

IP 10G Core Monitoring Blade

VB330



The VB330 Probe is the flagship in Sencore's VideoBRIDGE products line. With line-speed 10G performance and a massive multiprocessor architecture, the VB330 can deliver monitoring and analytics of thousands of streams and a multitude of technologies in real-time and in parallel.

The VB330 is aimed at monitoring the full cross section of services commonly found in media related network operations. The VB330 is a very flexible tool for monitoring network performance involving signal formats and areas as diverse as video IP multicast, video OTT/ABR streaming, voice trunks, video-on-demand unicast, Ethernet packet micro bursts, PCAP recording and general traffic protocol inspection.

Measurement analytics are available via easy drill-down functionality and the patented MediaWindow™ technology simplifies monitoring and analysis of this complex data. Multiple VB330s can be placed in a 1RU chassis, offering a performance of up to 40 Gbit/s per 1RU.

- Monitor up to 2000 IP multicasts/unicasts in parallel
- Monitor up to 500 OTT/ABR streams at master play-out or at CDN origin server in all the common streaming formats using the bulk OTT option. Streaming formats supported currently include Microsoft SmoothStream™, Apple HLS™, Adobe HDS™, MPEG-DASH and basic RTMP.
- Monitor Voice or Video-on-Demand trunks using the Advanced Ethernet Option. Summarize traffic issues across the whole trunk dynamically.
- Identify packet micro bursting and pinpoint sources of violations. Micro bursting is a particularly important area when traversing 10G/1G network domains where queuing issues often arise and result in packet loss. Perform deep TR 101 290 analysis on up to 200 streams with all priority levels covered - Level 1, 2 and 3.
- Perform PCAP packet capture and retrieval for offline analysis using 3rd party tools such as Wireshark or tcpdump.

All VideoBRIDGE probes and modules are self-contained and based on rugged, embedded electronics. Each is built to carrier grade standards and satisfies the stringent requirements of the telecommunications and broadcast industries. Built for 24/7 operations and designed to go into edge and core router environments, all VideoBRIDGE Probes have been designed with industrial use in mind.

KEY FEATURES

- 2 x SFP+ optical 10G ports (One enabled by default)
- 1 x 10/100/1000-T RJ45 Ethernet management port
- 1 x 1PPS TTL level 50 ohm SMA female input for future GPS synchronization usage
- AC or DC power options with redundant load-balancing power supplies
- Microsoft MediaRoom™ X-bit RTP header extension support
- Visual graphing of jitter, packet loss and bandwidth performance with at least 4 days of history for all IP multicasts
- Framework for automatic detection of present multicast/unicast stream
- Protocol hierarchy view with bandwidth and packet count statistics for each active video interface
- Functionality for relaying any IP multicast monitored to a different IP destination for further analysis or recording (Remote Data Path - RDP)
- IGMPv2/v3 protocol logging and analysis framework
- Flexible template based alarming system to allow custom configuration of what parameters result in an alarm being generated on a per-TS level
- PCAP capture of up to 2GB of data for further analysis using Wireshark or similar
- Microbursting jitter analysis for monitoring total 10G trunk load
- IEEE 802.1Q VLAN tagging support
- Thumbnail decoding of multicast/unicast IP transport streams
- ETSI TS 102 034 support
- SMPTE 2022 FEC support
- Alarm on changes to TOS/DSCP and TTL for detection of changes in network prioritization
- Time loss distance measurements according to RFC3357
- MediaWindow™ visualization technology for trending packet loss and jitter over time
- Full Service Monitoring of any network device via built-in ICMP and HTTP query agents
- Searchable alarm lists
- Alarm forwarding to 3rd party systems via SNMP TRAP via up to 3 unique destinations
- NTP client time synchronization support according to RFC2030
- DHCP client support on management and video ports according to RFC2131
- Easy web-based software and license upgrade
- XML-based configuration save and retrieval via web
- Powerful and openly available XML-based External Integration Interface (Eii) for 3rd party integration
- Condensed mosaic thumbnail view of all services monitored

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The screenshot displays the software interface for the IP 10G Core Monitoring Blade. The top navigation bar includes tabs for Main, Alarms, Compare, Mon, MW, RDP, Ethernet, ETR 290, ASI, FSM, Setup, Data, and About. The main content area is divided into several sections:

- Traffic Summary:** A table showing traffic statistics for various protocols. The 'Data/video (eth0)' section shows:

Protocol (rx) eth0	Cur bitrate	Max bitrate	Min bitrate	Frames	Frames %	Min len	Max len
IPv4	371.97 Mbps	403.36 Mbps	472 tps	23054735991	99.99 %	60	1370
TCP	0 tps	279.61 kbps	0 tps	129683	0.00 %	60	842
Torrent	0 tps	472 tps	0 tps	1	0.00 %	62	62
HTTP	0 tps	279.61 kbps	0 tps	129682	0.00 %	60	842
UDP	371.97 Mbps	403.37 Mbps	472 tps	23054686218	99.99 %	67	1370
NTP	0 tps	858 tps	0 tps	62	0.00 %	90	90
DHDP	0 tps	7.98 kbps	0 tps	4824	0.00 %	64	94
MMON	371.97 Mbps	403.38 Mbps	472 tps	23054487889	99.99 %	606	1370
OTHER	0 tps	1.65 Mbps	0 tps	1236583	0.00 %	67	1358
ICMP	0 tps	8.81 kbps	0 tps	947	0.00 %	69	1066
ICMP	0 tps	6.71 kbps	0 tps	339607	0.00 %	60	60
PM	0 tps	1.43 kbps	0 tps	227839	0.00 %	72	72
IPv6	0 tps	0 tps	0 tps	0	0.00 %	0	0
Other	480 tps	12.78 kbps	480 tps	4821668	0.00 %	60	633
- Management (e):** Shows TX bitrate (21.60 kbps), RX bitrate (371.19 Mbps), and RX bitrate (9.78 kbps).
- Joined multicasts:** A table listing multicast streams with columns for Name, Signal, Page, Mapping, Net bitrate, CC errs, Pids, Syncb errs, Curr bitrate, and Min bitrate.

i	Thumb	Name	Signal	Page	Mapping	Net bitrate	CC errs	Pids	Syncb errs	Curr bitrate	Min bitrate
1		NRK_1	38d	1	7TS/UDP	6.90 Mbps	104	7	0	6.90 Mbps	10.30 kbps
2		NRK_2	38d	1	7TS/UDP	7.05 Mbps	95	7	0	7.05 Mbps	10.10 kbps
3		TV2_NORWAY	38d	1	7TS/UDP	7.99 Mbps	14565	6	0	7.99 Mbps	9.22 kbps
4		TVNORGE	14d	1	7TS/UDP	5.26 Mbps	973	6	0	5.26 Mbps	8.97 kbps
5		SVT1	77d	1	7TS/UDP	4.42 Mbps	266172	8	0	4.42 Mbps	55.25 kbps
6		DR1	77d	1	7TS/UDP	5.47 Mbps	21836	8	0	5.47 Mbps	56.98 kbps
7		DR2	77d	1	7TS/RTP	2.38 Mbps	6120	8	0	2.38 Mbps	57.50 kbps
8		SVT2	77d	1	7TS/UDP	2.49 Mbps	267902	9	0	2.49 Mbps	57.50 kbps
9		NRK_3	38d	1	7TS/UDP	4.70 Mbps	94	7	0	4.70 Mbps	10.30 kbps
10		FEM	38d	1	7TS/UDP	5.19 Mbps	15128	5	0	5.19 Mbps	8.73 kbps
- VBC alarms:** A table showing alarm history with columns for #, Sev, Status, Time, Location ID, Interface, and Description.

MULTICAST/UNICAST MONITORING FEATURES

- Monitor current/min/max UDP payload bitrate
- Monitor current/min/max TS payload not counting NULL TS packets
- Count number of IP packets
- Source/destination IP address
- Type-of-Service field (TOS/DSCP)
- Time-to-Live field (TTL)
- VLAN ID, if present
- Max/min/average IP packet Inter-Arrival time (IAT) for jitter analysis
- TS Continuity Counter errors
- TS Sync errors
- Media Loss Rate - number of TS packets lost
- Source/destination MAC address
- RTP dropped packets, duplicate packets, out-of-order packets
- RTP max/min hole size, hole separation
- Forward Error Correction analysis according to SMPTE 2022

ENVIRONMENT SPECIFICATIONS

Operating temperature: 0°C to 45°C
 Storage temperature: -20°C to 70°C
 Operating humidity: 5% to 95% non-condensing

CONNECTORS

10Gb Ethernet port A: SFP+ module
 10Gb Ethernet port B: SFP+ module
 10/100/1000T management: RJ-45
 Initial setup: USB Type A

CI SUPPLY REQUIREMENTS

Power dissipated per VB330 module: 40W
 Chassis input voltage: VB300:100-240VAC
 VB300-DC:-48VDC
 Chassis max. power dissipated: 150W

MECHANICAL SPECIFICATIONS

Standard 19" 1RU rack-mount
 W x H x D: 19 x 1.7 x 15.75 in. (483 x 43 x 400 mm)
 Weight: 18 lbs (8.2 kg) fully populated

CONTROL AND MANAGEMENT

Basic setup/control through RS232 via USB
 Remote access through HTTP or TELNET
 Optional control via VBC Server