Data Sheet

VIAVI MVP-200 Digital Video Probe PathTrak Video Monitoring

The VIAVI MVP-200 combines a digital video monitoring probe with a full, laboratory-grade Moving Picture Experts Group (MPEG) analyzer for troubleshooting. Developed for video service providers who must ensure the quality of service (QoS) for digital video networks, the MVP-200 is a cost-effective, scalable solution for monitoring, problem isolation, and troubleshooting.

The MVP-200 Solution

SimulTrack[™] II enables users to monitor MPEG digital video on Gigabit Ethernet circuits with a breadth, depth, and accuracy never before available. They can now monitor up to 300 programs simultaneously for TR 101-290 parameters. Newly provided timing health monitoring includes program clock reference (PCR) accuracy, jitter with nanosecond resolution, and PCR drift and frequency offset.

grams	for ALL	streams											
lected !	Stream	All streams Program	Number	CC Errors	PMT Errors	PID Errors	PCB Be	PCB Discontinuity Errors	PCB Accuracy Errors	PCB Jitter (ns)	PCB Accuracy (ns)	PCB Freq Offse	PCB Drift B
12) 1	World Fishing Network HD	708	0	0	0	0	0	0	19	25	0	0.000
7	. ,	Wmax	697	0	0	0	ů.	0	0	23	21	0	0.000
14		Toon Disney HD	711	0	0	0	0	0	0	31	39	-25	0.195
4		Thriller Max	692	0	0	0	0	0	0	32	41	4	0.000
6		Thriller Max West	695	0	0	0	0	0	0	18	19	0	0.000
23	3	The Travel Channel HD	730	0	0	0	0	0	0	18	21	0	0.000
12	2	The Tennis Channel HD	707	0	0	0	0	0	0	30	44	42	0.000
19	9	TMC Xtra West	721	0	0	0	0	0	0	22	26	0	0.000
20) '	TMC Xtra East	724	0	0	0	0	1	0	18	21	0	0.000
17		TMC HD - West	718	0	0	0	0	0	0	30	38	0	0.000
22	2 3	Speed HD	728	0	0	0	0	3	1	29	33	0	0.000
18	3 3	Showtime Extreme West	720	0	0	0	0	0	0	29	45	-21	0.000
20) :	Showtime Extreme East	723	0	0	0	0	0	0	31	38	4	0.074
18	3	Showcase HD West	719	0	0	0	0	0	0	17	22	0	0.000
19	9	Showcase HD East	722	0	0	0	0	1	0	31	37	6	0.000
17	r :	Sho2 HD West	717	0	0	0	0	1	0	18	23	0	0.000
24	۱ I	QVC HD	731	0	0	0	0	0	0	19	22	0	0.000
4		Duter Max	691	0	0	0	0	0	0	21	22	0	0.000
11	L 1	More Max	706	0	0	0	0	0	0	31	41	4	0.000
8	1	More Max West	700	0	0	0	0	0	0	21	25	0	0.000
15	5 1	May TV HD	713	0	0	0	0	0	0	33	38	-376	0.000
14	L 1	MGM Channel HD	712	0	0	0	0	0	0	20	26	0	0.000
15	5 1	Hallmark Movie Channel	714	0	0	0	0	1	0	22	22	0	0.000
2	1	HBO Zone	687	0	0	0	0	0	0	30	40	-3	0.000
2	1	HBO Zone (West)	688	0	0	0	0	0	0	20	16	0	0.000
10) (HBO Signature	704	0	0	0	0	0	0	34	48	2	0.000
7	1	HBO Signature (West)	698	0	0	0	0	0	0	34	38	0	0.000



Key Features

- Increase visibility with simultaneous monitoring of all programs
- Maximize alarm usefulness with unique thresholds for each stream and program
- Transport stream recording for offline analysis
- Reduce costs by combining a fulltime probe with a feature-rich MPEG-2 analyzer
- Multi-port design decreases perport analysis and deployment costs
- Powerful API enables the MVP-200 to communicate results data with multiple OSS systems





Monitoring QoS

The ability to customize monitoring profiles based on program source and content is vital to ensure the usefulness of the monitoring system. For example, engineers may define unique monitoring profiles for high definition (HD) content, standard definition (SD) content, as well as international and local programming. It also enables customization of thresholds for each program and for each monitoring point in the network.

The VIAVI MVP-200 provides the following event threshold capabilities:

- Define unique monitoring profiles for over 40 measurements
- Multiple levels of threshold violation: warning, minor, major, and critical
- For each item monitored, users can define the level of violation that generates an event

MVP-200 Configuration Tool VIAVI											I.				
Configure Upgrade															
Folders	Profile - Gary DTS-330														
 Probes Interface Groups 	Default Profile														
Configurations Channel Plane	Priority 1 Priority 2	PCR	Bitrate	P Network Ir	formational										
Profiles	Name +	Level •	SNMP 🔲 🔹	Notify 🔲 🛊	Warning ¢	Minor +	Major +	Critical ¢	Warm-Up +	Cool Down +					
	PID Bitrate Low	Off 👱			50.0Kbps	10.0Kbps	5.0Kbps	0.0Kbps	5.08	5.08	8				
	PID Bitrate High	Off 🔽			300.0Kbps	800.0Kbps	5000.0Kbps	10000.0Kbps	5.0s	5.0s	R				
	Program Bitrate Low	Wa 🛩		2	500.0Kbps	100.0Kbps 50.0Kbps		10.0Kbps	5.0s	5.0s	R				
	Program Bitrate High	Wa 🛩		2	8000.0Kbps	16000.0Kbps	20000.0Kbps	30000.0Kbps	3.08	3.08	8				
	Program Loss	Crit 🛩		V	1.0s	2.0s	3.0s	5.0s	1.0s	1.0s	8				
	Stream Loss	Crit 🛩		2	1.0s	2.0s	3.0s	5.0s	1.0s	1.0s					
	Stream Bitrate Low	Off 🖌			38500.0Kbps	38000.0Kbps	37000.0Kbps	35000.0Kbps	5.0s	5.0s	8				
	Stream Bitrate High	Off 🖌			39000.0Kbps	39500.0Kbps	40000.0Kbps	41000.0Kbps	5.08	5.08	8				
	Audio Bitrate Low	Crit 🛩			150.0Kbps	100.0Kbps	50.0Kbps	10.0Kbps	2.0s	2.0s	8				
	Audio Bitrate High	Crit 🛩		2	500.0Kbps	1000.0Kbps	2000.0Kbps	5000.0Kbps	4.0s	4.0s	R				
	Video Bitrate Low	ow Crit 🛩 🔲		V	500.0Kbps	100.0Kbps	10.0Kbps	5.0Kbps	5.08	5.08					
	Video Bitrate High	Maj 🗹 📃		2	14000.0Kbps	16000.0Kbps	18000.0Kbps	20000.0Kbps	5.08	10.08	8				
	NULL Bitrate Low	Off 🛩			5.0Kbps	3.0Kbps	1.0Kbps	0.0Kbps	10.0s	10.0s					
t											>				

The flexibility of the MVP-200 allows users to define the method used to join transport streams for monitoring. Users may choose to employ Internet Group Management Protocol (IGMP) from the MVP-200 to actively join transport streams or connect to the network using passive methods such as SPAN ports or network TAPs.

Troubleshooting Analysis

When needed, users can initiate the Detailed Analysis and Troubleshooting mode of the MVP-200. Focusing on a selected transport stream or program gives users the ability to remotely isolate problems and troubleshoot specific issues. Analysis of tables and metadata, video/audio timing comparisons for lip-sync analysis, PID-based utilization graphs, PCR timing graphs, and much more can eliminate costly dispatches unless absolutely necessary.

Troubleshooting mode has no impact on the monitoring functions of the MVP-200 eliminating the need for users to choose between monitoring functions and troubleshooting analysis. Each MVP-200 also has over 300 GB of hard disk drive space available for recording selected video transport streams to later provide to equipment manufacturers or for analyzing offline.



Configuration Tool

A web-based configuration tool allows users to create, store, and distribute configurations to probes. This tool supports user-defined grouping of units and interfaces along with status indicators. The MVP-200 configuration tool changes such as channel lineups and event thresholds enable easy distribution to probes throughout the network.

MVP-200 Co	nfigu	Iration	Tool										vi.	<u>v.</u> 1
Configure Upgrade														
Folders	Channel P	lan - datasheet2												
Probes Interface Groups	Cor	mplete Channel Plan												
Configurations	ID .	Name =	Destination	•	Source e	IGMP +	PAT Req	= Complet	• •	Profile :		Programs :	PIDs =	
Profiles	1	Stream 1	192.168.3.125	1005	192.168.3.124			V	Int	er HD	~	12	0	×
	2	Stream 2	192.168.3.125	1002	192.168.3.124	Z	V	×	Int	er HD	~	12	0	×
	3	Mux 1	192.168.3.125	1000	192.168.3.124				Int	er HD	~	4	1	×,
	4	Mux 2	192.168.3.125	1010	192.168.3.124				Lo	cal SD	~	25	0	×
	252 Encoder 15 19			1008	192.168.3.124			~	Int	er HD	~	15	0	X
							Add Stream	m						
	Progr	ams							PIDS					
		Name =	MPEG # =	STB≢ ≎	Pro	die =			PID =			Profile =		
		BIOHD	212	151	Sat HD		~	≤×	CAT	Cond	Acces	is	~	8×
		СМСНВ	784	121	Inter HD		~	×,×						
		POCSD	785	122	Sat HD		~	éx.						
	WZTC SD Local 78				Local SD	✓ ½×		×,×						

Scalability

Multiple MVP-200 units can be deployed in a system environment for monitoring at key points in the network. Or deploy a single MVP-200 and use a single PC to control it without having to deploy or integrate it into a full system. This scalability enables providers to leverage their initial investment as needs grow and evolve from a few stand-alone units to a larger centralized monitoring system with full analysis capabilities.

Additional Interfaces

For troubleshooting, the MVP-200 also supports asynchronous serial interface (ASI) for use separately or in conjunction with the Gigabit Ethernet interface to monitor and troubleshoot problems such as:

- validating transcoder operation
- comparing multiplexer input and output for proper configuration and operation
- monitoring and validating source video feeds
- ensuring error-free transport network operation
- monitoring timing health
- comparing video and voice PID timing drift for lip-sync issues

API

Integration of the MVP-200 can enhance the monitoring systems for many users. VIAVI provides an open Extensible Markup Language (XML)-based API for complete integration of monitoring functionality. Lighter integration users may choose to support a subset of these capabilities or employ the simple network management protocol (SNMP) trap generation feature of the MVP-200.

Conclusion

The MVP-200 is a highly scalable MPEG monitor/analyzer that combines the needs of both a system-integrated monitoring probe with all the features of a stand-alone digital video analyzer. Highly scalable with laboratory-grade results the MVP-200 addresses the needs of both network monitoring groups and troubleshooting engineers simultaneously in a single scalable, affordable package.

Related Products

The VIAVI PathTrak Video Monitoring System helps segment video problems in minutes not hours—by proactively monitoring video, voice over IP (VoIP), and high-speed data (HSD) carriers for radio frequency (RF) and MPEG impairments.

冯 🕞 🗧 🔷 http://1	0.15.8.236/Pa	thTrakvM/																		~	++ ×	Wikiped	ia (en)			2		
🕈 🕸 🔿 3DSU PathTi	rak™ Video Mo	nitoring																			6	- 🗟	• 🖶 •	🕑 Eog	•• ()	Tgols •		
	ŶЬ	<u>\\'I</u>																			Pat	hTrak	™ Vide	eo Mo	onitor	ing		
	ethernet stream summary																											
	video monitoring / Gary Test / GigE Interface / CH 4 (Ktech-ANT-1)																											
	Site: 🙆 G	ary Test							TestF	Point 🚽	Gig	jE Inte	erface						Descript	ion: MV	/P-200 Lo	cal Terre	strial fee	d				
	TSID: 1809								Stream	m: 4 (K	tech-A	ANT-1)															
	Source: 10.	115.45.6:4	9152						Destin	nation:	232.2	55.38	.1:1802	4					VLAN:	-								
	Program Status Event Log MPEG Live																											
rideo Monitoring	Stop 6	eset Re	maining: 3	min	57 sec																							
Probes																												
	TSID:						18	809	Program Count: 3 Dura									urati	tion: 1 min 0						l0 sec			
	Error Cour	nts							PCR	Error (Counts								Rates									
Configure	Sync L	oss:						0	PCR Repetition: 0									0	FD: 542							μs		
Help	Sync B	yte:						0	PCR Discontinuity: 0									0	IFD Std Dev. 14							μs		
	PAT:							0 PCR Accuracy:									0	IP Rate: 20.5										
Change My Password	Contin	uity Count:						0 PCR Bad:										0	MPE	G Rate	E.		19.4	Mb/s				
Logoff	PMT:							0	0 PCR Look									0	Null	Rate:			1.2	Mb/s				
	Referre	d PID:						0 PCR Overall Jitter: 0									0	Video Rate:						Mb/s				
	Transp	ort						0 PCR Freq Offset 0										0	Audio Rate:					0.8	Mb/s			
about	CAT:							0	PCR Drift Rate:									0	PAT Rate: 11.0)/s			
	RTP:							0	2																			
	Cther:							0																				
	Status	Name	Program	STB	Rate (Mb/s)	Cont Count	рмт	Ref PID	PCR Rep	PCR I	PCR	PCR Bad	PCR Lock	PCR Net Jitter	PCR ACC (ns)	PCR Overall Jitter (ns)	PCR Freq Offs (Hz)	⊧t	PCR Drift Rate (Hz/s)	PID Rate	Video Rate (Mb/s)	Audio Rate (Mb/s)	Data Rate (Mb/s)	PMT Rate (/s)	PCR Rate (/s)	Other		
	OK	WTVD-D1	1	381	10.3	0	0	0	0	0	0	0	0	0	30) 2	7 39	9.4	0.0	0	9.9	0.4	0.0	3.0	33.0	0		
	Warning	WTVD-D2	2	382	6.2	0	0	0	0	0	0	0	0	0	21	2	2 39	9.4	0.0	0	6.0	0.2	0.0	2.0	33.0	0		
	OK	WTVD-D3	3	383	1.4	0	0	0	0	0	0	0	0	0	25	2	4 38	9.4	0.0	0	1.2	0.2	0.0	2.0	34.0	0		

Specifications

MVP-200 Digital Video Probe									
Chassis (W x H x D)	Industrial 19-in, 2U rack-mount								
	42.5 x 8.9 x 50.8 cm								
	(16.75 x 3.5 x 20. in)								
Memory	2 GB RAM								
Storage	300 GB for transport stream recording (400 GB total)								
Regulatory	FCC, CE, MET								
compliance									
Power requirements									
MVP200	110 to 220 VAC								
AC-powered chassis	135 W (400 W max)								
	-48 VDC								
MVP200 - 48VDC	-48 VDC								
DC-powered chassis	135 W (400 W max)								
option									
Interface options (chassis supports 2 interfaces)									
Gigabit Ethernet (1000	BaseT, 1000BaseLX, 1000BaseSX,								
1000BaseZX)									
ASI Input									

Software (included)									
Transport Stream Analyzer (ATSC and DVB)									
SimulTrack™ II for Gigabit Ethernet									
Web server Configuration Tools									
MVP-200 Software (optional)									
Transport Stream Record	Provides the ability to record a selected TS to the HDD								
Digital Program Insertion	Analysis of SCTE-35 DPI								
Frame Capture	Allows capture of IP over MPEG frames								
XML API	API for use in centralized monitoring system								
XSI/OpenTV	Analysis of XSI/OpenTV format								
MHP Analysis	Analysis of MHP/DCM-CC								
System Software (optiona	al)								
PathTrak Video Monitoring	System Centralized monitoring and management system								



Contact Us +1 844 GO VIAVI (+1 844 468 4284)

To reach the VIAVI office nearest you, visit viavisolutions.com/contact

© 2019 VIAVI Solutions Inc. Product specifications and descriptions in this document are subject to change without notice. mvp200.ds.sas.tm.ae 30149358 004 0912