# Product Catalog

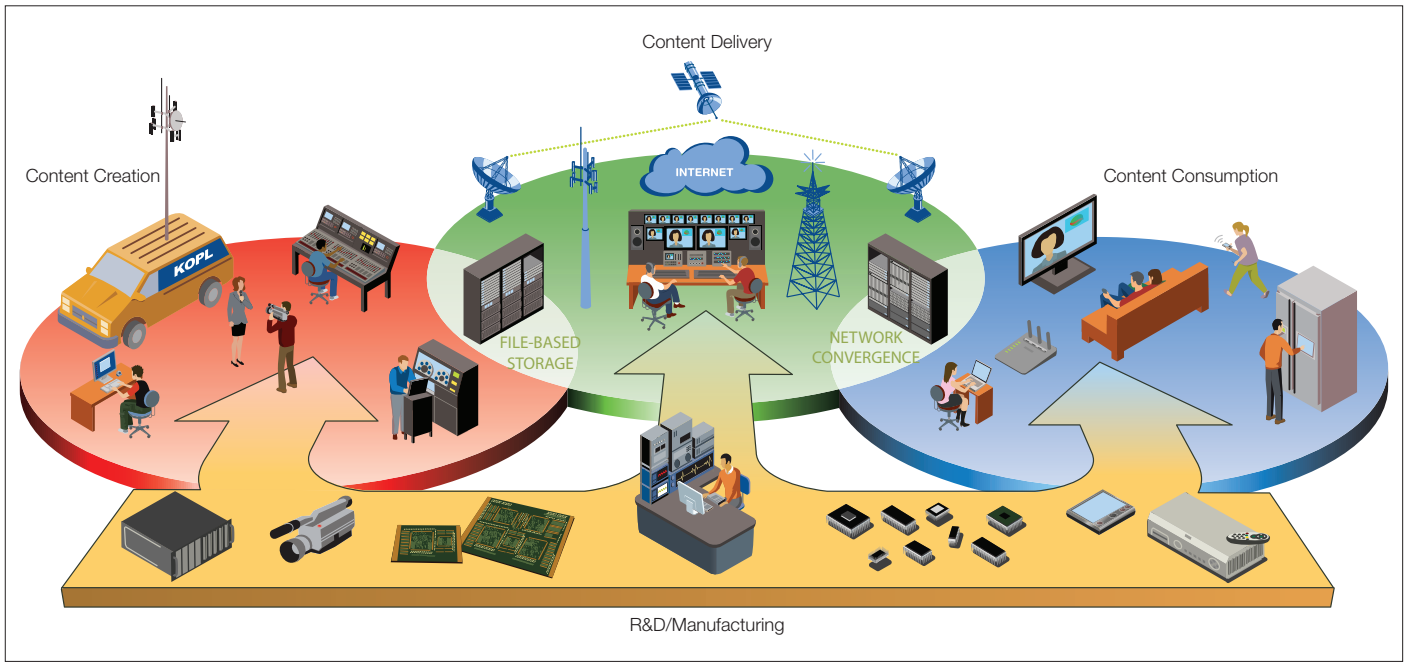
## Video Test and Measurement Solutions

Tektronix®

# Enabling innovation in the New Digital Age

### Solving today's digital video delivery and quality challenges

Digital technology is quickly replacing analog technology at every level in the video industry, enabling entirely new classes of products and services. This transformation is fundamentally changing how video content is created, stored, managed, distributed and enjoyed. The digital video ecosystem is comprised of companies in the business of creating and distributing content as well as the designers and manufacturers of professional and consumer electronics. The new competitive landscape reflects the pace and scope of technology-driven change and Tektronix continues to provide the most comprehensive range of solutions across the entire ecosystem.



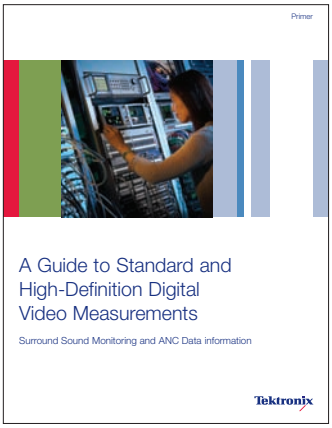

## For our customers and for Tektronix, Innovation never rests...

Our customers are continually striving to improve business efficiency and competitive advantage. They require the ability to quickly embrace new technologies and positively impact workflow efficiency. The ability to quickly deploy new services, maintain QoS and quickly isolate and correct errors are critical components of this model. For Tektronix our goal is to stay ahead of the technology curve and ensure delivery of test & measurement solutions to our customers when they need them. Tektronix solutions enable our customers to effectively integrate new technologies, improve workflow efficiency and achieve business excellence.

Use this Solutions Matrix to see where we can help you.

| | Content Creation & Post Production | Content Delivery | Deployment, Diagnostics & Maintenance | R&D, Equipment Manufacturers |
|---|---|---|---|---|
| Signal Monitors | ✓ | ✓ | ✓ | ✓ |
| Signal Generators | ✓ | ✓ | ✓ | ✓ |
| Signal Analyzers | | ✓ | ✓ | ✓ |
| Automated Content Verification | ✓ | ✓ | | |
| Compressed Video Monitors | | ✓ | ✓ | ✓ |
| MPEG Generators | | ✓ | ✓ | ✓ |
| MPEG Analyzers | | ✓ | ✓ | ✓ |
| MPEG Test & Analysis Software | | ✓ | ✓ | ✓ |

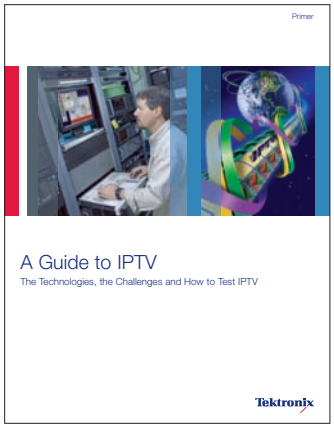
# Order Your Free Technology Primers and Posters Online Today




## A Guide to Standard and High-Definition Digital Video Measurements

This primer offers a wealth of information on video test and monitoring. It now includes surround sound monitoring and ANC data information.

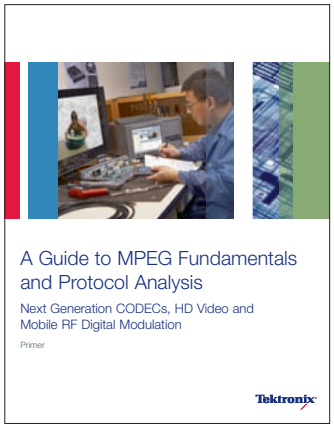
**To order your free copy of this primer visit:**
**www.tektronix.com/sd_hd_measurements**




## A Guide to IPTV

This primer offers a wealth of information on the technologies and challenges, along with how to test IPTV.

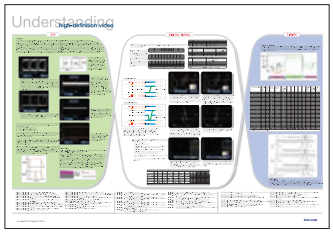
**To order your free copy of this primer visit:**
**www.tektronix.com/iptv_guide**




## A Guide to MPEG Fundamentals and Protocol Analysis

This primer is the reference for MPEG fundamentals and protocol analysis, including educational information on next generation CODECs, high definition video and mobile RF digital modulation.

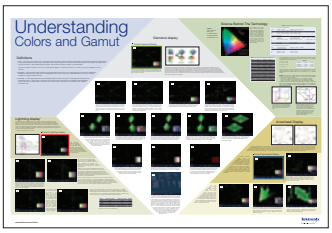
**To order your free copy of this primer visit:**
**www.tektronix.com/mpeg_fundamentals**



## Understanding High-Definition Video Poster

This poster provides a graphical reference to understanding high definition video.

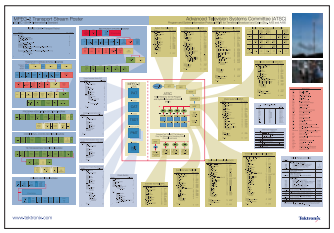
**To order your free copy of this poster visit:**
**www.tek.com/video/HDposter**




## Understanding Color and Gamut Poster

This poster provides a quick graphical reference to understanding gamut and how to correct gamut problems within the video signal.

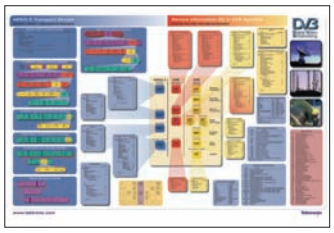
**To order your free copy of this poster visit:**
**www.tek.com/video/CGposter**



## ATSC Standard Poster

This poster provides a reference to the Advanced Television System Committee (ATSC) A/65 standard and MPEG-2 transport stream - ISO/IEC 13818-1 International Standard.

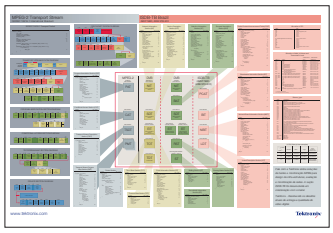
**To order your free copy of this poster visit:**
**www.tek.com/video/MPEGposter**



## DVB (Digital Video Broadcasting) Standard Poster

This poster provides a reference to the DVB standard. Service Information (SI) in DVB systems and MPEG 2 Transport stream - ISO/IEC 13818 International Standard.

**To order your free copy of this poster visit:**
**www.tek.com/video/MPEGposter**



## ISDB-Tb Poster

This poster provides a reference to the DVB, ARIB and ISDB-Tb ABNT NBR service information tables.

**To order your free copy of this poster visit:**
**www.tektronix.com/MPEGposter**

# MTM400A Transport Stream Monitor

The MTM400A Transport Stream Monitor is a scalable solution that detects Digital TV system degradation, and enables operators to easily perform diagnostics and rapidly pinpoint problems, ensuring an error-free network and minimal downtime.

*FlexVu*Plus™ is a new browser enabled, user definable interface that is powerful, personal and enables improved productivity. Up to four panels can be displayed in the UI window and can be sized and repositioned based on operational needs. *FlexVu*Plus provides a user definable "button strip," "historical views," and "short-cuts" that intuitively guide a user to key areas of interest to accelerate video delivery fault root cause analysis. Thumbnail displays with performance indicators show overall program status in addition to video PID status.

### Applications

- Terrestrial distribution
- Contribution and primary distribution
- Cable headend monitoring
- DTH or network operator satellite uplink monitoring
- Video over IP and IPTV Applications
- Combine with the Opt. TSCL (DVB/ATSC/ARIB TS Compliance Analyzer Software) for off-line analysis of recorded TS files to 192 Mb

### RF Monitoring Features and Benefits

- Monitor key measurements according to DVB standard with real-time monitoring of key TR 101 290 parameters
- Embedded real time operating system provides a high-reliability system for unattended 24x7 operation
- User-defined template monitoring option to ensure right content at the right place at the right time
- Confidence monitoring at the RF layer with optional QPSK, QAM, COFDM, 8VSB, Turbo 8PSK, DVB-S2 and QAM-B interfaces
- RF diagnostic mode enables measurements on signals where lock cannot be achieved
- Critical RF Measurements, MER, and EVM provide early indication of signal degradation before any picture impairment is visible to the end customer, without additional costly RF test equipment

By monitoring the quality of the broadcast video at any network access point, from the core of the IP network to the RF edge, broadcasters and network operators can improve network performance and deliver superior quality of service to customers.

**For further details visit:**
**www.tektronix.com/MTM400A**

# RFM300 ATSC DTV Monitor

The RFM300 provides a complete solution for real-time DTV monitoring. The comprehensive RF and PSIP confidence-monitoring capability provides a powerful and cost-effective solution for monitoring DTV transmitter sites along with contribution and distribution feeds at local and national operation centers for FCC compliance.

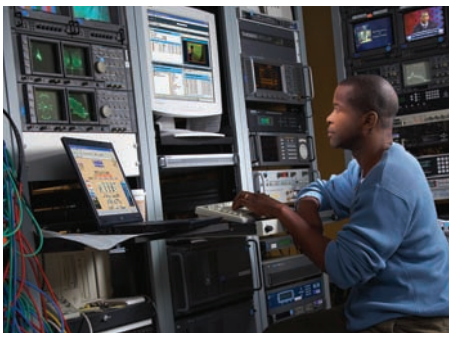
### Applications

- Monitoring DTV transmitter sites along with off-air monitoring, as well as contribution and distribution monitoring at local and national operation centers and head-ends

### Features and Benefits

- Comprehensive confidence monitoring at the 8VSB modulated layer. This includes monitoring of the symbol distribution waterfall chart and MER, BER and SNR measurements for continuous monitoring of signal quality.
- PSIP analysis and repetition-rate graphing allows broadcasters to determine whether the system information is present and correct in the transport stream, ensuring FCC compliance
- Detect errors that impact viewer's video quality according to ATSC A/78, including Closed Captioning (CC) and Regional Ratings Table (RRT)
- Multilayer, multi-channel, remote monitoring and measurements at the RF, and MPEG transport stream layers, to ATSC A/65 standards
- Service logging supports verification of service-level agreements to ensure that all contractual obligations are met
- Unique dual-level alarming and seven-day trend information proactively identifies impending problems before they become visible to the viewer without additional costly RF test equipment
- Video and Audio backhaul for content checking and verification allows a broadcaster to view transmitted content in the native, uncompressed format
- Unique learning capability creates a true "monitor by exception" mode of operation. This reduces operational expenditure by eliminating non-customer-impacting alarms to focus resources only on critical activities.
- *FlexVu*Plus™ uniquely empowers operations staff with the simplest information necessary to prove their service is delivering above their defined thresholds for FCC compliance

**For further details visit:**
**www.tektronix.com/rfm300**




## IPM400A IP Video Monitor

The IPM400A helps video network operators efficiently deliver superior quality of service (QoS) levels by providing an intuitive and simplified representation of video quality and diagnostic information. Simultaneously verify IP and TS integrity on all IP Video sessions on a GbE link, for monitoring networks which carry either single program, or multi-program transport streams.

### Applications

- Diagnostic monitoring of IP Video contribution and primary distribution (Cable head-end monitoring, Terrestrial distribution and DTH or network operator satellite uplink monitoring)
- IPTV ingest and head-end monitoring

### Features and Benefits

- Ensure IP and TS integrity for all services on a GbE link by monitoring up to 500 IP sessions including all essential parameters, such as continuity count, sync byte, packet inter-arrival time (PIT) and MDI
- Analyze program utilization over time to determine if overwhelmed routers are dropping packets
- In-depth analysis of transport stream, syntax, timing and content to support root-cause analysis of system errors with comprehensive TR 101 290 Priority 1, 2 & 3 MPEG measurements
- Filter and display only errors that require immediate attention from the SCTE-142 five distinct levels of importance
- Analyze and diagnose "splice" advertising and other local content from SCTE 35 DPI monitoring
- Feed back actual content to a central monitoring point to see and hear the actual content being broadcast with the Video/Audio backhaul
- Provide early visibility of problems to predetermined, key individuals, supporting quicker corrective action with the simultaneous connection of multiple remote users and network management systems (NMS)

**For further details visit:**
**www.tektronix.com/ipm400**

## VQNet

The VQNet video service assurance manager is an Element Management System for Tektronix RF, TS and IP Video QoS probes to alert, locate and diagnose video network problems. It provides alarms, logs, trending and reporting of key performance metrics from a system of distributed probes. It identifies services impacted and enables engineers to drill down for rapid root-cause analysis of video service delivery issues.

### Applications

- Network-wide diagnostics for video/network operations centers and head-end operations teams responsible for video delivery through their networks
- Cable, Telco, Terrestrial and Satellite video delivery networks required to maintain quality of service and ensure signal integrity, reducing subscriber dissatisfaction and protect subscriber and advertiser revenues

### Features and Benefits

- Identify and resolve real-time video network errors with facility and network-wide views, and view thumbnails or backhaul video content from any probe within the network
- Identify the location and root cause of underlying systemic service delivery problems across a head-end network with statistical logging, report generation and trending analysis
- Provides an integrated network view of multiple network elements into Network Management Systems and to existing DataMiner Network Management Systems (including encoders, multiplexers, routers, STB's etc) enables
- Install, configure and maintain your own monitoring system with automatic discovery of probe availability, configuration and diagnostic capabilities

**For further details visit:**
**www.tektronix.com/vqnet**

## MTX100B MPEG Recorder and Player

The MTX100B MPEG Recorder and Player reduces product development expense and time-to-market by offering a flexible, portable, player and recorder for quick design verification, standards compliance and determination of operating margins. The new real time/deferred time transport stream analyses, together with the IP generation, bring the power of lab evaluation to the field in a small, portable package.

### Applications

- IRD/STB design and manufacturing test
- Evaluation of professional MPEG and MPEG/IP equipment
- Performance verification of MPEG and MPEG/IP systems
- Portable, field analysis tool for system installation, commissioning and debug of MPEG and MPEG/IP transmission systems
- Combine with the MTM400A for triggered recording of live streams up to 100 GB.

### Features and Benefits

- High capacity storage and high data rate recording and playout of MPEG transport streams lets you build, maintain and use your own local library of test streams
- A new Tclips test stream library is provided which includes over 300 video and 50 audio test Transport Streams. Encoded as H.264 and MPEG-2, HD and SD, these streams provide a source of reference material that can be used to test decoders in video equipment. Combined with the Multiplexer option, reference test streams can be created and manipulated to include DVB and ATSC Service Information.
- Add option MX to create deferred time multiplexed Transport Streams for generating known good test streams or streams with known repeatable errors for compliance and stress testing
- Real-time updating of timestamps and time tables for error-free looping
- PCR jitter insertion to help you fully stress your product or system design
- New IP layer packet jitter and packet error insertion combined with continuous time stamping for seamless looping provide a repeatable source of errored and non-errored IP streams to stress test network or consumer equipment
- ASI, SMPTE310M and Ethernet/IP interface options
- Add software options to provide TS analysis, PES and buffer analysis, elementary stream analysis, and data broadcast analysis and generation

**For further details visit:**
**www.tektronix.com/mtx100b**
**www.tektronix.com/video5**

## RTX100B ISDB-T and ISDB-Tb RF Signal Generator

The RTX100B ISDB-T RF Signal Generator offers a flexible, affordable solution for design evaluation and conformance testing of digital video products conforming to the Integrated Service Digital Broadcasting- Terrestrial (ISDB-T and ISDB-Tb) standard for digital terrestrial TV systems. The RTX100B provides the capability to record and play out MPEG-2 transport streams, and modulate the up converted RF signal.

### Applications

- ISDB-T and ISDB-Tb consumer receiver design and manufacturing test
- Evaluation of professional ISDB-T and ISDB-Tb equipment
- Performance verification of ISDB-T and ISDB-Tb systems
- Simulation of digital terrestrial broadcasting transmission
- Scheduling of stream playout and recording for broadcast and production line applications

### Features and Benefits

- Rapid setup using automatic detection of parameters from the broadcast stream, to modulate the RF output accordingly
- The RTX100B can be used as a simple ISDB-T modulator as it can modulate the stream from ASI directly without the need to store the stream
- Real-time Updating of Timestamps, Time Tables, and ISDB-T Reed Solomon FEC for Error-free Looping
- IEEE1394b, USB2.0, and GbE interface download of Transport Streams for optimum flexibility in storing and managing Transport Stream Libraries
- IP layer packet jitter and packet error insertion combined with continuous time stamping for seamless looping provide a repeatable source of errored and non-errored IP streams to stress test network or consumer equipment
- Add option MX to create deferred time multiplexed Transport Streams for generating known good test streams or streams with known repeatable errors for compliance and stress testing
- Add software options to provide TS analysis, PES and buffer analysis, elementary stream analysis, and data broadcast analysis and generation
- The Test Stream Library includes over 300 video and 50 audio test Transport Streams. Encoded as H.264 and MPEG-2, HD and SD, these streams provide a source of reference material that can be used to test decoders in video equipment. Combined with the Multiplexer option, reference test streams can be created and manipulated to include DVB and ATSC Service Information.

**For further details visit:**
**www.tektronix.com/rtx100b**

# RTX130B MPEG RF and IP Signal Generator

Optimized for ease-of-use, the RTX130B is a portable, flexible, feature-rich, MPEG stream recorder and player with RF modulated output and IP stream generation. The RTX130B conforms to DVB-C / QAM ITU-T J.83 standards, Annex A (DVB-C), B, C and ATSC VSB specifications. The RTX130B is the optimum tool for design and evaluation of consumer QAM & VSB equipment, such as set-top boxes and integrated televisions, devices requiring both IP/Ethernet and directly modulated RF inputs.

**Applications**

- Headend in a Box for in house test systems
- QAM and VSB Consumer Receiver Design and Manufacturing Test
- Performance Verification of QAM and VSB Systems
- Simulation of Digital Terrestrial and Cable Broadcasting Transmission
- Scheduling of Stream Play Out and Recording for Production Line Applications
- Combine with the MTS4EA and PQA500 for STB Picture Quality Analysis
- Combine with the Test Pattern Matrix and VM6000 for STB Analog Video Analysis

**Features and Benefits**

- The integrated MPEG Generator, upconverter and RF modulator let you evaluate your product at both the IF and RF levels
- IP layer packet jitter and packet error insertion combined with continuous time stamping for seamless looping provide a repeatable source of errored and non-errored IP streams to stress test network or consumer equipment
- High capacity storage and high data rate recording and playout of MPEG transport streams lets you build, maintain and use your own local library of test streams
- A new Tclips test stream library is provided which includes over 300 video and 50 audio test Transport Streams. Encoded as H.264 and MPEG-2, HD and SD, these streams provide a source of reference material that can be used to test decoders in video equipment. Combined with the Multiplexer option, reference test streams can be created and manipulated to include DVB and ATSC Service Information.
- Continuous, error free transport stream looping enables long duration play out, and PCR jitter insertion can help to stress product designs
- Add option MX to create deferred time multiplexed Transport Streams for generating known good test streams or streams with known repeatable errors for compliance and stress testing
- Add software options to provide TS analysis, PES and buffer analysis, elementary stream analysis, and data broadcast analysis and generation

**For further details visit:**
**www.tektronix.com/rtx130b**

# MTS400 Series MPEG Test System

The MTS400 Test System offers significant enhancements over traditional MPEG analyzers, and operates both in real-time (live streams) and deferred-time (stored streams). The combination of real-time error capture, an innovative high-speed analysis engine, a wide range of interfaces, and built-in intelligence, allows ultra-fast pinpointing and debugging of intermittent faults in broadcast equipment.

A comprehensive suite of analysis tools include Transport Stream (TS) Compliance Analyzer, Buffer, PES, compressed video and audio elementary stream analyzers, together with TS Editor, Multiplexer, and Data Broadcast applications for stream creation, analysis, and error-injection. Available as stand alone software, as well as with the MTS400 Series hardware instruments, these applications provide the test tools required in development of next generation consumer equipment and software products for the broadcast industry.

## Applications

**MTS430 Solution for Equipment Manufacturers - Research & Development**

- CaptureVu™ technology allows rapid isolation and debugging of equipment and system faults
- High performance line rate Gigabit Ethernet (GbE) IP connectivity and integrated cross layer MPEG/IP analysis enable diagnosis of complex timing problems in video over IP and IPTV network equipment
- Combination of Tclips test streams plus Multiplexer/Re-Multiplexer allows flexible test stream creation and modification
- Rapid and in-depth analysis of selected elements of transport streams to confirm functionality and compliance to standards
- Set Top Box buffer testing and verification
- Elementary stream analysis option for codec design and optimization

**MTS415 Solution for Broadcasters and Network Operators**

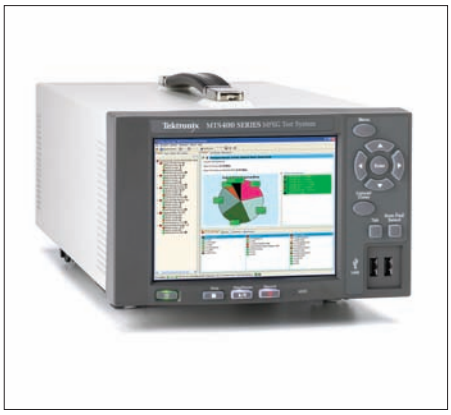
- RF and IP Connectivity and analysis provide single box solution for broadcast system troubleshooting
- Integrated cross layer MPEG/IP fault analysis and logging for network fault diagnosis reduces time to insight when troubleshooting and removes the need for additional IP or RF specific diagnostic equipment
- CaptureVu™ technology allows isolation of intermittent network problems that other analyzers would not be capable of isolating
- Tests contribution feeds or encoder outputs, multiplexer inputs / outputs, headend modulators and IP encapsulators
- Tests PCR insertion, recovery, and re-generation equipment
- Encoder fault diagnosis and evaluation
- Analysis of transport streams to confirm correct system operation and isolate faults during installation and commissioning

## Features and Benefits

- Industry's fastest analysis engine enables reduced time to insight, rapid development, evaluation, deployment and diagnostics of next generation DTV and IPTV systems and services
- A wide range of DTV standards are supported, including MPEG, DVB, ATSC, ISDB, and ISDB-Tb (Brazil). Specific SI for Terrestrial, Cable, and Satellite, plus regional variations of these standards are also supported
- Range of interfaces and analysis capabilities provide the necessary connectivity to diagnose problems anywhere in the network environment, whether that be transmission links (RF or IP layer) or content processing (TS layer)
- Connect to both IP version 4 and 6 networks, including those using IGMP and MLD multicast protocols respectively
- Analyze both constant and variable bit rate streams (CBR and VBR[*1])
- Integrated cross layer MPEG/IP fault analysis and logging provides one box solution for fault diagnosis, reducing time to insight when troubleshooting
- Playout functionality provides stimulus with parametric capabilities and IP multi session replication to characterize behavior of network or device under test
- CaptureVu™ technology captures and analyzes system events in real time and deferred time to debug the intermittent and complex problems that traditional analyzers miss
- Innovative program centric user interface brings expert power to the novice user
- H.264 Buffer Analysis, Multiplexing and ES Compliance Checking provide the most powerful suite of tools for creation and analysis of Transport Streams containing H.264 content
- Both Buffer Analysis and Multiplexing are now available for MPEG-4 AAC, a mandatory ISDB-Tb audio CODEC. These compliment the existing MPEG-4 AAC ES Compliance Checking
- Customizable scripting supports the broadest range of ratified and evolving World-Wide DTV standards

**For further details visit:**
**www.tektronix.com/mts400**

[*1] Some timing related measurements are not possible with VBR streams



# MTS400P Portable MPEG Analyzer

The MTS400P is targeted at field based engineers as a cost-effective analyzer for installing, commissioning and maintaining MPEG video networks, particularly those carrying IPTV and IP video based services.

**Applications**

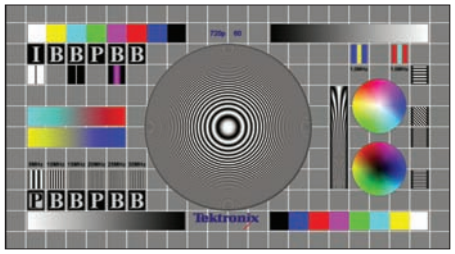
- Analysis of transport streams to confirm correct system operation and isolate faults during installation and commissioning
- Integrated cross layer fault analysis and logging for network fault diagnosis reduces time to insight when troubleshooting and removes the need for additional IP specific diagnostic equipment
- Tests contribution feeds or encoder outputs, multiplexer inputs/outputs, head-end modulators, and IP encapsulators
- Tests PCR insertion, recovery, and regeneration equipment

**Features and Benefits**

- An integrated display eliminates the cost and inconvenience of additional computer display equipment
- Provides the flexibility of 10, 100, 1000 Base-T and optical IP interfaces, plus traditional ASI, SMPTE310M and LVDS interfaces, for engineers requiring multiple physical interface connectivity. This provides a one box solution, thereby reducing capital expenditure
- Provides a seamlessly integrated view of network and MPEG information that allows an engineer to rapidly identify the root cause of underlying service problems, thereby reducing engineering operational expenditure
- The unique CaptureVu debug feature helps even non-MPEG experts to quickly diagnose complex problems, therefore saving time and associated costs
- The offline TS analysis tool option allows diagnosis of common QoS problems, such as signaling errors during a Service Information version change, that are not possible in real-time. A faster diagnosis will help to reduce subscription refunds and ultimately customer churn

  Flexibility of all the MTS430 software tools plus the Player as individual options

**For further details visit:**
**www.tektronix.com/mts400p**




# Tclips

Tclips is a range of MPEG-2 Transport Streams designed to test receivers across a broad range of video and audio formats.

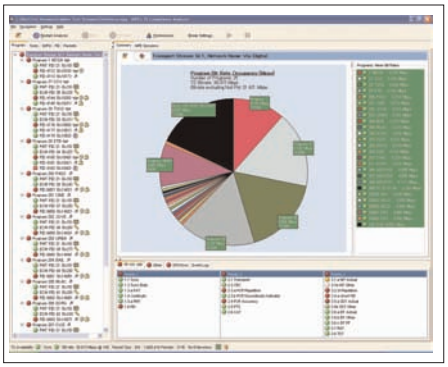
### Applications

- Development and verification of receivers such as Set Top Boxes, Integrated Digital TVs (iDTV), and Personal Computers
- Use with the Multiplexer to produce a library of regression test streams

### Features and Benefits

- Broad range of MPEG-2 transport streams designed to test receivers across a broad range of video and audio formats
- Contains compliant service information (SI) conforming to the MPEG, DVB, and ATSC standards
- Standard and high-definition video encoded with both MPEG-2 and H.264/AVC
- Broad range of video resolutions, aspect ratios, frame rates, profile and levels, and bit rates
- Test patterns for verifying luminance and chrominance amplitudes, chrominance phase, and frequency response
- MPEG-1 and AC-3 encoded audio content using stereo and 5.1 channels

**For further details visit:**
**www.tektronix.com/tclips**



# MTS4SA PC based MPEG Analysis

The MTS4SA can be purchased as a bundle or as individual software tools to run on stand alone PCs running Microsoft Windows. This provides a flexible and cost-effective way to purchase only those tools required for the job. These tools operate on file-based streams. A real-time version of the Transport Stream analyzer (TSCA) is also available for analyzing streams received through the PC's Ethernet (IP) interface.

### Applications

#### Equipment Manufacturers - Research & Development

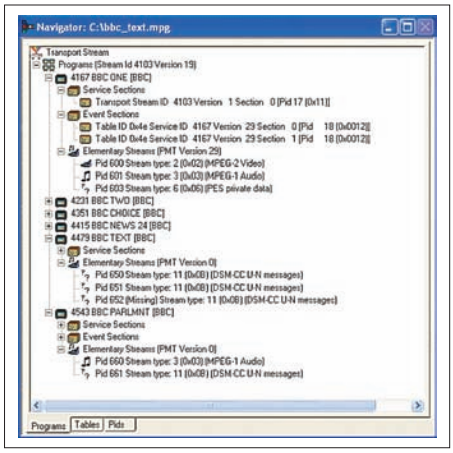
- Multiplexer/Re-Multiplexer allows test stream creation and modification for transmissions not yet on-air. Create custom streams for Set Top Box and Multiplexer testing offline.
- In-depth analysis of selected elements of transport streams to confirm functionality and compliance to standards
- Set Top Box buffer testing and verification
- Codec design and optimization

#### Broadcasters and Network Operators

- Encoder and other equipment fault diagnosis and evaluation
- Analysis of transport streams to confirm correct system operation and isolate faults during installation and commissioning

### Summary of MTS4SA Options

**Transport Stream Compliance Analyzer (TSCA)**
The TSCA enables monitoring and interpretation of the contents of real-time or previously recorded or synthesized transport streams using the latest ATSC, DVB, ISDB-S, ISDB-T, ISDB-Tb and MPEG standards. The analyzer is optimized to quickly locate and identify problems within a transport stream with minimum intervention. The TSCR is a real-time version of the TSCA analyzer operating on Transport Streams received through the PC's Ethernet port. The real-time analysis also includes Cross Layer time-correlated IP and TS measurements, alarms and error logging together with stream recording.




**Multiplexer**
Use the Multiplexer/Re-multiplexer/De-multiplexer application to create and modify multi-program Transport Streams with custom SI/PSI/PSIP information for DVB, ATSC, ISDB, and MPEG compliant Transport Streams. Video and audio Elementary Streams may also be multiplexed into a Transport Stream.

**T-STD Buffer Analyzer**
Determines adherence to the buffer model used by the receiver which is signaled within the Elementary Stream itself. The T-STD method is based upon the DTS values within the PES header and can be used for any contained CODEC type. Additionally, certain video CODECs such as MPEG-2 and H.264/AVC may signal buffer parameters within the ES. The Buffer Analyzer verifies conformance of a stream to the T-STD model. (Refer to the MTS4EA for verification of the H.264/AVC HRD method).

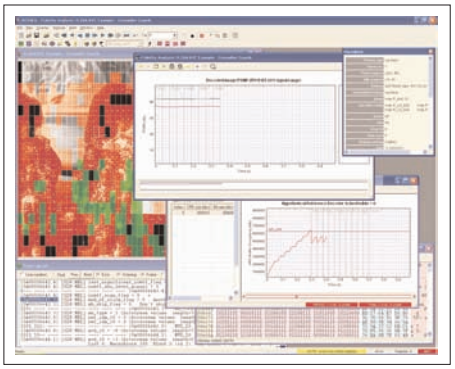
**Packetized Elementary Stream (PES) Analyzer**
The PES Analyzer analyzes the header associated with each PES packet, as it contains the decode and presentation timestamps (DTS and PTS) for the contained Elementary Stream. Additionally it can verify conformance of the PES header contents to the MPEG, DVB and ATSC standards.

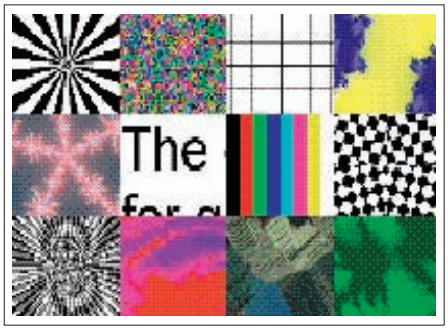
**MPEG-2 Elementary Stream (ES) Analyzer**
Analyzes and views the moving picture from within a PES stream and carry out a whole range of sophisticated tests on the lower layers of an elementary stream within a Transport Stream. In addition, it both analyses and displays a range of extended media formats, including ATSC Closed Captions, DVB Subtitles and Teletext associated with video Elementary Streams.

**Carousel Analyzer**
Analyses carousels compliant with MPEG-2 DSM-CC, DVB (including MHP), DTT (MHEG-5) or ARIB standards.

**Carousel Generator**
Creates object carousel contents within an output Transport Stream conforming to the MPEG-2, DVB, DTT (MHEG-5) or MHP standards.

**For further details visit:**
**www.tektronix.com/mts4sa**





# MTS4EA Next Generation Compressed Video Elementary Stream Analyzer

MTS4EA Elementary Stream Analyzer is a powerful PC-based software package for the deferred time analysis of encoded audio and video elementary streams. Supported video standards include H.264/AVC, VC-1, MPEG-2 , MPEG-4 part 2 and H.263. Supported audio standards include MPEG-2 audio, AAC and AC-3.

### Applications

**Equipment Manufacturers**

- Semiconductor device designers & manufacturers
- Video codec software and hardware developers
- STB, PVR, DVD consumer electronics developers for cable, satellite, terrestrial, and IP
- Video conferencing & communications equipment developers
- Mobile video infrastructure and handset developers

**Video Content Delivery**

- CODEC and equipment evaluation and comparison in cable, satellite, terrestrial, and Video over IP applications

### Features and Benefits

- Next Generation (VC-1, H.264/AVC, MPEG-4 & 3GPP) and Legacy (MPEG-2, H.261, H.263) CODEC support
- Frame-by-Frame and Block-by- Block analysis to allow easy CODEC comparison
- Easy-to-Interpret Detailed Graphical Displays (requires user installed Microsoft Excel)
- Comprehensive semantic trace file output to determine Block-by- Block encoder decision making
- Real-time and non real-time decoding and analysis of compressed video streams (dependent on PC performance)
- Elementary Stream Editing
- Extraction of Elementary Stream from Transport Stream
- The AV Delay Measurement Option can be used to analyze, measure and characterize the delay or lead between audio and video in the encoded stream and report it to the user graphically to an accuracy of 1 mS
- The Audio Analysis Option checks for compliance to the standards and quickly provides full analysis of all aspects of the performance of the compression used

### MTS4CC Compliance Checker

MTS4CC is a PC-based software package capable of displaying and analyzing encoded audio and video streams for the VC-1, H.264/AVC, MPEG-4, MPEG-2, and H.263 video compression standards. The MTS4CC is intended as a more cost-effective solution for those customers who do not require the advanced diagnostic capabilities of the MTS4EA ES Analyzer.

**For further details visit:**
**www.tektronix.com/mts4ea**

# Vclips™

Vclips™ are a diverse set of short video clips designed to test video encoders and decoders to the limits of their abilities. The Encoder series of video clips is a set of uncompressed YUV clips that comprises many different video elements, designed to “stress” an encoder in many ways. The Decoder series of video clips is compressed to different video standards and tests video decoders not only to the limits of the video standard concerned, but also in their response to errors in encoded bit streams. Whether developing video compression or testing the performance of different codecs, using Vclips can save many man-weeks of time otherwise spent generating sequences.

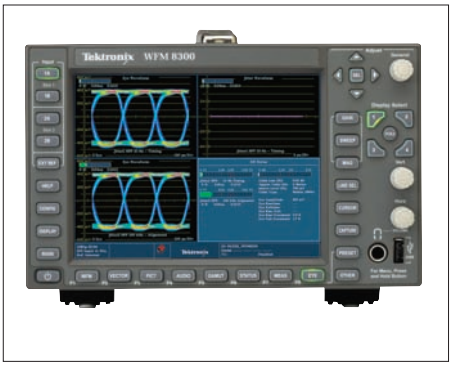
### Applications

- Developing Video Compression Equipment
- Testing the Performance of Different Codecs

### Features and Benefits

- Video Sizes: Test with Many Different Video Sizes; Sub-QCIF, QCIF, CIF, D1, HD (720p and 1080i)
- Difficult Subjects: Test with Fine Detail, Night Time, Areas of High Contrast, Sharp Borders, Uniform
- Areas, Bright and Dull Colors
- Visual Objects: People, Buildings, Vehicles, Trees, Landscapes, Clouds, Water and Synthetic Objects
- Movement: Fast, Slow, Uniform, Random, Multiple Moving Objects. Also Pan, Zoom and Rotate
- “Test Card” Sequences: Precisely Defined Motion, Bright Colors, Dull Colors, Lines, Patterns and Grids. Also for Strobing and White Noise.

**For further details visit:**
**www.tektronix.com/vclips**




# WFM8200 / WFM8300 Advanced Multi-standard, Multi-format Waveform Monitors

Ideal for multi-format environments, the WFM8200 and WFM8300 advanced waveform monitors provide flexible options and field-installable upgrade kits to monitor diverse video types including 3 Gb/s SDI, Dual Link, HD/SD SDI, and Composite Analog Video. Both WFM8200 and WFM8300 come standard with SMPTE 372M compliant monitoring, SMPTE 352M automatic format detection, and selectable display of Alpha Channel as well as 2K Dual Link monitoring with XYZ Color Space.

These instruments allow for monitoring of Link A, Link B, or the combined Dual Link input with a comprehensive set of displays and status reporting tools. The Tektronix-patented Timing Display (measures timing between Link A and Link B of the Dual Link signal) proves invaluable to maintaining correct timing between the two links.

### Applications

- Combine with the TG700 3G module for 3G Physical Layer measurements
- Monitoring and compliance checking in video distribution and broadcasting
- Quality control in the video production and post-production
- Equipment qualification and troubleshooting in the installation and maintenance of video facilities and systems

### WFM8300

The measurement and monitoring capabilities of the WFM8300 provide precision capabilities such as Physical Layer Measurements, Digital Data Analysis (including ANC Data Inspector), A/V Delay Measurement, and in-depth Simultaneous Input Monitoring which makes Tektronix the brand of choice for applications that require deep signal and content analysis with unquestionable accuracy.

The WFM8300 features the complete range of options of the product family and comes standard with HD/SD-SDI and Dual Link video formats support. It provides high-performance monitoring and measurement for applications for a wide range of formats from Composite Analog to SD-SDI, HD-SDI, Dual Link video formats, and 3Gb/s SDI video signals. The WFM8300 offers support for a variety of audio formats for analog, digital AES/EBU, digital embedded, Dolby Digital, and Dolby E.

### Features and Benefits

- Video Monitoring Standards and Formats
  - 3Gb/s SDI (Level A and Level B) – Option 3G
  - High Definition SDI – Standard
  - Standard Definition SDI – Standard
  - Dual Link (4:2:2, 4:4:4, alpha channel, 10 bit, 12 bit) – Standard
  - Composite Analog Video – Option CPS
- Color Gamut Monitoring
  - Arrowhead Display – Standard
  - Diamond and Split Diamond Displays – Standard
  - Spearhead Display – Option PROD
  - Luma Qualified Vector (LQV™) – Option PROD
- Audio Monitoring Standards and Formats
  - Analog, Digital AES/EBU, Digital Embedded – Option AD
  - Analog & Digital plus Dolby Digital and Dolby E – Option DDE
- Measurement and Analysis
  - Eye Pattern & Jitter Waveform Measurements Option PHY
  - Color Bar & Pathological Signal Generation – Option PHY
  - Digital Data Analysis – Standard
  - ANC Data Inspector – Standard
  - Simultaneous Input Monitoring – Standard
  - Audio / Video Delay Measurement – Standard

### WFM8200

The WFM8200 provides an ideal solution for advanced monitoring of Analog, Digital, High Frame-rate Digital Video, and multiple Audio formats. This flexible solution comes standard with HD/SD-SDI and Dual Link video monitoring and can be equipped with options and upgrades to monitor 3Gb/s SDI and/or Composite Analog video. The WFM8200 is an intelligent choice that prepares you for format transitions and growing monitoring needs. Available audio options include support for analog, digital AES/EBU, digital embedded, Dolby Digital, and Dolby E formats.

### Features and Benefits

- Video Monitoring Standards and Formats
  - 3Gb/s SDI (Level A and Level B) – Option 3G
  - High Definition SDI – Standard
  - Standard Definition SDI – Standard
  - Dual Link (4:2:2, 4:4:4, alpha channel, 10 bit, 12 bit) – Standard
  - Composite Analog Video – Option CPS
- Color Gamut Monitoring
  - Arrowhead Display – Standard
  - Diamond and Split Diamond Displays – Standard
  - Spearhead Display – Option PROD
  - Luma Qualified Vector (LQV™) – Option PROD
- Audio Monitoring Standards and Formats
  - Analog, Digital AES/EBU, Digital Embedded – Option AD
  - Analog & Digital plus Dolby Digital and Dolby E – Option DDE
- Measurement and Analysis
  - Eye Pattern Display & Jitter Readouts – Option EYE

Both WFM8300 and WFM8200 support flexible combinations of options and field upgrades, providing an excellent solution for multi-format environments while protecting your investment.

**For further details visit:**
**www.tektronix.com/wfm8000**

# WFM6000 / WFM7000 Series Multi-standard, Multi-format Waveform Monitors

The WFM6120, WFM7020 and WFM7120 help video content producers verify content quality and make precision content adjustments. In video delivery systems, they help operations staff verify content quality and system reliability, and help engineering staff qualify, install, and maintain video systems. Design and manufacturing engineers developing new video equipment use these products for design troubleshooting, functional verification, and manufacturing test.

This series of waveform monitors boosts your productivity, allowing you to accurately monitor and analyze content at a glance with Tektronix See and Solve™ displays, powerful error reporting and the most advanced timing and alignment jitter measurements. Unique capabilities such as support for 3 Gb/s, Dual Link, Simultaneous Input monitoring and Audio-Video Delay measurements help you solve challenging problems faster and efficiently.

**Applications**

- Monitoring and Compliance Checking in Video Distribution and Broadcasting
- Quality Control in Video Production and Post-production
- Equipment Qualification and Troubleshooting in the Installation and Maintenance of Video Facilities and Systems
- Combine with the TG700 for A/V Delay measurements

**Features and Benefits**

- ANC Data Inspector (DAT Option) simplifies ANC Data Monitoring
- Settable Dolby Guard Band Limits
- Active Format Description (AFD), Video Index and Wide Screen Signaling (WSS) decoding
- Black Picture and Frozen Frame Detection for monitoring signal path continuity
- Selectable Time Code- for ANC VITC or LTC; selectable VITC selectable line number
- Simultaneous A/B Input Support Extends Monitoring Functions (SIM Option)
- Full Dual Link Support for High-End Production, Post Production and Manufacturing Applications (DL Option)
- Numerical and Graphical Display of A/V Delay (AVD Option)
- 3G single link SDI interface (3G Option)
- 3G single link jitter measurements (JIT Option)
- FlexVu™ XGA Display Increases Productivity with the Ability to Create Hundreds of Custom Multiple-view Displays Tailored to Specific Work Practices
- CaptureVu™ Video Frame Capture Improves Efficiency in Troubleshooting and Equipment Setup (WFM6120 & WFM7120)
- Exclusive Tektronix Gamut Displays Help Ensure Compliant Content
- Tektronix's Patented Timing Display Simplifies Plant Timing
- The Patented Tektronix Lightning Display is Ideal for Maintaining Correct Inter-channel Timing
- Extensive Fault Monitoring, Status Reporting, and Error Logging Simplify Content Quality Control
- Available High-Performance SDI Physical Layer Measurements (PHY Option) is Available for Eye and Jitter Displays
- In-Depth Digital Data Analysis Helps Quickly Resolve Difficult Quality and Reliability Issues. (DAT Option)
- Exceptional Audio Monitoring Available, (Option AD) including support for Dolby® Audio Formats (Option DDE) and a Front-panel Headphone Connector, Reduces Time and Effort in Verifying Multi-channel Audio Content
- Standard and User-definable Safe Area Graticules Help Avoid Errors and Rework in Editing and Format Conversion
- Front-panel USB Port For Easy Storage and Transfer of Instrument Settings and Video Data
- Audio Control Packet provides a decoded display of the embedded audio information
- Dolby E Audio/Video Timing and Synchronization measurement
- VANC Dolby Metadata Display
- Audio Loudness Monitoring according to the ITU BS.1770 standard
- CEA708 Closed Caption decoding
- Teletext Subtitle decoding
- Infinite Persistance Mode for trace displays

**For further details visit:**
**www.tektronix.com/wfm7000**

# WFM4000 / WFM5000 Series Multi-standard, Multi-format, Portable Waveform Monitors

The WFM5000 is a portable Waveform Monitor for HD and SD Serial Digital Video Monitoring and HD/SD format auto-detection. The WFM4000 is a portable Waveform Monitor for SD Serial Digital Video Monitoring. Both units provide Digital audio monitoring for 16 embedded channels and 2 AES/EBU channels.

**Applications**

- Camera level setup including camera shading
- Quality control and fault detection of outgoing video and audio content (control rooms and mobile trucks)
- Basic content verification during field production
- Content processing (including content edit, color adjustment, format conversion, and addition of promos and /or station IDs)
- Quality control and fault detection of incoming or outgoing video and audio content
- Tape or File QC

**Features and Benefits**

- TandemVu™ enables Wavform/Vector (or Waveform Lightning) Display with Picture Thumbnail in a full-size single tile display
- Tektronix patented Timing Display simplifies facilities timing
- Short-depth integrated waveform monitor (WFM5000 / WFM4000) form factor for space-critical environments
- High-resolution, LED backlit display provides bright, readable instrument display - even under sunlight
- Easy to learn with intuitive user interface and online help
- Exclusive Tektronix Gamut displays (Diamond, Split Diamond, and Arrowhead) ensure compliant content
- Captured screen display downloadable to USB storage device in bitmap file format for easy documentation
- Picture Thumbnail in all modes for quick identification of source content
- Audio Bars and Lissajous displays let Audio Editors and Operators verify compliance of digital audio signals, without the need for an additional piece of equipment
- Front panel headphone port for easy identification and monitoring of audio channels
- Passive loop-throughs for HD-SDI (WFM5000 and WVR5000 only) and SD-SDI inputs allow for monitoring the true signal in the path and ensuring signal integrity, even if instrument power is off
- 32 instrument Presets for quick recall of commonly used configurations
- Front panel USB device for easy transfer of instrument Presets
- Tektronix patented Timing Display
- SNMP Support

**For further details visit:**
**www.tektronix.com/compactwfmwvr**


# AMM768 Audio Monitor

AMM768 is a multi-channel audio monitor that supports, in one scalable platform, options to monitor Analog, Digital and Dolby audio, it also provides SDI de-embedding option with picture display to facilitate video and audio coordination.

**Applications**

- Audio Monitoring in Broadcast and Post Production Facilities
- Creative Adjustments in Audio Production
- Quality assurance in environments with multiple audio formats
- Verification of audio and video coordination in SDI video signals
- Real-time monitoring of material on air

**Features and Benefits**

- Modular configurations to support in one platform the monitoring of analog and digital signals (embedded or de-embedded) including AES/EBU, Dolby Digital and Dolby-E
- FlexVu 4-tile XGA display for easy operation
- Audio monitoring displays include Audio bars, with user-selectable scales, Lissajous and Multi-channel Surround Sound
- Multi-axis display of surround-sound audio showing loudness weighted audio levels, total sound volume phantom sound sources, and the dominant sound source to efficiently adjust surround-sound audio content
- Comprehensive status and session screens and alarm reports with storage capacity for up to 10,000 log events
- SDI Picture display option allows operators to verify correct association of audio to video content
- Front panel headphone port for quick verification of audio
- USB port for easy download and upload of customized instrument presets

**For further details visit:**
**www.tek.com/amm768**

# WVR6000 / WVR7000 Series Waveform Rasterizers

The WVR6020 / WVR7020 / WVR7120 help video content producers verify content quality and make precision content adjustments. In video delivery systems, they help operations staff verify content quality and system reliability, and help engineering staffs qualify, install, and maintain video systems. Ideal for multi-format environments, these Rasterizers offer performance and flexibility needed for demanding video applications. These instruments offer options to monitor SDI and Analog Composite Video, as well as Audio Signals, all from a single, convenient 1 RU instrument.

The WVR7120 and WVR7020 feature the most powerful Dual-Link monitoring capability compliant with SMPTE 372M. These instruments provide selectable display of Alpha Channel and automatic format detection on signals with 352M Video Payload Identifier (VPID). The WVR7120 features advanced monitoring and measurement tools such as CaptureVu™ and provides options for A/V delay measurement and simultaneous input monitoring.

**Applications**

- Monitoring and compliance checking in video distribution and broadcasting
- Quality control in the video production and post-production
- Equipment qualification and troubleshooting in the installation and maintenance of video facilities and systems
- Combine with the TG700 for A/V Delay measurements

**Features and Benefits**

- Active Format Description (AFD), Video Index and Wide Screen Signaling (WSS) decoding
- Black Picture and Frozen Frame Detection for monitoring signal path continuity
- Selectable Time Code- for ANC VITC or LTC; selectable VITC selectable line number
- Infinite Persistance Mode for trace displays
- Numerical and Graphical Display of A/V Delay
- Simultaneous A/B Input Support extends monitoring functions
- CaptureVu™, allows you to store and compare diverse views of the reconstituted signal (standard in WVR7120)
- High-performance Eye, Jitter and Physical Layer Measurements help quickly resolve difficult quality and reliability problems
- Passive loop-through inputs allow for transparent monitoring at any point of the signal path
- Exceptional Audio Monitoring, with options for Analog, Digital and Dolby audio formats reduce time and effort in verifying multi-channel audio content
- Instrument Presets for Quick Recall of Commonly Used Configurations
- Digital Cursors for Precise Time, and Amplitude monitoring
- Closed Caption (CC) decode and display capability helps operators quickly verify and correct CC errors
- Standard and User-definable Safe Area Graticules Facilitate Editing tasks and reduce the need for format conversions
- VANC Dolby Metadata Display
- Audio Loudness Monitoring according to the ITU BS.1770 standard
- CEA708 Closed Caption decoding
- Teletext Subtitle decoding

**For further details visit:**
**www.tektronix.com/wvr7100**


# WVR4000 / WVR5000 Series Waveform Rasterizers

The WVR5000 is a compact Waveform Rasterizer for HD and SD Serial Digital Video Monitoring with HD/SD format auto-detection. The WVR4000 is a compact Waveform Rasterizer for SD Serial Digital Video Monitoring. Both units provide Digital audio monitoring for 16 embedded channels and 2 AES/EBU channels.

**Applications**

- Camera level setup including camera shading
- Quality control and fault detection of outgoing video and audio content (control rooms and mobile trucks)
- Basic content verification during field production
- Content processing (including content edit, color adjustment, format conversion, and addition of promos and /or station IDs)
- Quality control and fault detection of incoming or outgoing video and audio content
- Tape or File QC

**Features and Benefits**

- Half-rack rasterizer (WVR5000/WVR4000) form factor for space-critical environments
- Easy to learn with intuitive user interface and online help
- TandemVu enables Waveform/Vector (or Waveform Lightning) Display with Picture
- Patented Tektronix Timing Displays simplies facilities timing
- Exclusive Tektronix Gamut displays (Diamond, Split Diamond, and Arrowhead) ensure compliant content
- Picture Thumbnail in all modes for quick identification of source content
- Audio Bars and Lissajous displays let Audio Editors and Operators verify compliance of digital audio signals, without the need for an additional piece of equipment
- Front panel headphone port for easy identification and monitoring of audio channels
- Passive loop-throughs for HD-SDI (WFM5000 and WVR5000 only) and SD-SDI inputs allow for monitoring the true signal in the path and ensuring signal integrity, even if instrument power is off
- 32 instrument Presets for quick recall of commonly used configurations
- Front panel USB device for easy transfer of instrument Presets
- Tektronix patented Timing Display
- SNMP Support

**For further details visit:**
**www.tektronix.com/compactwfmwvr**

# TG700 Multi-format Sync & Signal Generator

Designed with the changing needs of the video industry in mind, the TG700 offers sync pulse generation and test signal generation for a wide array of analog, serial digital, and digital high definition formats. The new GPS7 GPS Synchronization and Timecode module can help you to:

- Use GPS-based timing to provide a master house reference with long-term clock stability
- Distribute multiple independent timecode signals simultaneously

### Applications

- Master reference for broadcast, production, and post-production facilities
- Test signals for SD/HD post and production facilities
- Equipment verification for manufacturers and evaluation labs
- Calibration and maintenance
- Combine with the WFM7120 or WVR7120 for Lip synch and A/V delay measurements

### Features and Benefits

- Modular platform which holds up to 4 modules – choose specific configurations from 11 available modules
- The TG700 has a unique genlock architecture, "Stay GenLock™", that provides high stability with the AGL7 module. The AGL7 module adds the capacity to lock to a variety of signals which makes the TG700 an ideal solution as the master house and slave reference for broadcast, production and post-production applications
- The TG700 can lock to GPS-based timing with the GPS7 module. The integrated GPS receiver uses an external off-the-shelf antenna to provide a stable, accurate system clock and a real-time source for LTC and VITC timecode outputs
- Support for SDI digital video formats from SD to HD and beyond. The new HD3G7 3Gb/s SDI Generator module supports every 1080p test signal generation, and can up-convert any 1080-line format in the SMPTE 425 standard, for both level A and level B mapping structures. The HDLG7 Dual Link Video Generator supports all dual link formats, including Digital Cinema 2K and XYZ formats
- An Ethernet interface allows you to download test signals, frame pictures, logos and new firmware as well as backup, restore and duplicate settings of the TG700

**For further details visit:**
**www.tektronix.com/tg700**

# SPG300/600 Standard Definition Sync & Signal Generators

Cost effective Sync Pulse Generators for analog, digital and analog digital mixed facilities with "Stay GenLock™, a unique, robust genlock architecture that provides stable synchronization signals for digital and traditional broadcast facilities.

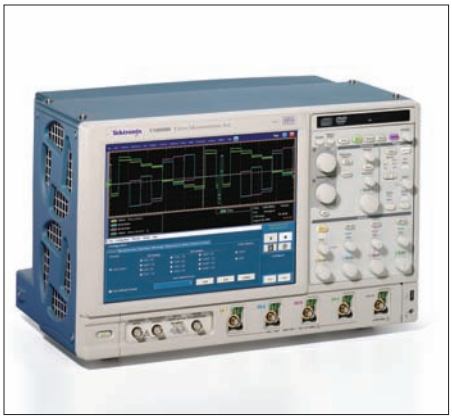
### Applications

- Master sync/signal generators for standard definition post production and broadcast facilities

### Features and Benefits

- Choice of form factors; full rack width - SPG600, or half rack width - SPG300
- Stay GenLock™ – Unique, robust Genlock mode for analog or digital production facilities
- All signal output channels are configurable with black burst or test signal outputs
- SNMP and Web-based remote control for easy integration into any operational environment
- ECO422D Automatic Changeover unit for fully redundant sync system design

**For further details visit:**
**www.tektronix.com/spg300**



## VM600 Integrated Signal Analyzer

The VM6000 integrates acquisition hardware, optimized video measurement algorithms, test signal files, and accessories into a cohesive test system solution. Product verification activities that previously took hours or days to complete can now be completed in seconds or minutes. Offering near plug-and-play video measurement capability, even unskilled operators can reliably assess video output signal quality. The conformance of signals to specifications is reported with obvious pass or fail results, with signal distortions clearly identified for further analysis. The VM6000 is the only automatic video analyzer capable of supporting SD, HDTV and PC graphics signal formats, and is well suited to the demands of measuring high resolution HDTV and high frequency PC graphics video signals.

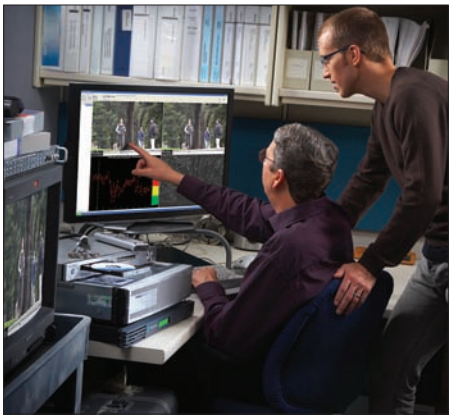
**Applications**

- Design validation & optimization
- Standards compliance testing (VESA, EIA, SMPTE)
- Quality control & functional test
- Automated Manufacturing test
- ISO calibration testing

**Features and Benefits**

- Automates test of consumer HDTV video devices
- Automates VESA compliance test for PC graphics devices
- Fast, accurate, and reliable video measurements
- Comprehensive component analog video signal analysis
- SD, HDTV, and RGBHV component analog format support
- Picture, vector, and waveform displays
- Pass-fail limit testing
- Automatic report generator
- Complete DPO functionality
- LAN connectivity
- CD-RW drive
- Signal sources for testing DVD and Blu-ray players

**For further details visit:**
**www.tektronix.com/vm6000**



## PQA500 Picture Quality Analyzer

Based on the concepts of the human vision system, the PQA500 provides a suite of repeatable, objective quality measurements that closely correspond with subjective human visual assessment. These measurements provide valuable information to engineers working to optimize video compression and recovery, and maintaining a level of common carrier and distribution transmission service to clients and viewers.

**Applications**

- CODEC Design, Optimization and Verification
- Conformance Testing, Transmission Equipment and System Evaluation
- Digital Video Mastering
- Video Compression Services
- Digital Consumer Product Development and Manufacturing

**Features and Benefits**

- Fast, Accurate, Repeatable, and Objective Picture Quality Measurement
- Predicts DMOS (Differential Mean Opinion Score) Measurement Based on Human Vision System Model
- Picture Quality Measurements Can be Made on a Variety of HD Video Formats (1080i, 720p) and SD Video Formats (525 or 625 )
- Makes Picture Quality Comparison across Different Resolutions from HD to SD, or HD/SD to CIF
- User-Configurable Viewing Condition and Display Models for Reference and Comparison
- Attention/Artifact Weighted Measurement
- Automatic Temporal and Spatial Alignment
- Optional SD/HD SDI Interface for Generating and Capturing Video Sequences, including Simultaneous Video Generation and Capture of up to 2 SDI Signals
- SD/HD SDI Interface Includes Instant Output Channel Swapping for Easier Subjective Evaluation
- Easy Regression Testing and Automation with XML Scripting
- Multiple Results View Options
- Pre-Installed Sample Reference and Test Sequences
- Optional SD/HD SDI Interface for Generating and Capturing Video Sequences, including Simultaneous Video Generation and Capture of up to 2 SDI Signals

**For further details visit:**
**www.tektronix.com/pqa500**

# Cerify® / Cerify SW

Cerify is the world's first fully-automated solution for automatically verifying Content Interchange – the quality of file-based, compressed digital video and audio content. Cerify can help you deal with your content explosion by checking content at the input of your workflow, and ensure quality levels before transmission. Cerify fully tests all aspects of the video and audio elements to make certain it meets quality and compliance for video and audio standards, and can automatically verify and validate the file content is ready and adheres to user-defined format templates. Backed by the Cerify Developer Community (CDC), Cerify supports the widest range of Video Server and Broadcast Management System vendors, reducing your system integration complexity. Solutions range from windows-based PC standalone workstations to enterprise-wide solutions that interface to 3rd party automation or asset management systems.

### Applications

- Checking that post production content has been correctly encoded and is compliant with the broadcaster's content quality agreement
- Checking audio and video after encoding, at ingest, after editing, and before playout for terrestrial, satellite, cable, internet/Content-on-Demand and VoD
- Checking integrity before and after archiving

### Features and Benefits

- Runs automatically 24/7 to perform consistent and thorough checks of incoming video files against user defined content templates
- All aspects are checked, including encoding, compliance/correctness to video and audio standards, video formats, resolutions, bitrates, adherence to transmission system limits, and also video and audio quality (including the presence of faults such as black frames, blockiness, audio silence/incorrect levels)
- Simultaneous testing of multiple files
- Logs errors, informs automation systems, plus programmable actions such as email user alert, and file quarantine
- Web-browser user interface and control
- CeriTalk API for integration with broadcast management systems

**Video Formats:**
All frame format sizes, bit rates and resolutions for SD/HD and mixed workflows (including QCIF, CIF, D1, 720p, 1080i, 1080p)

**Resolutions:**
QCIF, CIF, SD, D1, 720p, 1080i/50, 1080i/60, 1080p (and non-standard sizes from 16X16 to HD+)

**Wrappers:**
MPEG-2 Transport Stream, MPEG-2 Program Stream, MPEG-4 Parts 1, 14 & 15, 3GPP, MOV, ASF, GXF, MXF

**Video:**
MPEG-2, IMX 30/50, D10, XDCAM, MPEG-4 AVC (H.264), VC-1/WMV9, MPEG-4 Part 2, H.263, DV/DVCPro25, DV/DVCPro50, DVCPro100/HD

**Audio:**
MPEG–1, MPEG–2, MPEG–2 AAC, AAC-Plus (MPEG-4 AAC) , HE–AAC, PCM, WMA, Dolby E, AC3

With Tektronix' Cerify, you can be assured that your content conforms to your standards for quality, and know that your content is correct before it is played to air.

**For further details visit:**
**www.tektronix.com/cerify**

# Cerify Services: Assurance of Quality Output

**Installation & System Support**

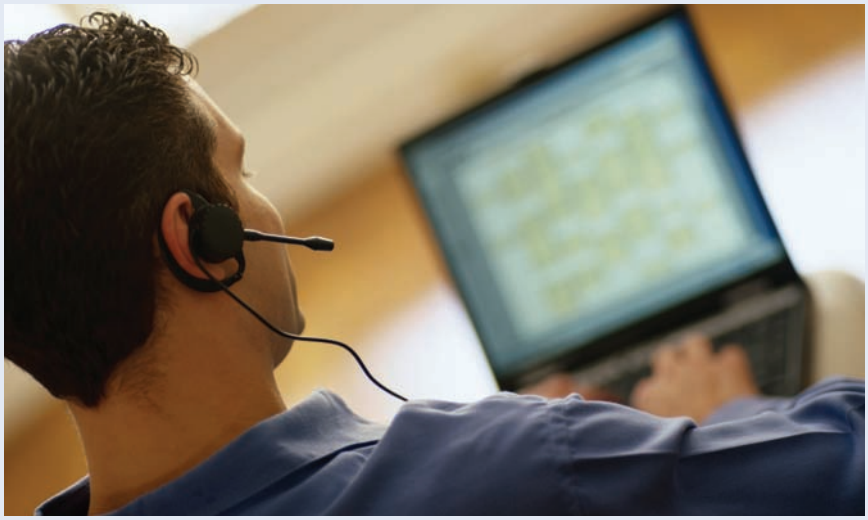
Installation services are included with all Cerify 200 Series products. Installation services are defined in a Statement of Work and include system design, configuration, implementation, test and trouble shooting, and documentation. The installation service deliverables are:

- Service Initiation
- System Design
- Design Implementation
- System Test
- Documentation
- Acceptance and Sign-off

**Cerify System Support**

1, 3 and 5 year maintenance agreement options are available for your Cerify 200 Series products (MN1, MN3, MN5). A system support maintenance agreement includes:

- Software maintenance that includes all firmware and software updates
- Telephone technical support during regular business hours
- On site repair services performed at your facility
- Advanced parts exchange with next day delivery



# Your Tektronix Service Advantage

**You can trust Tektronix to offer unequalled engineering expertise and a customer-centric approach to ensure the optimal performance of your Tektronix products and maximize the lifetime value of your Tektronix investment.**

Summary of Service Plans

| Repair Service Extended Coverage | Calibration Service Coverage | Multi-Vendor Calibration Services |
|---|---|---|
| ■ Save money with multi-year coverage<br>■ Priority service<br>■ Covers equipment, parts, labor and transportation<br>■ Applicable software, safety and reliability updates | ■ Accredited calibration<br>■ Traceable calibration<br>■ Functional verification<br>■ Applicable software, safety and reliability updates<br>■ Calibration records retention | ■ Single point of contact for all of your calibration needs<br>■ Simplify your operations and reduce administrative costs<br>■ On-site delivery for convenience and reduced downtime |

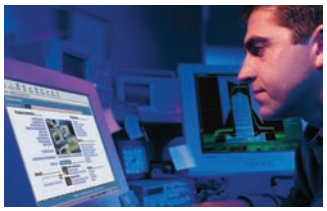
- **Tektronix Factory Experts**
  Access to the engineering expertise that designed and built your products to ensure they are in peak performance. Over 20 man years of training per support engineer.
- **Comprehensive and Thorough Treatment**
  Software updates, safety and reliability modifications, and cosmetic enhancements are included if applicable. Products are returned to you in a “like new” condition. Worldwide support is available through the Tektronix network.
- **Efficiency and Convenience**
  Team of professionals focused on getting your instruments back to you as soon as possible to keep your downtime to a minimum and your service management easy.
- **Flexible Repair and Calibration Service**
  Choice of cost effective, flexible options and service packages to meet your needs.

**For further details visit:**
**www.tektronix.com/service**

## Glossary of Terms

Download our free Glossary of Video Terms & Acronyms. This comprehensive reference book has been compiled from material gathered over time and from numerous sources.

**To download your free copy of this glossary, please visit: www.tek.com/video/glossary**



## Do More with MyTek

The MyTek resource Center enables you to work smarter by providing you with relevant, timely content. After a one-time signup, get access to the latest online tools to get more from your Tektronix equipment–such as manuals, software, online tutorials, pricing, en-newsletters, and much more.

**Become a member today at: www.tektronix.com/mytek**

## Find a Manual

Did you know that downloadable manuals for many products are available on our web site free of charge?

**Find them at: www.tektronix.com/site/mn/mnfinder_search**

## Ask the Experts

Our group of video experts has more than 140 combined years of experience in the industry. Send them your video questions and they will get back to you within one business day.

**You can find them on our web site at: www.tektronix.com/videoexperts**

## Contact Tektronix:


**ASEAN / Australasia** (65) 6356 3900
**Austria** +41 52 675 3777
**Balkans, Israel, South Africa and other ISE Countries** +41 52 675 3777
**Belgium** 07 81 60166
**Brazil** +55 (11) 3759-7627
**Canada** 1 (800) 661-5625
**Central East Europe, Ukraine and the Baltics** +41 52 675 3777
**Central Europe & Greece** +41 52 675 3777
**Denmark** +45 80 88 1401
**Finland** +41 52 675 3777
**France** +33 (0) 1 69 86 81 81
**Germany** +49 (221) 94 77 400
**Hong Kong** (852) 2585-6688
**India** (91) 80-42922600
**Italy** +39 (02) 25086 1
**Japan** 81 (3) 6714-3010
**Luxembourg** +44 (0) 1344 392400
**Mexico, Central/South America & Caribbean** 52 (55) 54247900
**Middle East, Asia and North Africa** +41 52 675 3777
**The Netherlands** 090 02 021797
**Norway** 800 16098
**People's Republic of China** 86 (10) 6235 1230
**Poland** +41 52 675 3777
**Portugal** 80 08 12370
**Republic of Korea** 82 (2) 6917-5000
**Russia & CIS** +7 (495) 7484900
**South Africa** +27 11 206 8360
**Spain** (+34) 901 988 054
**Sweden** 020 08 80371
**Switzerland** +41 52 675 3777
**Taiwan** 886 (2) 2722-9622
**United Kingdom & Ireland** +44 (0) 1344 392400
**USA** 1 (800) 426-2200
For other areas contact Tektronix, Inc. at: 1 (503) 627-7111
Contact information updated 4 August 2009


**For Further Information**

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**




8/09 EA/ 25W-19328-6


Tektronix®