

# THE SEVEN GENERATOR

**HDMI**<sup>®</sup>  
HIGH-DEFINITION MULTIMEDIA INTERFACE

MURIDEO<sup>®</sup>

ImagingScience<sup>®</sup>  
FOUNDATION, INC



The SEVEN Generator is the next generation in HDMI test and measurement equipment from Murideo. An approved Test Device for Dolby Vision™ and DolbyAudio™, the SEVEN hosts an unmatched suite of audio and video tests. This device is the GO-TO tool for the video device, display, or repeater manufacturer as well as the consummate video professional.

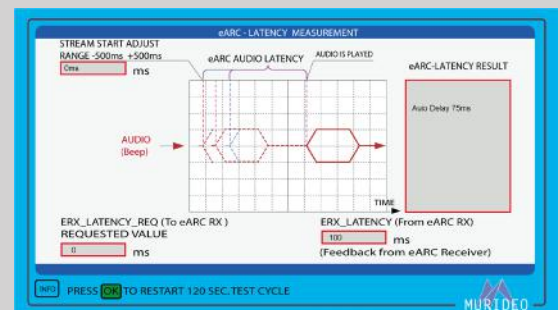
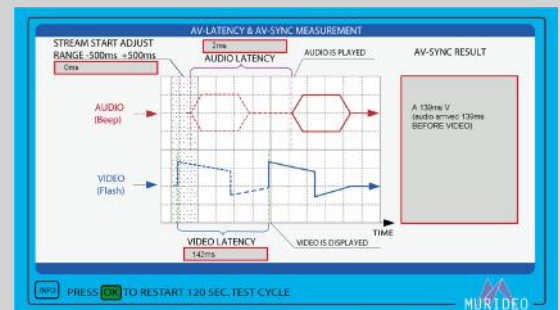
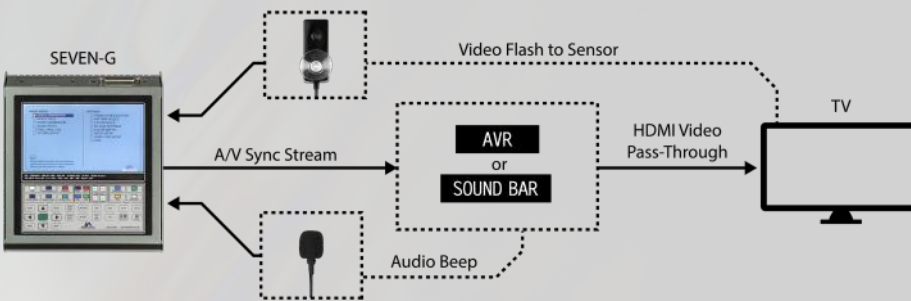
The impressive video capabilities of the SEVEN include native 10/12 Bit BT2020 video output with over 1000 patterns, including HDR, SDR, Dolby Vision, and HLG. Test patterns are generated from FPGA or raw YUV files for a truly native experience and include video playback. The impeccable performance in video generation is just the beginning. As a test device approved by Dolby Laboratories, Inc., SEVEN was designed with advanced audio testing capabilities, including A/V Sync (Lip Sync), Audio Latency, and Dolby Audio.

## TESTING eARC

eARC, also known as enhanced audio return channel, is a brand new method under the HDMI 2.1 specification that allows almost any variation of audio signal to transmit from the display into an AVR or distributed audio system. The SEVEN Generator acts as a sink device and outputs an eARC signal through the specified path on the HDMI pipeline. Test your devices with confidence and make sure they can handle eARC signals including Dolby Audio signals. You can test input lag and A/V sync via the eARC pathway as well.

## TESTING LATENCY AND AV SYNC

“Input-Lag” has become a major buzz-word in the consumer world and manufacturers need to understand this number. The SEVEN can generate and measure both the audio and video latency giving you individual readouts down to the millisecond. The readouts from this input lag testing allow you to perfectly match the AV Sync (Lip Sync).



## TEST PATTERNS

The SEVEN Generator has over 1000 native 10/12 bit video and BT.2020 color gamut test patterns including those from Diversified Video Solutions, Sony Pictures Entertainment, Imaging Science Foundation, Professional Video Alliance, Spears & Munsil and more. The SEVEN has a unique feature that allows the user to quickly access their 14 most commonly used test patterns. This saves the user a ton of time from searching for commonly used patterns. This can also be done with the users' most commonly used resolutions.



The SEVEN brings more to the table with Dolby Vision calibration. With the full suite of Dolby Vision test patterns, you will have everything you need to be able to calibrate the incredible format adequately. Last but not least, the SEVEN features a free software enhancement to upload your own video content. You can load up to six test patterns (stills) and two video files (multi-frame .YUV or .MOV). The SEVEN Generator is also compatible with CalMAN Calibration Software.



## HDMI 2.1

The SEVEN is shipping now with full 4K video capabilities and existing HDMI 2.1 features like 120fps video and eARC. It can be upgraded to 8K in the future which will include full 48 Gbps speeds, 5, 8, and 10K test patterns, FRL tools, and more.

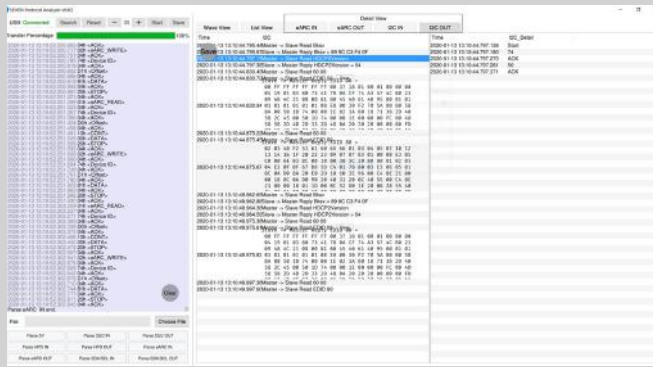
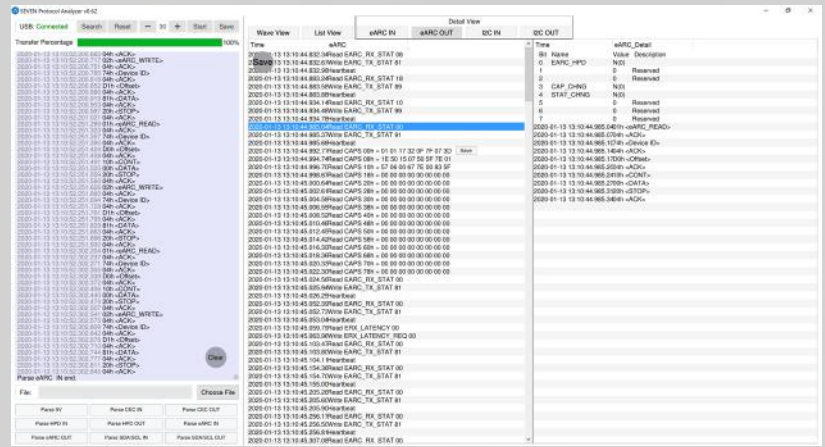
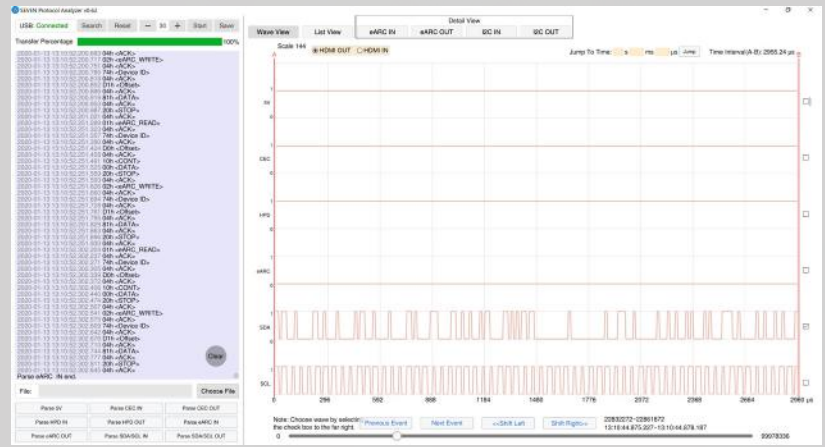




# PROTOCOL ANALYZER SOFTWARE

Connecting this software to the SEVEN Generator allows engineers working with HDMI products to get extremely detailed readings of events and capture segments. These readings are down to the picosecond with easily adjustable views and parsing options, allowing the user to find very specific transactions and map them throughout time.

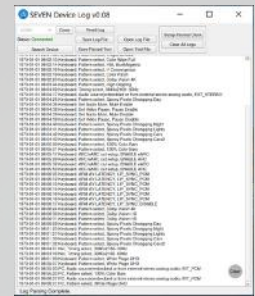
- Analyze I2C Transactions (HDMI Source & Sink)
- Analyze eARC Transactions (eARC Source & Sink)
- Parse/Analyze 5V, CEC In/Out, HPD In/Out, SDA (Serial Data), SCL (Serial Clock)
- View Data in "Wave View" & "List View"
- Save sampling (.bin) for later analysis to share for anyone with software to view.
- Save text data at .txt for visual analysis



# DEVICE LOG SOFTWARE

The SEVEN Generator's device log software allows you to see exactly how the SEVEN Generator has been used and what operations have been taking place. This will help you when duplicating tests and also helps Murideo if you have questions about testing with the SEVEN Generator.

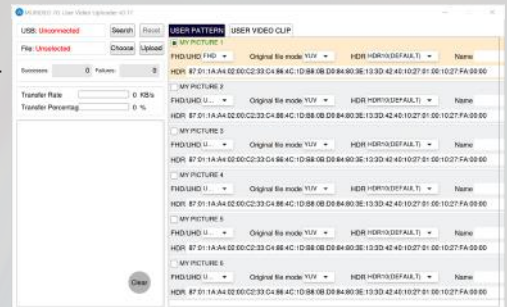
- Log every event from beginning of "Time"
- Set Internal Clock
- "Keystroke" logger
- Export/Load .txt/.bin data



# PATTERN AND VIDEO UPLOADER

With this software connected to the SEVEN Generator, upload your own test patterns and videos.

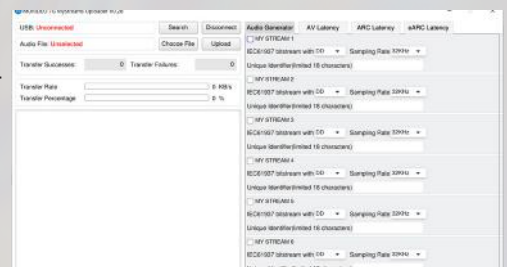
- Upload full 4K .YUV or .MOV Videos
- Upload HDR Video or Test Patterns
- Load up to 120 FPS video
- USB 3.0 for fast loading
- Ability to name file to make it easy to find

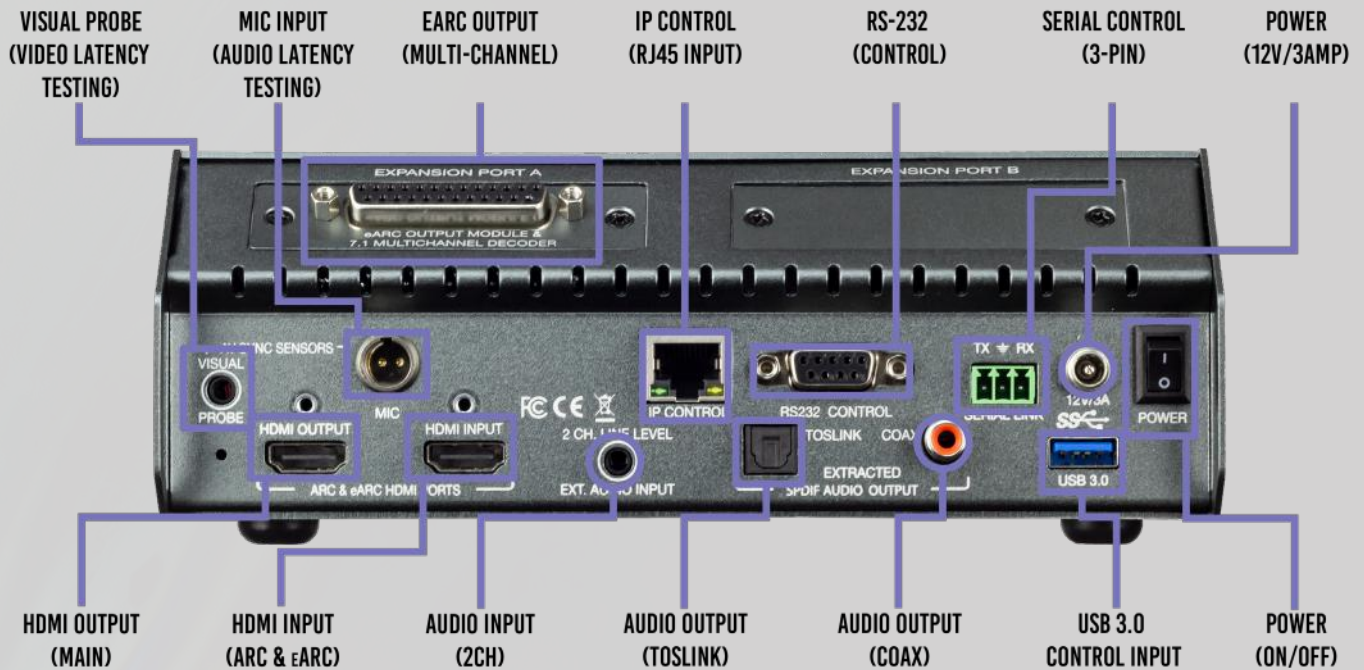


# AUDIO STREAM UPLOADER

With this software connected to the SEVEN Generator, upload your own audio test streams.

- Upload your own custom audio formats
- Upload 8 channel audio types including Dolby formats with custom metadata
- Test custom audio formats through HDMI, ARC or eARC signal channels





## GENERAL FEATURES

- Complete HDMI 2.0 Support (All Revisions)
- 600 Mcsc – 2160P @60 4:4:4 Maximum Resolution
- 4K BT2020 (WCG) 10/12 Bit Support (Native)
- Dolby Vision, HDR 10, HLG, SDR
- HDCP 2.3 Support
- HDMI 2.1 Features
  - eARC Tx
  - 1080P 120Hz patterns and video playback
- HDMI 2.1 Upgrade Option (Future)
  - Full FRL Support
  - Full 48Gbps Video Playback
- ISF Labs Certified
- Protocol Analyzer: PC Software for inline real-time analysis of all HDMI TX & RX traffic – 5V, CEC, HPD, eARC, SDA, SCL – allows parsing, offline file storage, list view and waveform views
- Data Log: Use the real time clock to analyze historical activity of the device (export/import)
- Control
  - Haptic Front Keypad & 1080P Screen
  - PC Control Software
  - API (Application Programming Interface) Available
  - Reporting/Exporting
- Audio Test Suite: Audio Signal Generator (HDMI, ARC, eARC), A/V Sync (HDMI), Audio Latency (HDMI, ARC, eARC), Video Latency (HDMI, ARC, eARC), includes pop-click latency test tools
- Reference Source / Auto-Control for CalMAN, Light Illusion
- Optimized 7" 1080P OLED display and simple menu system, paired with logical feedback make it ideal to "pick up and use".
- Pattern Uploader
  - USB 3.0 for fast uploads
  - Reservation for up to 3 minutes of full 4K video
  - Native YUV File upload and playback

## SPECIFICATIONS

VIDEO	
VIDEO RESOLUTIONS AND TIMING	UP TO 4K RESOLUTION, UP TO 120Hz TIMING
VESA RESOLUTIONS	UP TO DCI 4K (4096x2160) 5K (UP TO 5120x3200)
HDR FORMATS/RESOLUTIONS	420, 422, 444 (NATIVE 10 AND 12 BIT DEEP COLOR) HDR10, HDR10+, DOLBY VISION, HLG
COLOR SPACE	YUV (COMPONENT), RGB (CSC: REC. 601, REC. 709, BT2020, DCI, P3 D6500)
CHROMA SUBSAMPLING	4:4:4, 4:2:2, 4:2:0 SUPPORTED
DEEP COLOR	UP TO 16 BIT (1080P), UP TO 12 BIT (4K)
AUDIO	
AUDIO FORMATS SUPPORTED HDMI	PCM 2.0 CH, LPCM 5.1 & 7.1, DOLBY DIGITAL, DOLBY DIGITAL PLUS (W/ ATMOS), DOLBY MAT (W/ ATMOS) DOLBY TRUEHD (W/ ATMOS)
AUDIO FORMATS SUPPORTED EARC	PCM 2.0 CH, LPCM 5.1 & 7.1, DOLBY DIGITAL, DOLBY DIGITAL PLUS (W/ ATMOS), DOLBY MAT (W/ ATMOS) DOLBY TRUEHD (W/ ATMOS)
AUDIO FORMATS SUPPORTED ARC	PCM 2.0 CH, LPCM 5.1 & 7.1, DOLBY DIGITAL, DOLBY DIGITAL PLUS (W/ ATMOS)
AUDIO FORMATS SUPPORTED (TOSLINK)	PCM 2.0 CH, LPCM 5.1 & 7.1, DOLBY DIGITAL, DOLBY DIGITAL PLUS
AUDIO FORMATS SUPPORTED (COAX)	PCM 2.0 CH, LPCM 5.1, DOLBY DIGITAL
OTHER	
BANDWIDTH	18Gbps
HDCP	HDCP 2.3 AND EARLIER
CONTROL	
PORTS	LAN, RS232 DB9, RS232 3-PIN, KEYPAD, USB 3.0
LAN WEBS	YES
PORTS	
HDMI SOURCE	TYPE A
HDMI SINK (ARC/EARC TX)	TYPE A
LAN WEBS	RJ45 W/ WEB INTERFACE/ CONTROL
AUDIO (EXTRACTED DIGITAL)	TOSLINK AND COAXIAL
AUDIO INPUT	3.5MM
RS232	3 PIN TERMINAL BLOCK AND DB9
USB	FEMALE 3.0
MICROPHONE	MINI XLR
PHOTO-DIODE	3.5MM
EXPANSION DECODER	DB25
ENVIRONMENTAL	
OPERATING TEMPRATURE	23 TO 125°F (-5 TO 51°C)
STORAGE TEMPRATURE	-4 TO 140°F (-20 TO 60°C)
HUMIDITY RANGE	5-90% RH (NO CONDENSATION)
POWER	
POWER CONSUMPTION (TOTAL)	18 WATTS MAX
POWER SUPPLY	INPUT: AC 100-240V ~ 50/60HZ OUTPUT: DC 12V 3A

\*SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. MASS & DIMENSIONS ARE APPROXIMATE