

# Cerify® 200 - Automated QC of File-based Video

## CYC200 • CYS200 • CYM200 Data Sheet



### Features & Benefits

- Replaces Error-prone, Time-consuming, and Expensive Manual Process of Visually Inspecting Video Content
- Runs Automatically 24/7 to Perform Consistent and Thorough Checks of Incoming Video Files Against User-defined Templates
- Integrates with Video Servers
- Integrates with Automation and Asset Management Systems Using CeriTalk API
- Each Unit Test can Test Four Files Simultaneously, and Multiple Units can be Clustered Together to Achieve Very High Throughputs
- Logs Errors, Informs Automation Systems, Plus Programmable Actions such as E-mail User Alert, Quarantine, and Move Files
- High-reliability Server Integrates through GigE with Installed Video Server Systems
- Web-browser User Control

### Tests include:

- Encoding Errors, Syntax Errors, Format, Bit Rate, Quants, Frame Rate, GOP, Aspect Ratio, Color Format, VBV Buffer, File Size, Correct PID, CableLabs VoD Compliance
- Video Playtime, Signal Levels, Gamut, Luma, Chroma, Black Frames, Video Quality (Blockiness), Freeze Frame, Field Order, Telecine Pulldown
- Audio Playtime, Peak and Minimum Levels, Audio Loss, Clipping, Mute, Test Tones

### Formats

- **Video:** MPEG-2, IMX30/50, D10, XDCAM, MPEG-4 AVC (H.264), VC-1/WMV9, MPEG-4 Part 2, H.263, DV/DVCPPro25, DV/DVCPPro50, DVCPPro100/HD
- **Wrappers:** MPEG-2 Transport Stream, MPEG-2 Program Stream, MP4, 3GPP, MXF, GXF, MOV, ASF
- **Format:** QCIF, CIF, D1, 720p, 1080i, 1080p
- **Audio:** MPEG-1, MPEG-2, MPEG-2 AAC, AAC-Plus, HE-AAC, PCM, WMA, AC3, Dolby E

### Applications

- **Broadcasters:** For Checking Audio and Video After Encoding, At Ingest, After Editing, After Transcoding, and Before Payout for Terrestrial, Satellite, Cable, Internet, and Video-on-Demand Content
- **Archiving:** For Checking Integrity Before and After Archiving
- **Content Providers:** For Checking Postproduction Content Has Been Correctly Encoded and Conforms to the Required Quality and Format Standard Before Dispatch to the Broadcaster

## With Cerify® You Know Your Content is Correct Before it is Transmitted or Used

Quality control of file-based video that may be ingested from different sources and encoded at different bit rates, formats, and compression standards for SD/HD, VOD, and IPTV delivery presents considerable challenges. File-based video must be quality checked for:

**Correct Syntax:** At the digital level the audio and video must be correctly encoded without errors in accordance with the compression standard, so that it plays out correctly at the customer's STB/payout device.

**Correct Parameters:** The audio and video bit rates, GOP structure, video color-space, color depth, frame size, frame rate, aspect ratio, and quantization levels must be correct.

**Correct Baseband and Quality Levels:** The analog parameters of signal levels, luma, chroma, gamut, and quality levels of black frames, video quality (blockiness), loss of audio, audio clipping, and video and audio playtime.

Manual inspection can playback, watch, and listen but is subjective and cannot look inside the encoding to check that the correct parameters have been used - for example, have the packet size, GOP structure, and bit rates been set correctly?

Cerify® 200 solves all these problems, and can be easily integrated with Automation and Asset Management systems using the CeriTalk API. It is the world's first and leading automated system for checking/verifying file-based video content prior to transmission or use.

Cerify® 200 uses the latest server technology providing high throughputs and processing speeds. Each test unit can test four files simultaneously and units can also be clustered to provide high throughputs and redundancy.

Testing is in accordance with user-defined templates, and can run fully automatically 24/7. Jobs can be assigned different priorities depending on how quickly they need to go to air.

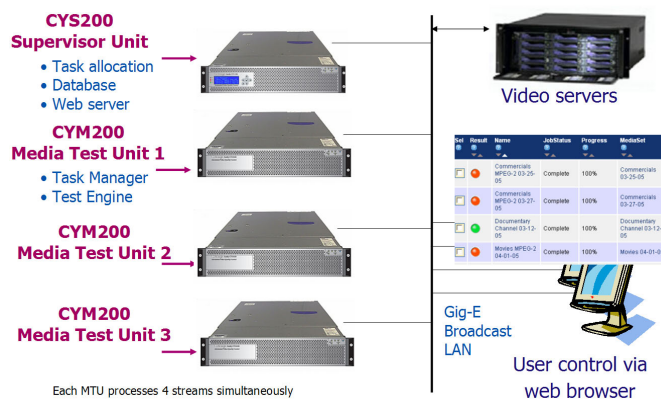
Cerify® logs errors as the content is checked, can inform automation systems, move files depending on the results, and e-mail users and content encoders detailing the errors found.

CeriTalk API provides complete integration with automation and asset management systems.

### Multiple Cerify® Media Test Units

Cerify can be used as a single unit, or alternatively multiple Cerify Media Test Units can be used on a network, providing enhanced throughput for multiple content channels, and load redistribution and redundancy in the event of failure.

- The testing of files is controlled by a Cerify Supervisor Unit, which allocates test Jobs to the Media Test Units (where there is only one Cerify unit, it acts as Supervisor and Media Test Unit).
- User access is through a standard Web browser from any location on the network.
- Integrates with, and can be controlled by, Automation and Asset Management Systems using the CeriTalk API.



## User Interface

Easy-to-Use Web Browser Interface Shows Jobs Status Results at Top Level as Red Light / Green Light

Jobs Monitor

Result	Name	Job Status	Progress	MediaSet	Profile	Priority	File Size	Creator	Status	Creation Time	Start Time	End Time	Channel	Copy	
❌	1 Commercials	Complete	100%	1 Commercials	Commercials	Medium	31.1MB	admin	Active	2008-09-17 13:59:46	2008-09-17 14:01:08	2008-09-17 14:01:41			
✅	1 Documentaries	Complete	100%	1 Documentaries	Documentaries	Medium	5.87MB	admin	Active	2008-09-17 13:59:46	2008-09-17 14:01:07	2008-09-17 14:01:25			
❌	1 Movies	Complete	100%	1 Movies	Movies	Low	39.4MB	admin	Active	2008-09-17 13:59:46	2008-09-17 14:01:53	2008-09-17 14:02:23			
❌	1 News	Complete	100%	1 News	News	Medium	4	31.3MB	admin	Active	2008-09-17 13:59:45	2008-09-17 14:00:43	2008-09-17 14:01:26		
❌	1 Sports	Complete	100%	1 Sports	Sports	Medium	2	31.8MB	admin	Active	2008-09-17 13:59:46	2008-09-17 14:01:08	2008-09-17 14:01:44		
❌	1 Weather	Complete	100%	1 Weather	Weather	Medium	4	31.5MB	admin	Active	2008-09-17 13:59:45	2008-09-17 14:00:45	2008-09-17 14:01:11		

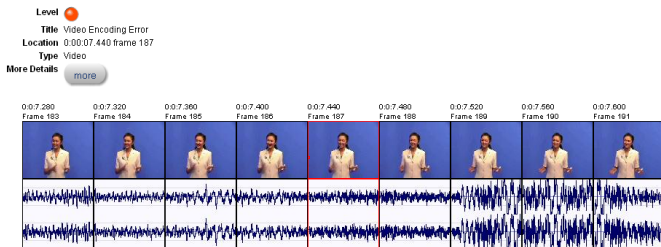
### Click to Get Job Details

Job Details

Files

Result	Filename	Size	Status	Progress	Start Time	End Time	Poster Frame
❌	ftp://cerifycontroller/content/news/airport_interview.ts	8.06MB	Complete	100%	2007-08-17 15:53:05.0	2007-08-17 15:53:27.0	
❌	ftp://cerifycontroller/content/news/beijing_weather_girl.ts	7.66MB	Complete	100%	2007-08-17 15:53:27.0	2007-08-17 15:53:48.0	
✅	ftp://cerifycontroller/content/news/live_report.ts	8.08MB	Complete	100%	2007-08-17 15:53:13.0	2007-08-17 15:53:33.0	
✅	ftp://cerifycontroller/content/news/news360.ts	7.52MB	Complete	100%	2007-08-17 15:53:34.0	2007-08-17 15:53:54.0	

### Click to Get Details of Stream Errors



### Report by Job, Type, Date Range, File Name, Etc.

Reports - Microsoft Internet Explorer

Address http://192.168.0.100/protected/208report.do

Error Details

Filename: airport\_interview.ts

Path: ftp://192.168.200.10/content/news

Level	Type	Location	Title	Details
error	video	0:00:00:080 frame 3	Invalid code (Alert ID 22015)	In an picture_code[1][0] must be 15. Here it is set to 2. Stream position: 0x0 (dec: 120), 0x3 (Hex: 0x00000003) (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:200 frame 156	DCT coefficient index out of bounds (Alert ID 22199)	Inter-block DCT coefficient index out of bounds (65 == 64) Stream position: 0x2e7f83 (dec: 3077807), bit 2 (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:200 frame 156	Bad slice order (Alert ID 22210)	Predicted slice structure is in effect, yet the first macroblock of the current slice (n=0, w=31, slice=31) does not immediately follow the last macroblock of the preceding slice (n=2, w=30, slice=30) Stream position: 0x2e7f83 (dec: 3077807), bit 2 (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:200 frame 156	Bad VLC for macroblock_address_increment (Alert ID 22100)	Invalid VLC for macroblock_address_increment encountered bit pattern '0000010101'. This does not match any valid code value. Stream position: 0x2e7f83 (dec: 3077807), bit 1 (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:200 frame 156	Bad slice order (Alert ID 22210)	Predicted slice structure is in effect, yet the first macroblock of the current slice (n=0, w=32, slice=32) does not immediately follow the last macroblock of the preceding slice (n=1, w=31, slice=31) Stream position: 0x2e7f83 (dec: 3077807), bit 2 (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:040 frame 172	Bad slice order (Alert ID 22210)	Slices must be contained within a single row of macroblocks. The current macroblock (n=0, w=18) belongs to a slice from a previous row. Stream position: 0x248755 (dec: 3442517), bit 0 (Bistream context: K5QPCCGSLM8K)
error	video	0:00:06:340 frame 172	Bad slice order (Alert ID 22210)	Slices must occur in raster scan order and not overlap. However the current macroblock with index 610 (n=0, w=18, slice=18) occurs earlier in raster scan order than the previously decoded macroblock with index 610 (n=0, w=18, slice=18) Stream position: 0x248755 (dec: 3442517), bit 7 (Bistream context: K5QPCCGSLM8K)

Filename: beijing\_weather\_girl.ts

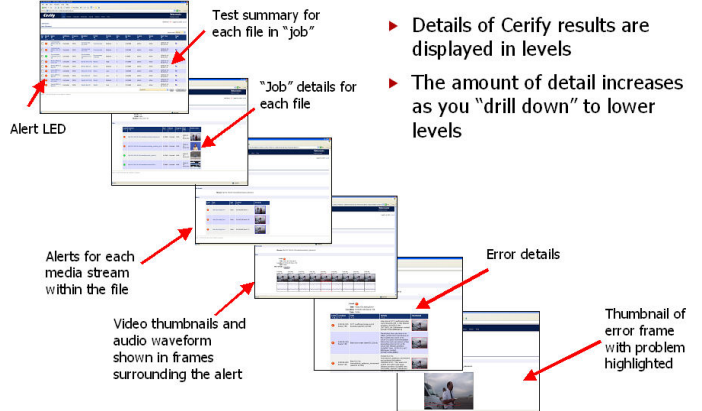
Path: ftp://192.168.200.10/content/news

Level	Type	Location	Title	Details
error	video	0:00:07:440 frame 187	Bad slice order (Alert ID 22210)	Predicted slice structure is in effect, yet the first macroblock of the current slice (n=0, w=23, slice=23) does not immediately follow the last macroblock of the preceding slice (n=4, w=22, slice=22) Stream position: 0x391185 (dec: 3740237), bit 0 (Bistream context: K5QPCCGSLM8K)

Job Details

Job Name: Movies MPEG-2 04-01-05

Date:



## Characteristics

### Standards Supported

Standard	Description
Video Formats	HD and SD - NTSC, PAL, SECAM, 24 fps
Resolutions	QCIF, CIF, SD, D1, 720p, 1080i/50, 1080i/60, 1080p (and nonstandard sizes from 16×16 to HD+)
Systems Level	MPEG-2 TS, Program stream, MPEG-4 Parts 1, 14 & 15, 3GPP, MXF, GXF, MOV, ASF
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	MPEG1, MPEG2, MPEG2 AAC, AACPlus (MPEG-4 AAC), HE-AAC, PCM, WMA, AC3, Dolby E

### Test Templates and Levels are User-controlled and Include:

- Container Level Transport System Tests
  - Correct Standard and Integrity
  - File Size, Bit Rate, Playtime, Number of Video and Audio Streams in Transport Container
  - Packet Size, Cable Labs VOD Compliance
  - Signalling of Close Captions, Teletext
- Video Tests
  - Correct Encoding Standard, Profile, and Syntax Checks for Encoding Errors
  - GOP Structure, Quantization, Frame Rate, Bit Rate, Frame Size, Interlaced/Progressive, Aspect Ratio
  - Baseband Tests including Gamut levels, Luma, Chroma, Signal levels, Letterbox/Pillarbox, Playtime
  - Color Depth, Color Format (4:2:0, 4:2:2), Copyright
  - Black Frames (Lead In, Lead Out, and During the Video), Video Quality (Blockiness), Frozen Frames, Field Order, Telecine Pulldown
- Audio Tests
  - Correct Encoding Standard, Profile, Syntax Checks for Encoding Errors
  - Sample Rate, Bit Rate, Playtime
  - Number of Channels, Peak and Minimum Signal levels on Each Channel
  - Audio Silence (Lead In, Lead Out, and During the Video), Clipping, Mute, Test Tones
- Action Templates and Reporting
  - Copy or Move File on Success or Error.
  - E-mail Alerts with Test Reports
  - Web-based On-screen Job Reports and Detailed Drill-down to Error Details
  - Text/HTML Query Reports of All Files in the Database with Full File Details and Error Reports
  - **CeriTalk** Automation API
- Multiple User Templates and Profiles Can Be Set Up for Different Content Types and Sources
- XML-based Templates can be Imported and Exported

## Ordering Information

Cerify® 200 can be ordered as a single CYC200 Combined unit.

Product	Option	Description
CYC200		Combined Supervisor and Media Test Unit
CYC200	MP2	MPEG-2
CYC200	MP4	MPEG-4 and H.263 (Baseline)
CYC200	AVC	H.264/AVC
CYC200	VC1	VC-1
CYC200	DV	DV

Cerify® 200 can also be ordered as a cluster of one CYS200 Controller unit and multiple CYM200 Media Test Units

Product	Option	Description
CYS200		Supervisor Unit for network clusters
CYM200		Media Test Unit for Cerify clusters
CYM200	MP2	MPEG-2
CYM200	MP4	MPEG-4 and H.263 (Baseline)
CYM200	AVC	H.264/AVC
CYM200	VC1	VC-1
CYM200	DV	DV

### Installation Service

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, testing, and documentation.

### System Support Service

Purchase MN options for comprehensive on-site hardware and software maintenance service per unit.

If no MN Option is purchased, Cerify® 200 Series products include a 12-month return-to-depot, hardware-only repair warranty.

Option	Description
MN1	1-year maintenance agreement. Must be ordered within 60 days of product purchase.
MN3	3-year maintenance agreement. Must be ordered within 60 days of product purchase.
MN5	5-year maintenance agreement. Must be ordered within 60 days of product purchase.

MN Options	Description
Software Maintenance	Includes software updates
Telephone Technical Support	Technical support during regular business hours, Monday through Friday
On-site Repair	Repairs performed at your facility
Parts Exchange	Advanced parts exchange with next-day delivery.

**Note:** Service coverage can be renewed for subsequent 12-month periods.



Product(s) are manufactured in ISO registered facilities.



Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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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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