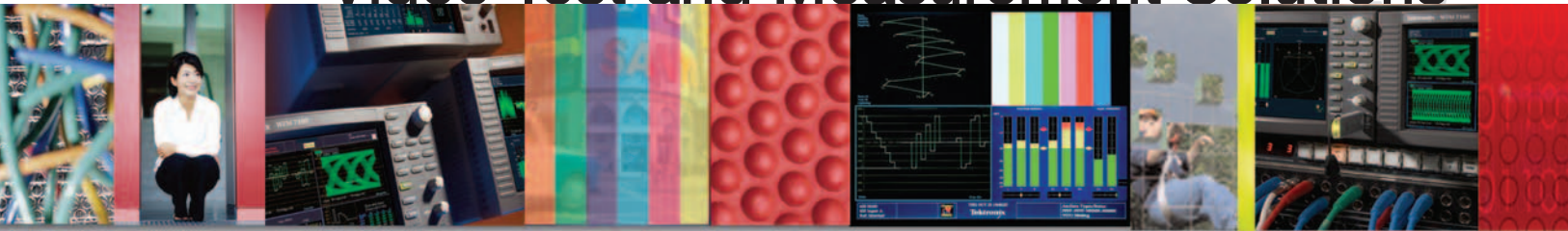


October 2006  
Product Catalog

Video Test and Measurement Solutions



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

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	✓	✓		
MPEG Monitors		✓	✓	✓
MPEG Generators		✓	✓	✓
MPEG Analyzers		✓	✓	✓
Protocol Analyzers		✓	✓	

Our customers are continually striving to improve business efficiency and competitive advantage. They require the ability to quickly embrace new technologies and positively

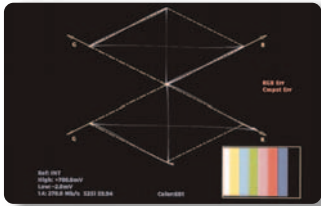
impact workflow efficiency. The ability to quickly deploy new services, maintain QoS and quickly isolate and correct errors are critical components of this model.

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.

## See and Solve™ - An Example of How We Can Help You

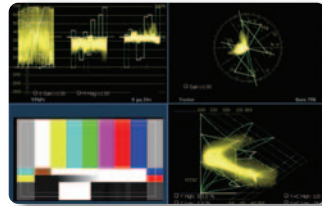
Information, not data - making your life clear, simple, and intuitive.  
Take the complication out of compliance.



### Diamond, Arrowhead, and Lighting Displays

#### Intuitive power to the people.

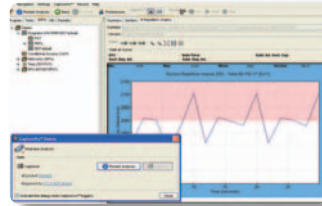
These easy-to-read displays dramatically simplify gamut compliance, giving everybody (even colorists, editors, and other non-technical user/operators) the ability to confirm signals are within color space at a single glance. This kind of visual "go/no go" indication is a must when working with today's computer-generated content.



### CaptureVu™

#### Much more than "freezing" a display.

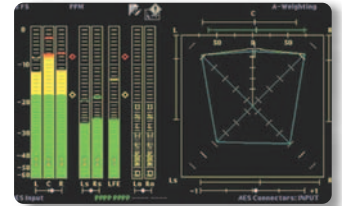
The captureVu capability on the WFM6100 and WFM7100 can capture and store the video data from an entire video frame and display this data on waveform, vector, gamut and picture displays unlike "freeze" captures. You can compare the live signal to capture data in one kind of display and then make the same live capture comparison in a different display.



### CaptureVu™

#### Shows what others miss.

Intermittent and complex problems have nowhere to hide. This triggering and stream capture technology is perfect for solving MPEG transport issues in real-time or off-line. And the slick, easy-to-understand interface makes for fast work.



### Surround Sound Display

#### See what you're hearing.

Check out this visual representation of volume - it lets you monitor even the most complex digital audio signals across today's multi-channel systems. You won't believe your eyes. Or ears.

## MPEG Monitors



### MTM400 Transport Stream Monitor

The MTM400 Transport Stream Monitor is a scalable solution that detects DTV system degradation, and enables operators to easily perform diagnostics and rapidly pinpoint problems, ensuring an error-free network and minimal downtime.

#### 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, 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



- ▶ Integrated IP metrics and comprehensive MPEG tests allow you to quickly relate the source of MPEG errors to the IP traffic
- ▶ Dual threshold alarms, and a time correlated IP and MPEG error log enable rapid fault resolution and provide pre-warning and trend analysis to indicate imminent MPEG TS failure.

By monitoring the quality of their 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 their customers.

#### Applications

- ▶ Terrestrial distribution
- ▶ Contribution and primary distribution
- ▶ Cable headend monitoring
- ▶ DTH or network operator satellite uplink monitoring
- ▶ Video over IP and IPTV

For further details visit:  
[www.tektronix.com/mtm400](http://www.tektronix.com/mtm400)

## MPEG Generators



### 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 and offline transport stream analysis brings the power of a lab evaluation to the field in a small, portable package.

#### Features and Benefits

- ▶ High capacity storage and high data rate recording and playout of MPEG transport streams let you build, maintain and use a large local library of test streams
- ▶ 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
- ▶ Color hierarchical display of transport stream components for quick and easy interpretation of complex structures
- ▶ Address a wide range of applications with ASI, SMPTE310M and Ethernet/IP interface options.
- ▶ IEEE1394b, USB2.0, and GbE interface download of Transport Streams for optimum flexibility in storing and managing Transport Stream Libraries
- ▶ Additional options provide offline multiplexing, PES and buffer analysis, elementary stream analysis, and data broadcast analysis and generation.

#### Applications IRD/STB design and manufacturing test

- ▶ Evaluation of professional MPEG equipment
- ▶ Performance verification of MPEG systems
- ▶ Portable, field analysis tool for system installation, commissioning and debug of MPEG transmission systems

For further details visit:  
[www.tektronix.com/mtx100b](http://www.tektronix.com/mtx100b)

## MPEG Generators



### RTX100B ISDB-T 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) standard for digital terrestrial TV systems. The RTX100A provides the capability to record and play out MPEG-2 transport streams, and modulate the up converted RF signal.

#### Features and Benefits

- ▶ Rapid setup using automatic detection of parameters from the broadcast stream, to modulate the RF output accordingly
- ▶ The RTX100A 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
- ▶ Integration with automated systems enabled by Ethernet remote control using SCPI (Standard Command for Programmable Instruments) command set
- ▶ Quick and Easy Interpretation of Complex Structures by utilizing a Color Hierarchical Display of Transport Stream Components

#### Applications

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

For further details visit:

[www.tektronix.com/rbx100b](http://www.tektronix.com/rbx100b)



▶ **New**

### RTX130B QAM and VSB MPEG RF Signal Generator

The RTX130B is a flexible, high-performance, easy-to-use and highly portable MPEG stream recorder and player with RF modulated output options. 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 a directly modulated RF input.

#### Features and Benefits

- ▶ The integrated MPEG Generator, Upconverter and RF modulator let you evaluate your product at both the IF and RF levels
- ▶ Buy the RF standard you want need now and upgrade later when your needs change.

- ▶ High capacity storage and high data-rate recording and playout of MPEG Transport Streams lets you build, maintain and use a large Local Library of Test Streams.
- ▶ Record the input MPEG stream, and use the Tektronix MTS4SA MPEG analysis software for in depth, off line analysis.
- ▶ Continuous, error free transport stream looping enables long duration play out, and PCR jitter insertion can help to stress product designs.
- ▶ Use the Tektronix MTS4SA MPEG analysis software (option MX) for multiplexed Transport Stream creation to generate known good test streams or streams with known repeatable errors for compliance and stress testing

#### Applications

- ▶ QAM and VSB Consumer Receiver Design and Manufacturing Test
- ▶ Evaluation of Professional QAM and VSB Equipment
- ▶ 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

For further details visit:

[www.tektronix.com/rbx130b](http://www.tektronix.com/rbx130b)

## MPEG Analyzers



### MTS400 SERIES MPEG Test System

The MTS400 Series MPEG Test System provides the unique CaptureVu™ ability to automatically monitor, analyze and debug live and deferred time video transport streams. The MTS400 Series also provides the highest performance analysis engine on the market, along with real-time Video over IP monitoring, analysis and recording support for broadband video and Video on Demand applications. The MTS400 provides fast time to problem resolution on video transport streams.

#### Features and Benefits

- ▶ CaptureVu™ technology captures and analyzes system events in real-time and deferred time to debug the intermittent and complex problems that traditional analyzers miss
- ▶ Real-Time Video over IP analysis and recording
- ▶ Analyzes stored transport streams at up to 400 Mbps to greatly reduce analysis time
- ▶ Innovative "program centric" user interface brings expert power to the novice user
- ▶ Broadest and deepest range of analysis of legacy and next generation compressed standards including MPEG-2, MPEG-4, H.264, VC-1, 3GPP & DVB-H
- ▶ Customizable scripting supports the broadest range of ratified and evolving World-Wide DTV standards (ATSC, DVB, and ISDB) and includes local language service information
- ▶ Quickly identify equipment performance problems by triggering on events based upon IP layer measurements (RTP metrics and Average Packet Inter Timing (PIT) Tests and alarms) - including CaptureVu debugging, triggered recording and alarms
- ▶ Correlate cross layer timing of the IP, Transport Stream and Program Elementary Stream layers with the integrated Average PIT, PCR and PTS timing displays.
- ▶ Identify the cause and effect of IP errors on the Transport Stream with the time correlated IP and Transport Stream error log.
- ▶ Test the correct operation of IPTV set top boxes and other IPTV equipment during development by multiplexing H.264/AVC compressed video into Transport Streams for transmission across IP.

### Applications MTS430 Solution for Equipment Manufacturers - Research & Development

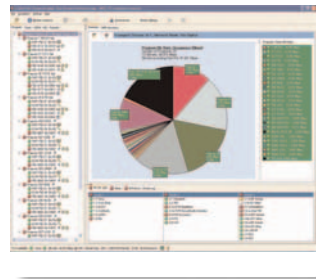
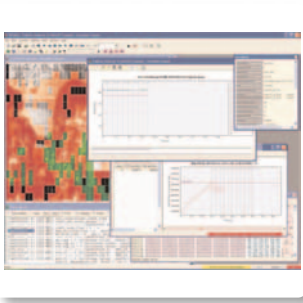
- ▶ Multiplexer/Re-Multiplexer allows test stream creation and modification
- ▶ Rapid and in depth analysis of selected elements of transport streams to confirm functionality and compliance to standards
- ▶ Set Top Box buffer testing and verification
- ▶ Codec design and optimization

### MTS400 Solution for Broadcasters and Network Operators

- ▶ Tests contribution feeds, multiplexer inputs, and outputs
- ▶ Tests PCR insertion, recovery, and re-generation equipment
- ▶ Encoder and other equipment fault diagnosis and evaluation
- ▶ Analysis of transport streams to confirm correct system operation and isolate faults during installation and commissioning

For further details visit:  
[www.tektronix.com/mts400](http://www.tektronix.com/mts400)

## MPEG Analyzers



### MTS4SA PC based MPEG Analysis

The MTS4SA Transport Stream Compliance Analyzer is a new class of analysis tool, the world's first Compressed Digital Video Debugger/Analyzer that introduces the CaptureVu™ technology, a new capability that captures and analyzes system events in real-time to debug the intermittent and complex problems that traditional analyzers miss.

#### Features and Benefits

- ▶ The MTS4SA software runs stand-alone on computers with Microsoft Windows NT 4.0, Windows 2000, or Windows XP operating systems
- ▶ Separate packages are available for Deferred Time Transport Stream Compliance Analysis, Real-time Video over IP Transport Stream Compliance Analysis, Transport Stream Multiplexing, Elementary Stream Analysis, PES and Buffer Analysis, Data Broadcast Carousel Analysis, and Data Broadcast Carousel Generation
- ▶ Both Transport Stream Compliance Analyzer packages offer PCR measurement and graphing capabilities
- ▶ Real-time Video over IP analysis and recording
- ▶ Analyzes stored transport streams at up to 400 Mbps to greatly reduce analysis time
- ▶ Innovative "program centric" user interface brings expert power to the novice user
- ▶ Broadest and deepest range of analysis of legacy and next generation compressed standards including MPEG-2, D10 (SMPTE 386M), MPEG-4, H.264, VC-1, 3GPP & DVB-H
- ▶ Customizable scripting supports the broadest range of ratified and evolving World-Wide DTV standards (ATSC, DVB, and ISDB) and includes local language service information
- ▶ Video thumbnail view provides you with a confidence check that the content within the stream is the right content
- ▶ Test the correct operation of IPTV set top boxes and other IPTV equipment during development by multiplexing H.264/AVC compressed video into Transport Streams for transmission across IP.

#### 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

For further details visit:

[www.tektronix.com/mts4sa](http://www.tektronix.com/mts4sa)

## MPEG Analyzers



### MTS4EA Next Generation Compressed Video Elementary Stream Analyzer

The MTS4EA Elementary Stream Analyzer offers the widest analysis breadth and depth and provides flexibility through plug-ins for different codec standards.

#### Features and Benefits

- ▶ Next Generation (VC-1, H.264/AVC, MPEG-4 & 3GPP) and Legacy (MPEG-2, H.261, H.263 & 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 (dependant 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

The 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 gives you just enough price/performance to perform compliance checking without the advanced diagnostic capabilities of the MTS4EA ES Analyzer.

#### Equipment Manufacturers

- ▶ Semiconductor device designers & manufacturer
- ▶ 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 Transmission & Distribution

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

For further details visit:

[www.tektronix.com/mts4ea](http://www.tektronix.com/mts4ea)



### SyncCert A/V Synchronization Measurement and Checking System

Do you have problems with A/V synchronization in your broadcast facility? SyncCert provides a set of test audio & video files in common formats, which can be input through the broadcast chain, then captured and automatically analyzed. These video streams are designed to be passed through the broadcast chain exactly the same as any other digital video stream. SyncCert automatically identifies the video frame number and audio frame number based upon embedded codes: these codes are then used to measure the audio/video sync and report this to the alert mechanism, alert log and in the various displays. SyncCert can analyze the test files which have been captured at various points in the broadcast chain, so that the broadcaster can identify which area is causing the loss of A/V sync.

With SyncCert, You Know If There Is An A/V Sync Problem Before It Becomes A Real Problem.

#### Features and Benefits

- ▶ SyncCert allows synchronization errors as small as 1 millisecond so that errors can be detected early and remedial action taken long before anything is noticeable on-screen.
- ▶ SyncCert Provides a Systematic, Reliable and Accurate Means of Detecting Audio/Video Sync Errors Well Before They are Severe Enough to be Visually Detectable Can be Set to Run in Batch Mode to do Repeated / Timed Checks
- ▶ Test Video is Provided In Various Common Formats Including Uncompressed, Compressed MPEG-2 and MPEG-4/AVC, Both at Standard Definition SD and High Definition HD (Both 720p and 1080i) and Also 4:2:2 and 4:4:4
- ▶ Logs Errors With Programmable Alarm Threshold
- ▶ Analysis Software Runs on Standard Windows™ PCs

#### Applications

- ▶ Broadcasters - For Checking Audio/Video Synchronization After Capture at any Point In the Broadcast Chain
- ▶ Content Providers - For Checking Production/Encoding Chain to Ensure That It is Not Introducing Audio/Video Sync Errors

For further details visit:

[www.tektronix.com/SyncCert](http://www.tektronix.com/SyncCert)





► **New**

## 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.

### 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

### Applications

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

For further details visit:  
[www.tektronix.com/vclips](http://www.tektronix.com/vclips)



## Spectra 2IVQM Protocol Analyzer with Video Quality Measurement

Industry-First Portable Diagnostics Package for IPTV, provides perfect diagnosis and analysis of Single Program Transport Stream (SPTS) video transmitted over Internet Protocol (IP). A monitoring solution that carriers and cable networks can use in the emerging video programming over IP opportunity.

### Features and Benefits

- Monitors video streams transported over RTP and MPEG2-TS (transport stream) protocols
- Supports measurement of standard-definition (SD) video streams as well as high-definition (HD) video streams

- Correlate between the Mean Opinion Score (MOS) and other factors including Packet Loss, Delay and Jitter along with MPEG2-TS priority statistics. Integrated reporting analysis tools provide interactive views of all Spectra2IVQM video metrics. Video data capture and decode also ease trouble-shooting activity
- Track metrics graphically in real-time
- Export statistics to a file or use the integrated online analysis tools to browse historical data
- Perform and analyze Forward Error Correction (FEC) algorithms
- Detect codec over-compression and incorrectly configured FEC for fine-tuning bandwidth versus quality
- Detect perceived video image quality in real time or historically for individual video streams

### Applications

- Real and deferred time diagnostic testings for IPTV networks
- Deployment trials, System installations and Network troubleshooting

For further details visit:  
[www.tektronix.com/spectra2](http://www.tektronix.com/spectra2)

## Signal Monitors



► **New**

### **WFM6100, WFM7000, WFM7100 Multi-standard, Multi-format Waveform Monitors**

The WFM6100, WFM7000, and WFM7100 Waveform Monitors offer industry-leading performance and flexibility that help you more effectively produce and deliver high quality video content and more efficiently manage your mixed format video production, distribution, and broadcast systems through the transition from analog to digital video technology.

The SD-capable WFM6100 Multi-format Waveform Monitor offers high performance monitoring and measurement capabilities for systems using composite analog video and SD digital video formats.

The HD-capable WFM7000 and WFM7100 Multi-format Waveform Monitors help you manage hybrid HD/SD/composite video systems.



The WFM7000 addresses basic monitoring needs, while the WFM7100 has additional capabilities for high-performance monitoring and measurement.

Available options include support for monitoring digital audio, both embedded and discrete AES/EBU inputs, and analog audio formats. The WFM6100 and WFM7100 also offer options for Dolby, audio monitoring, high-performance SDI signal measurement and in-depth digital data analysis. All units provide an integrated high-resolution XGA display. With innovative new features like MyMenu, CaptureVu, FlexVu, and USB presets, these new Waveform Monitors offer you the widest range of product configurations and upgrades, and industry-first capabilities that enable the seamless migration from composite video configurations to complete HD/SD/composite solutions.

#### **Features and Benefits**

- FlexVu™ XGA Display Increases your 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
- MyMenu User-defined Menu Saves Time by Placing Frequently Used Controls on a Single, Easily accessed Touch-screen Menu
- Exclusive Tektronix Gamut Displays Help Ensure Compliant Content
- Patented Tektronix Timing and Lightning Displays Help Rapidly and Accurately Adjusts Critical Plant Timing
- Extensive Fault Monitoring, Status Reporting and Error Logging Simplify Content Quality Control
- High-performance SDI Signal Measurement and In-depth Digital Data Analysis Help Quickly Resolve Difficult Quality and Reliability Problems

- Reduce Time and Effort in Verifying Multi-channel Audio Content Including Dolby Audio Formats and a Front-panel Headphone Connector
- Standard and User-definable Safe Area Graticules Help Avoid Errors and Rework in Editing and Format Conversion

#### **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

**For further details visit:**

[www.tektronix.com/wfm7000](http://www.tektronix.com/wfm7000)

## Signal Monitors



### WVR6100 and WVR7100 Waveform Rasterizers

The WVR7100 and WVR6100 provide multi-format environments (composite, SD, and HD video and/or analog, digital, Dolby Digital (AC-3) and Dolby E audio) with a cost effective and easy-to-use monitoring tool that enables them to ensure production and broadcast of quality content that adheres to various broadcast standards.

#### Features and Benefits

- ▶ FlexVu™ display – unique, flexible tiling for true “Four in One” capability
- ▶ Exclusive Tektronix gamut displays ensure compliant content

- ▶ Patented Tektronix timing display makes facility timing easy
- ▶ Presets for quick recall of commonly used configurations
- ▶ Digital cursors for precise timing and amplitude measurements
- ▶ Line select with field and picture bright-ups
- ▶ Range of remote control configurations for complete installation flexibility
- ▶ Extensive alarming and error logging screens
- ▶ Eye Pattern Display and Jitter Measurements indicate system degradations before they become quality problems, and improve efficiency in failure recovery

#### Applications

- ▶ Broadcast monitoring in standard definition (SD) and mixed SD/HD environments
- ▶ Content QA and compliance checking
- ▶ Camera shading
- ▶ Contribution validation

For further details visit:

[www.tektronix.com/wvr7100](http://www.tektronix.com/wvr7100)

## Signal Generators



### SPG300 and SPG600 Standard Definition sync and 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.

#### 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

#### Applications

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

For further details visit:

[www.tektronix.com/spg300](http://www.tektronix.com/spg300)

## Signal Generators



### TG2000 Multifomat Generator

Designed for the requirements of today and the future, the TG2000 is a modular and multifomat Signal Generation Platform that addresses the signal generation requirements of most application areas of the test and measurement segment of the television test signal generator market. The stress test capabilities for analog, SD-SDI and HD-SDI signals provide additional tests for video products and systems.

#### Features and Benefits

- ▶ Multifomat analog and digital test signal generation
- ▶ Reference generator performance level
- ▶ Conforms to analog and digital, video and audio industry standards
- ▶ Modular expandable platform
- ▶ Designed for the requirements of today and the future
- ▶ Fully supports VM700T video measurement routines
- ▶ RAM-based test signal generators with nonvolatile storage
- ▶ Test signal libraries for all formats
- ▶ Variable analog and digital video parameters

#### Applications

- ▶ Research and development
- ▶ Studio reference generator
- ▶ Manufacturing test
- ▶ Equipment design maintenance
- ▶ Post-production and broadcast facilities
- ▶ Automated manufacturing test

For further details visit:  
[www.tektronix.com/tg2000](http://www.tektronix.com/tg2000)



▶ **New**

### TG700 Multi-format sync and signal generator

Designed with the changing needs of the video industry in mind, the TG700 offers sync pulse generation (with next generation "Stay GenLock™" architecture) and test signal generation for a wide array of analog, serial digital, and digital high definition formats. The new HDLG7 HD Dual Link Video Generator module can help you to:

- ▶ verify your dual-link interface designs by generating well-defined test signals as well as arbitrary video signals (converted from single link SDI)
- ▶ calibrate your displays and recording equipment to standard color patterns

#### Features and Benefits

- ▶ Modular platform which holds up to 4 modules – choose specific configurations from 9 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
- ▶ Network interfaces allows you to download test signals, frame pictures, logos and new firmware as well as backup, restore and duplicate settings of the TG700
- ▶ Frame Picture Option FP allows you to generate full frame test and custom patterns for AVG7, AWWG7, HDVG7 or DVG7 modules. Take BMP pictures and transfer them to picture files for the TG700
- ▶ The HDLG7 HD Dual Link Video Generator features two modes. The Converter Mode, in which an input HD-SDI signal (e.g. 4:2:2 YCbCr) is up-converted to a dual link signal (e.g. 4:4:4 RGB) output. A Generator Mode, in which a synthesized test pattern signal is generated on the module's outputs

#### Applications

- ▶ SD/HD post and production facilities
- ▶ Research and development
- ▶ Equipment design and maintenance
- ▶ Interoperability of digital cinema products and services

For further details visit:  
[www.tektronix.com/tg700](http://www.tektronix.com/tg700)

## Signal Analyzers



### VM700T Measurement Set

The VM700T automates measurement and testing of analog composite and digital SDI video signals. The VM700T is the de-facto industry standard for SD analog and digital video measurements, delivering test results that are recognized, understood, and trusted across the entire video measurement industry.

#### Features and Benefits

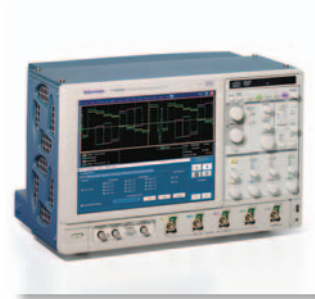
- ▶ Reference Standard Accuracy, aided by precision relative to reference measurements
- ▶ NTSC, PAL, Component SD and Digital SDI Measurement Options
- ▶ Picture, Vector, and Waveform displays

- ▶ Application specific measurement options for sync timing wander, camera, teletext data, and audio signal analysis
- ▶ Accepts a wide range of industry standard test signals, with minimal reconfiguration required
- ▶ Configurable function mode and programmable auto mode enable customized and fully automatic signal analysis, error detection, and results documentation
- ▶ Eye diagram for digital SDI signals that integrates rise time, fall time, and jitter measurements with the eye diagram display
- ▶ Optional GPIB remote control

#### Applications

- ▶ Research and development
- ▶ Quality assurance and signal compliance testing
- ▶ Automated functional test
- ▶ Unattended monitoring of video signals from studios, STL's, earth stations and transmitters

For further details visit:  
[www.tektronix.com/vm700t](http://www.tektronix.com/vm700t)



▶ New

### VM6000 Automated Video Measurement Set

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.

#### 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

#### Applications

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

For further details visit:  
[www.tektronix.com/vm6000](http://www.tektronix.com/vm6000)

## Content Verification



### Cerify 3.0

Cerify is the world's first fully automated system capable of verifying the quality of file-based, compressed digital video and audio content prior to transmission or use. Cerify fully tests all aspects of the video and audio to ensure it meets quality and compliance for video and audio standards, and is the only system available that can automatically verify and validate that file content is ready and adheres to user-defined templates.

Cerify v3.0 offers new features including support of GXF and MXF file formats, detailed reporting of file parameters, additional baseband video and audio tests, and CeriTalk API for integration via XML with automation systems.

#### Features and Benefits

- ▶ Runs automatically 24/7 to perform consistent and thorough checks of incoming video files against user-defined 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)

- ▶ All standards (MPEG-2, MPEG-4, H.264, VC-1), bit rates, frame rates and sizes (QCIF, CIF, SD, D1, 720p, 1080i/50, 1080i/60) and wrapper types (GXF, MXF) are tested
- ▶ Multiple simultaneous testing of bit stream files and multiple 'hot folder' operation
- ▶ Logs errors, informs automation systems, plus programmable actions such as email user alert, quarantine files
- ▶ High reliability Linux based server integrates via GigE with installed video server systems
- ▶ Web-browser user interface and control

#### Applications

- ▶ Checking that post production content has been correctly encoded and conforms to the required quality and format standard before dispatch to the broadcaster
- ▶ Checking audio and video after encoding, at ingest, after editing, and before playout for terrestrial, satellite, cable, internet and video-on-demand content
- ▶ Checking integrity before and after archiving

With Tektronix' Cerify, you can be assured of content that adheres to your standards for quality, and know the content is correct before it is transmitted.

#### CerifyLite

CerifyLite provides an objective test solution to these challenges in a convenient software package for use on PCs and laptops. It is ideal for Post Production and content houses who need to check that file-based video is correct before it is dispatched.

CerifyLite provides the same full range of encoding and baseband tests as Cerify V3.0. This includes extensive testing of file compression, quantization, bitrate, format tests and baseband type video tests for letterbox/pillarbox, gamut, luma, chroma, and video signal levels. Audio tests include audio peak and minimum level, audio loss, clipping, mute, and test tones on audio channels. The test results and template databases are Cerify compatible so that a Production or DVD House using CerifyLite can use the same templates and checks before dispatching the content as the Broadcaster uses for testing with Cerify on Ingest.

**For more detailed and product specific information, please see the Tektronix web site: [www.tektronix.com](http://www.tektronix.com)**

#### Resources

- ▶ Request a quote
- ▶ Ask the experts/FAQs
- ▶ Request a demo
- ▶ Product registration
- ▶ Product calibration

#### Technical Content

- ▶ Application notes
- ▶ Technical briefs
- ▶ Interactive product demos
- ▶ Selection guides
- ▶ White papers

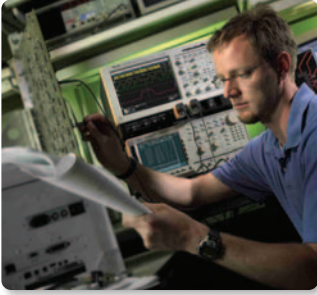
#### Service

- ▶ Online look-up tool
- ▶ Calibration

#### MyTek Resources

- ▶ Download manuals
- ▶ Access to software and drivers
- ▶ Check on order status
- ▶ Review service status
- ▶ My product support
- ▶ E-tutorials

## Service



### The full value of a Tektronix Calibration

Ensuring measurement accuracy, the breadth of testing performed with a Tektronix Calibration provides confidence in all measurements conducted by the calibrated instrument. Added to breadth of testing, Tektronix delivers the full capability and expertise of the original equipment manufacturer to make, on the spot, any necessary adjustments, keeping your instruments in operation at your site. The latest equipment and procedures designed for calibrating Tektronix instruments are used, delivering a complete set of tests. Enhancing the lifetime value of your instrument, Tektronix brings to you the unique ability to install the latest product updates and upgrades.

**On-site Calibration Service keeps your instruments at peak performance and your operations at peak efficiency.**

### ► Summary of Basic Service Coverage

Repair Service Coverage	Calibration Service Coverage	On-site Service
<ul style="list-style-type: none"> <li>► Coverage of equipment, parts, labor and transportation</li> <li>► Applicable product updates</li> <li>► Applicable safety and reliability updates</li> </ul>	<ul style="list-style-type: none"> <li>► Accredited calibration</li> <li>► Traceable calibration</li> <li>► Functional verification</li> <li>► Applicable product updates</li> <li>► Applicable safety and reliability updates</li> <li>► Calibration records retention</li> </ul>	<ul style="list-style-type: none"> <li>► Your instruments remain in your workplace</li> <li>► Turn-around time is measured in hours, not days</li> <li>► Compliance is assured through calibration or functional verification using factory-certified procedures</li> <li>► Service is pre-arranged to fit your schedule</li> <li>► Factory trained experts perform the work at your location</li> </ul>

### The Tektronix Customer 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. We call it your Customer Service Advantage.

This is what you get with the Tektronix Customer Service Advantage:

- Access to the source of product knowledge: No one can do it better than Tektronix. We designed it. We know how to optimize it. We ensure that your Tektronix products deliver peak performance.
- Your challenges solved: Our people listen to you. We go out of our way to get the exact expertise necessary to satisfy your need – it is part of the way we do business. It is part of standing behind our products.
- 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: No hassle service from initial service call to turnaround and delivery – our goal is to ease your service management and minimize downtime while your instrument is being serviced.
- Flexible repair and calibration service: Your specific needs addressed by a team of professionals focused on getting your instrument back in operation as soon as possible. You have choices of flexible options and service packages to meet your needs. And access to the best on-call technical support staff in the industry, with over 20 man years of training per support engineer.
- Customer centric approach dedicated to serving your needs everyday: We value your relationship and believe you deserve a better price for your loyalty. Tektronix Customer Service Advantage Programs are a cost effective addition to your standard warranty – and are designed to optimize your Tektronix product performance. Gain productivity and return on your investment through efficient service management and fixed cost of service.

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### 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](http://www.tektronix.com)



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Enabling Innovation

