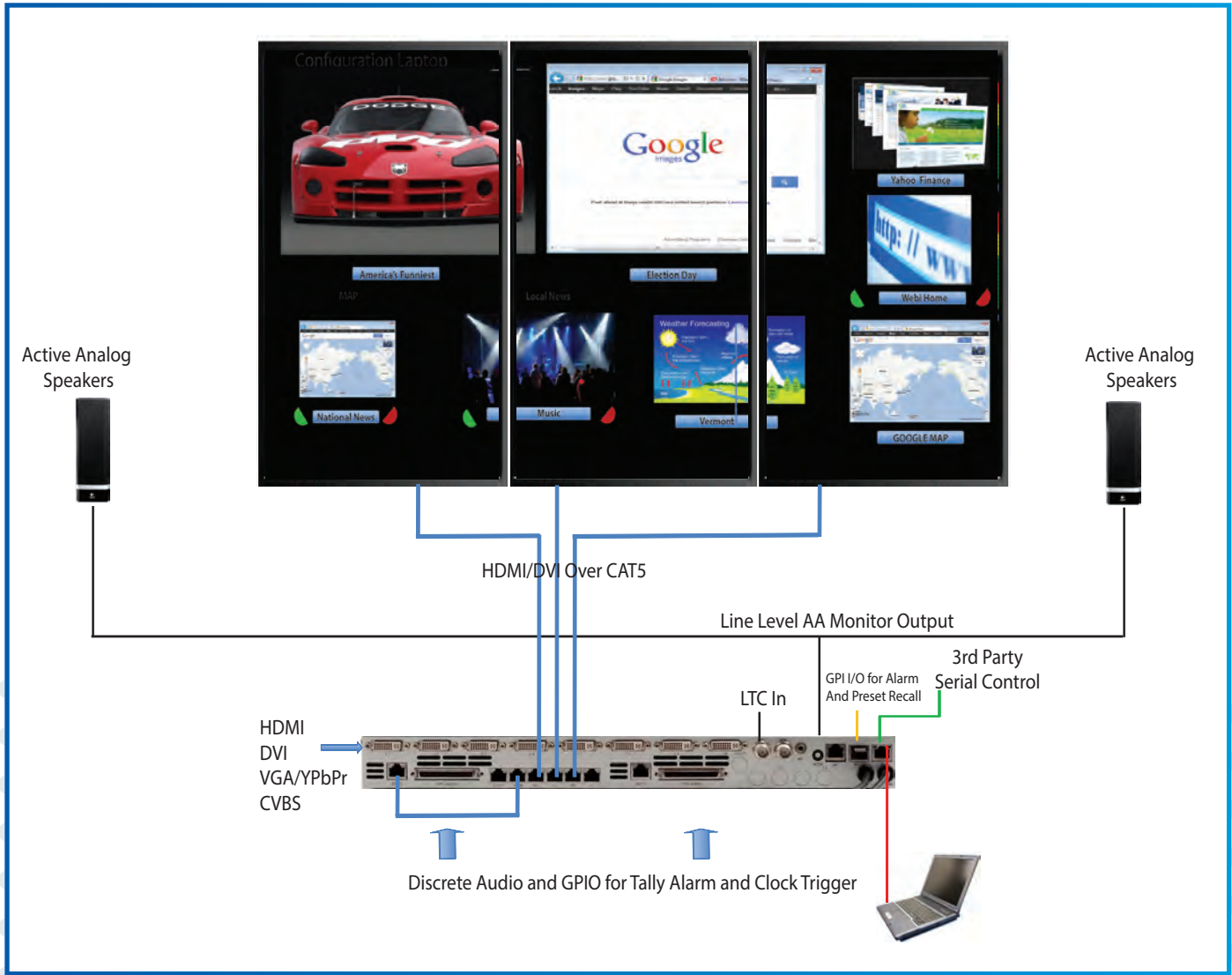
- 15 feet of CAT5 cable
- DVI and HDMI short distance receiver
- Rack mount
- SCSI to DB9 for GPI
- RJ50 to DB9 for GPI per module
- RJ45 to DB9 for serial
- CD (software, manual)

### Options

- SDI Output (1 per module)
- HDMI, DVI, VGA long distance active receivers
- 8 channel AES balanced or unbalanced breakout
- 16 channel AA balanced or unbalanced breakout
- Redundant power supply



## VIDEO WALL with 3 Portrait Monitors



## TAHOMA ULTRA DE - PMW

SPECIFICATIONS			
<b>Video Inputs</b>	Up to 8 DVI/VGA/HDMI/3G/HD/Composite/YPbPr/YC and optional HD-SDI/SD-SDI	<b>Discrete AES Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Connectors</b>	BNC IEC 61169-8 Annex A, DVI-I (DVI-I-VGA adapter, opt DVI-I-Composite/C/YPbPr adapter, opt DVI-1-HDMI adapter)	<b>Discrete Analog Audio</b>	Up to 4 channels / video input (2 pairs, balanced / unbalanced)
<b>Total Windows</b>	4 or 8	<b>Outputs</b>	3 x 1080 x 1920 HDMI (RJ45), SDI (optional)
<b>Serial Digital</b>	SMPTE 424M, 292M, 259M	<b>Output Resolution</b>	3240 x 1920 @ 60Hz
<b>Equalization</b>	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	<b>On Screen Display</b>	Skin Technology for customizing borders, labels (4 per window), fonts, tally LED, clock faces, logos, UMD, OMD, IMD
<b>Return Loss</b>	> 15db up to 1.485 Gbps > 10db up to 3G	<b>General Purpose IO</b>	Up to 24 inputs with DB9 connectors
<b>Embedded Audio</b>	SMPTE-272M-A	<b>Serial Port</b>	RS232 with RS422 or 485 option Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
<b>Composite</b>	NTSC (SMPTE-170M), PAL (ITU624-2)	<b>IP</b>	100 Base-Tx, TSL, AXP, Connector: RJ45
<b>Signal Level</b>	1V nominal	<b>Electrical</b>	100 W, 90 - 250V 50/60 Hz
<b>DC Offset</b>	0V, + - 0.1V	<b>EMI/RFI</b>	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
<b>Impedence</b>	75 ohm for BNC, 100 ohm for DVI-I	<b>Power</b>	Optional redundant power supply
<b>Return Loss</b>	40db up to 5MHz	<b>Size</b>	1 RU, 44.5 cm (17.5") W x 50 cm (19.7") D
<b>Alarms</b>	No audio, audio high/low, no video, video black, video frozen		
<b>Control</b>	Front panel buttons for quick preset recalls, GPIs, Apantac ASCII Protocol (AXP), Director (config & control app)		



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## About Apantac LLC

Apantac is a leading designer and developer of high quality and cost effective multiviewers, video walls, matrices, extenders, and signal processing equipment. The Apantac product line has been specifically designed to provide users with flexible and innovative technology solutions for the broadcast and ProAV industries.

The Apantac product line includes; Multiviewers, video walls, extenders, switches, splitters, matrices, fiber optic extenders, HDBaseT solutions, as well as various video processors. These products are sold globally through direct selling channels, a growing network of dealers, system integrators, OEM's and various other partners.

Apantac was founded in 2008 and is a privately held company with its headquarters located in Portland, Oregon, USA.

For more information about Apantac's products & services please visit: [www.apantac.com](http://www.apantac.com).

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