



## VB330

### IP 10G Core Monitoring Blade



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 CDN origin in all the common streaming formats including Microsoft SmoothStream™, Apple HLS™, Adobe HDS™, MPEG-DASH and basic RTMP.
- Unpack and monitor streams inside Remove-PHY (R-PHY) L2TP traffic for easy validation of quality video delivery.
- Identify packet micro bursting and pinpoint sources of violations in 10G/1G network domains where queuing issues often arise and result in packet loss.
- Perform deep TR 101 290 analysis on up to 400 streams with all priority levels covered - Level 1, 2 and 3.
- Make PCAP packet captures 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
- Full support for IPv4 and IPv6 addressing and multicasts
- Visual graphing of jitter, packet loss and bandwidth performance with at least 4 days of history for all IP multicasts
- 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
- 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
- Alarm forwarding to 3rd party systems via SNMP TRAP via up to 3 unique destinations
- 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

**IP 10G Core Monitoring Blade**

Protocol (by BPS)	Curr. Bytes	Max. Bytes	Max. Pkts	Frames	Frames %	Min. Errs	Max. Errs
IPv4	371.87 Mbps	403.38 Mbps	472 tps	23054735991	99.99 %	60	1370
TCP	0 bps	279.61 Mbps	0 tps	129963	0.00 %	60	842
Telnet	0 bps	472 tps	0 tps	1	0.00 %	62	62
HTTP	0 bps	279.61 Mbps	0 tps	129962	0.00 %	60	842
UDP	371.87 Mbps	403.37 Mbps	472 tps	23054885018	99.99 %	67	1370
NTP	0 bps	696 bps	0 tps	62	0.00 %	90	90
SSH	0 bps	7.98 Mbps	0 tps	4824	0.00 %	64	94
AMN	371.87 Mbps	403.38 Mbps	472 tps	23054877889	99.99 %	606	1370
OTHER	0 bps	1.65 Mbps	0 tps	1236583	0.00 %	67	1358
ICMP	0 bps	8.81 Mbps	0 tps	947	0.00 %	69	1068
IGMP	0 bps	6.71 Mbps	0 tps	339607	0.00 %	60	80
PM	0 bps	1.43 Mbps	0 tps	227859	0.00 %	72	72
IPv6	0 bps	0 bps	0 tps	0	0.00 %	0	0
Other	480 bps	12.78 Mbps	480 tps	4821666	0.00 %	60	633

Line	Status	Time	Location ID	Interface	Description
1	Cleared	Sep 21 08:22:15 - Sep 21 08:23:16	HEADEND_CORE_3750_CORE	Ethernet	IAT error SVT1
2	Cleared	Sep 21 05:56:15 - Sep 21 06:00:17	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
3	Cleared	Sep 21 05:47:15 - Sep 21 05:48:16	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
4	Cleared	Sep 21 05:36:15 - Sep 21 05:37:15	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
5	Cleared	Sep 21 05:26:15 - Sep 21 05:26:16	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
6	Cleared	Sep 21 05:14:16 - Sep 21 05:15:15	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
7	Cleared	Sep 21 05:06:16 - Sep 21 05:06:15	HEADEND_CORE_3750_CORE	Ethernet	IAT error TV2 SPORT 4
8	Cleared	Sep 21 05:03:18 - Sep 21 05:04:19	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
9	Cleared	Sep 21 04:53:15 - Sep 21 04:53:15	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON
10	Cleared	Sep 21 04:38:16 - Sep 21 04:40:15	HEADEND_CORE_3750_CORE	Ethernet	ETR not heap error NICELOOCON

Parameters	Setup										
<b>Joined multicasts</b>											
ID	Thumb	Name	Signal	Page	Mapping	Net bitrate	CC errs	Pids	Syncb errs	Curr bitrate	Min
1		NRK_1	38d	1	7TS/UDP	6.90 Mbps	104	7	0	6.90 Mbps	10.30
2		NRK_2	38d	1	7TS/UDP	7.05 Mbps	95	7	0	7.05 Mbps	10.10
3		TV2_NORWAY	38d	1	7TS/UDP	7.99 Mbps	14565	6	0	7.99 Mbps	9.22
4		TVNORGE	14d	1	7TS/UDP	5.26 Mbps	973	6	0	5.26 Mbps	8.97
5		SVT1	77d	1	7TS/UDP	4.42 Mbps	266172	8	0	4.42 Mbps	55.25
6		DR1	77d	1	7TS/UDP	5.47 Mbps	21836	8	0	5.47 Mbps	56.96
7		DR2	77d	1	7TS/RTP	2.36 Mbps	6120	8	0	2.36 Mbps	57.50
8		SVT2	77d	1	7TS/UDP	2.49 Mbps	267902	9	0	2.49 Mbps	57.50
9		NRK_3	38d	1	7TS/UDP	4.70 Mbps	94	7	0	4.70 Mbps	10.30

**MULTICAST/UNICAST MONITORING FEATURES**

- Monitor streams in UDP, RTP and L2TP transmissions
- Monitor current/min/max stream 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
- Microsoft MediaRoom™ X-bit RTP header extension support
- 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