VB330

APPLIANCE, SOFTWARE, HARDWARE

The VB330 Probe is the flagship in Bridge Technologies product offering towards broadband and media operators. With dual 10G Ethernet connectivity 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 deployed either on dedicated **embedded hardware**, as a pre-configured and pre-installed **appliance** or as a **software-only** solution. This gives the operator greater flexibility when it comes to tailoring the monitoring solution towards the underlying system architecture in the best possible manner. Feature parity is ensured across the various deployment options, varying only in factors such as scalability, power consumption and longevity. The web-based user experience and feature availability stays the same across all the deployment alternatives.

Technologies

Bridge Technologies options are designed to enhance the overall ability and performance of accurate monitoring in the broadcast environment

Click below to learn more about compatible technology options:

Eii™ ETR290™ Gold TS MediaWindow™ microBURST™ microETR™ OTT PCAP RDP

Environmental

Eurovironment RoHS WEEE

Chassis Options

EC EC-DC

Overview

VB330 APPLIANCE

The VB330 APPLIANCE runs on pre-selected platform and offers a scalable and future-proof high-end monitoring solution. The VB330 APPLIANCE is pre-loaded with software and fully tested at the factory prior to customer delivery. Standard product warranty of 24 months applies. The VB330 APPLIANCE comes with a dual 10/25/40/50/100Gbps NIC for video network connectivity. The VB330 appliance solution is supplied by BRIDGE Technologies and is characterised by the following main attributes: Intel Xeon Gold 6126 2.6 GHz CPU, 48GB DDR4 ECC RAM, 240GB solid state disk, Dual 10/25/40/50/100Gbps network interface card, dual PSU, custom-designed aluminium server front. The VB330 APPLIANCE server weighs ~15 kg, fits in a 1RU rack slot and has a depth of ~50 cm.

The VB330 running on the appliance server hardware is future proof in terms of scalability due to its massive parallel CPU resources and dual 100Gpbs network interface capabilities. No installation needed. The operator can start using the product immediately without having to spend time doing server installations.

VB330 SOFTWARE

The VB330 is also available as a Cent-OS/RHE install software image that can be installed on suitable server hardware or in cloud environments by the end user. This allows for installation onto already existing server or cloud-based infrastructure. Some consideration is required in order to match software driver capabilities against the infrastructure to run the VB330 on.

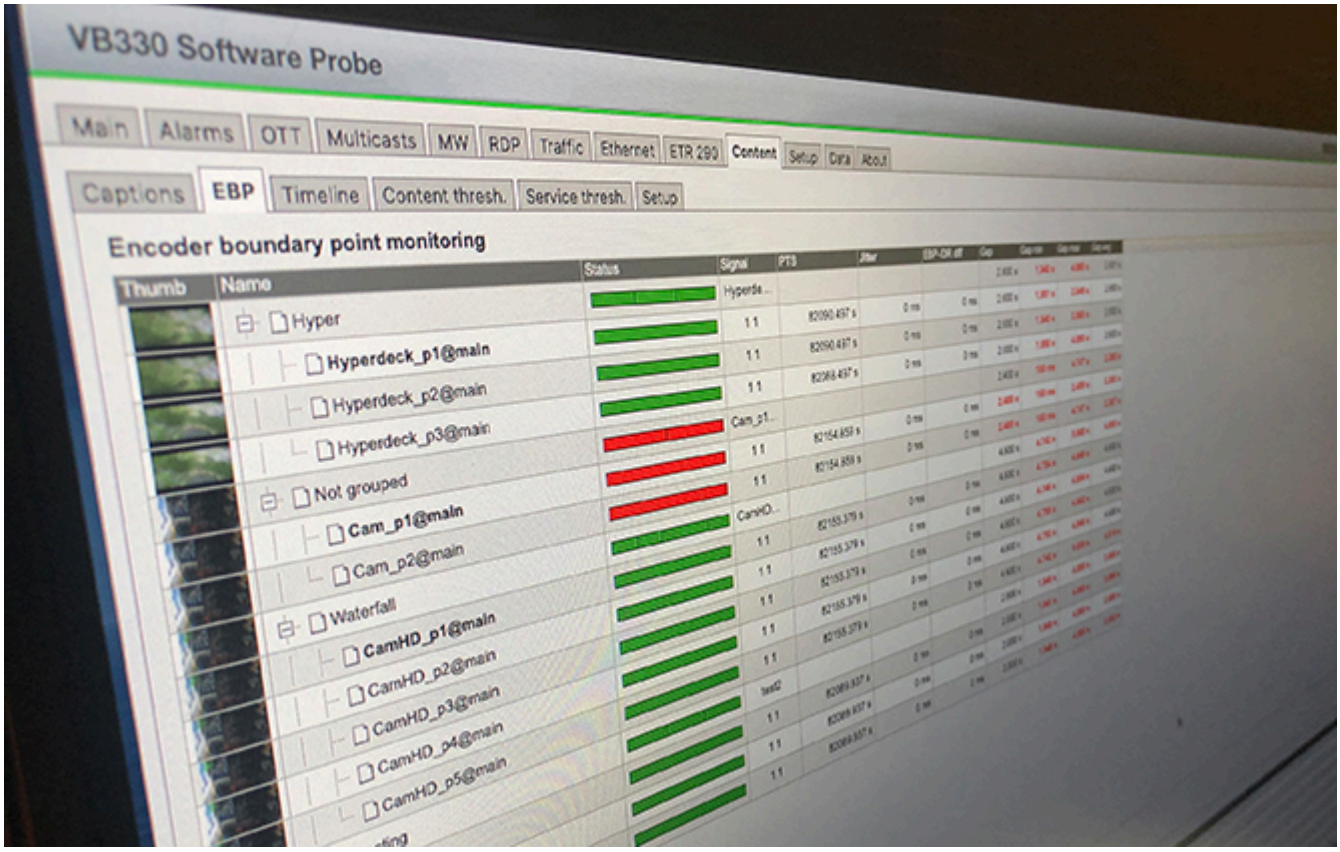
VB330 EMBEDDED HARDWARE

The VB330 utilises the same visual and intuitive approach to monitoring and analytics as other probes. The VB330 is aimed at monitoring the full cross section of services commonly found in media related network operations. As such the VB330 is very much a multi use tool to monitor 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.

REMOTE PHY/L2TP

VB330 comes with support for Remote PHY/L2TP, making it suitable for unpacking and monitoring the multicasts targeted towards the Remote PHY CCAP nodes. Remote PHY is an approach that literally takes the PHY chip out of a box and puts it at the end of an IP network. One of the philosophies of Remote PHY is to put the least amount of hardware and software at the endpoint and keep the complexity centralized. Remote PHY infers centralized DOCSIS software. This allows the same software model to be used for I-CCAP and Remote PHY CCAP. Remote PHY, I-CMTS, and M-CMTS can all coexist in the same chassis and use the same software base and configuration systems. This is a very powerful concept for feature velocity and backward compatibility. Remote PHY works and works well. The design of remote PHY is built on top of open standards such as Ethernet, IPv4, IPv6, L2TPv3, and CableLabs MHA. Remote PHY will allow CCAP devices to be deployed in more creative manners such as using digital fiber in the HFC plant. For cable operators, this will allow their network to have higher performance with lower OpEx, lower CapEx, and an evolutionary path for FTTH.

Tech Features



APPLIANCE – VB330 SW PROBE

- Feature parity to HW VB330
- Option equality and license equality
- Future proof for long life deployments
- Optimize Headend performance
- Unlimited profiles on channels
- CMAF (HLS and DASH) compliance
- Also legacy SmoothStream and RTMP
- (EBP) Encoder Boundary points monitoring and Analysis
- Downloads every chunk for analysis
- For DOCSIS 3.0 / 3.1 Networks
- Full ETR290 monitoring on all sub-streams
- Unprecedented capacity for large aggregation sites
- Alarming on data side, routing errors, signal loss
- Full ETR290 Analysis and alarming

- SCTE35 presence and alarming
- Gold TS Protection with alarming
- Advanced TS analytics with support for private tables

SOFTWARE – VB330 SW PROBE

- Feature parity to HW VB330
- Option equality and license equality
- Future proof for long life deployments
- Optimize Headend performance
- Install on standard Intel hardware
- Fully VMware and OpenStack compliant
- Deliverable as ISO installer or OVF image
- Thousands of streams in parallel
- MultiCore CPU utilisation architecture
- MediaWindow visualization of streams
- OTT Engine option w/HLS, HDS, Smooth Streaming, MPEG-DASH and RTMP
- ETR290 Engine Option with Gold TS Protection
- FEC analysis, Time-Loss-Distance, TOS, ICMP analysis
- Full Eii interfacing to 3rd party systems, Video IP multicast, video OTT/ABR streaming, video-on-demand unicast, PCAP recording and general traffic protocol inspection

*For minimum server requirements, please contact your representative

HARDWARE – VB330 10G PROBE

- Supports SPTS and MPTS monitoring – Continuous monitoring of up to 2000 SPTS IP Multicasts – For MPTS scalability please contact your representative
    - 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 appropriate
    - 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 2022-1 (Pro-MPEG COP3)
- 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 interface. HTTPS using TLS 1.1 and 1.2 with a self-signed certificate
- 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 uni/multicast IP transport streams
- ETSI TS 102 034 support
- 2 x SFP+ optical 10G ports
- 1 x 10/100/1000-T RJ45 Ethernet management port
- Microsoft mediaRoom X-bit RTP header extension support
- Alarm on changes to TOS/DSCP and TTL for detection of changes in network prioritization
- Time loss distance measurements according to RFC3357
- MediaWindow™ visualisation 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 RFC5905
- 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

ENVIRONMENTAL SPECIFICATIONS

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

CONNECTOR SPECIFICATIONS

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

POWER REQUIREMENTS

- Power dissipated per VB330 module 35W
- Chassis input voltage: 100-240VAC
- Chassis max. power requirement: 150VA@220VAC
- Chassis max. power dissipated: 150W

MECHANICAL SPECIFICATIONS

- Standard 19 1RU rack-mount
- W x H x D: 483 x 43 x 400 mm
- Weight: 8,2 kg fully populated

Software Options

VB33010G2-UPGR OPTION

Second input interface option. For VB330-HARDWARE it opens up the 2nd 10G port. For VB330-APPLIANCE and VB330-SOFTWARE it allows monitoring across more than one physical NIC and a maximum of 20Gbps

ETR290-OPTION (ETSI TR 101 290)

The ETSI TR 101 290 functionality is an option on the VB330. Full analysis is performed on Ethernet signals according to the industry standard ETSI TR 101 290. Multiple analysis engines are available as an option for Ethernet, allowing real-time ETSI TR 101 290 analysis for up to 8 Ethernet transport streams in parallel. The Bridge Technologies implementation provides operators with unparalleled input signal visibility. The probes can detect and trigger alarms for many of the common errors that would normally go unnoticed by conventional monitoring systems.

BULK-ETR290-OPTION (ETSI TR 101 290)

BulkETR290 is an option on the VB330. Full analysis is performed on Ethernet signals according to the industry standard ETSI TR 101 290. Multiple analysis engines are available as an option for Ethernet, allowing real-time ETSI TR 101 290 analysis for up to 400 Ethernet transport streams in parallel. Each Bulk option provides 100 ETR290 engines.

OTT ENGINE-OPTION

The use of OTT technologies like variable bit rate HLS, SmoothStream and HDS for distribution of media to all kinds of receiving platforms is rapidly expanding, portable devices used in multiscreen applications being particularly important for OTT deployment to be a preferred method for media signal delivery. Content distribution using OTT is complex, and it is necessary for a service provider to perform continuous surveillance of signal availability and integrity of both LIVE multi-profile streams and VOD content. The OTT Option provides the same paradigms as more traditional media transports enabling easy understanding of complex media transportation where operators have both traditional and new distribution systems. The OTT options, available for all Bridge Technologies probes, enables monitoring and analysis of HLS, SmoothStream, HDS and MPEG-DASH streams. The OTT engine will check that stream and profile manifest files, the «lists of contents», are syntactically correct and updated, that all stream profiles are available and that stream chunks are delivered on time.

BULK-OTT-OPTION

For the VB330 10G Probe there is a “bulk” option capable of up to 50 OTT engines in parallel with a

massive 500 channels analysed with all associated profiles. This provides astonishing capabilities to validate large numbers of LIVE streams provided to multiscreen services and/or VOD content critical to operation of services.

T2MI-OPTION

The T2MI option is used to enable analysis of inner streams in DVB-T2 distribution systems utilising T2MI functionality. Stream verification is based on the renowned Bridge Technologies ETSI TS 101 290 analysis engine, and the T2MI enabled probe allows a thorough check of outer and inner streams. The T2MI option makes it possible to design and implement an end-to-end monitoring system for DVB-T2 distribution. The T2MI option extends ETSI TS 101 290 analysis functionality of a Bridge Technologies probe to include inner streams in DVB-T2 distribution systems where T2MI functionality is used. The T2MI stream-in-stream concept opens for simplified local insertion and is increasingly being used in DVB-T2 distribution. Monitoring of signal integrity is essential, and the T2MI probe option makes it possible to check inner stream parameters, like T2 timestamps and L1 information. Measurements are performed real-time in accordance with DVB document A14-1.

CONTENT-OPTION

Offers content analysis in the form of QoE monitoring, thumbnail content archiving and timeline visualisation, MOS average alarming, VMAF scoring, freeze-frame/color-freeze detection and alarming, audio level and stereo phase monitoring, real-time loudness monitoring, closed captions extraction (CEA-608/CEA708). Allows for QoE and QoS for up to 1000 streams across OTT and multicast streams pending sufficiently scaled hardware.

SCTE35-OPTION

SCTE35 is a specification which allows equipment to splice in local content at specific times. SCTE35 is the signalling mechanism the equipment uses to know when to switch from the master transmission to insert local content and when to switch back. SCTE35 is used for two different reasons: In USA it is used to insert local advertising. It's quite common that local Cable TV companies redistribute satellite channels in their network. They can purchase the right to replace some of the country-wide advertising with local ads. In Europe it is used to insert local TV programs, e.g. local news transmissions. SCTE35 analysis requires a special license for the probes and is connected to the ETR290 engine. All streams where ETR290 monitoring are performed simultaneously can be SCTE35 monitored in parallel, i.e. this is a reason for buying VB330 if many SCTE35 streams are to be monitored in parallel. GUI: From the ETR 290 main tab a list of streams containing SCTE35 signalling are displayed under the SCTE 35 tab.

FLASH32-OPTION

The Flash32 feature is used as an added 32GB SD card, to be able to save RDP and PCAP recordings. RDP recordings are automatically moved to the SD card when completed, and PCAP recordings can be manually moved using the interface GUI as shown below. When in the storage tab, file system statistics are shown to the right and files can be downloaded by clicking its name.

IP-SWITCH-OPT (Harware version)

Ordering Codes

APPLIANCE and SOFTWARE ORDERING CODES

VB330-APPL – Appliance server assembled and pre-installed ready for use out of the box. Base capacity is up to 2000 multicasts and a total bandwidth capacity of 20Gbit/s

VB330- SW – Software based probe on server and cloud instances provided the underlying hardware is sufficiently dimensioned. (For server specs, please refer to user manual). Base capacity is up to 2000 multicasts and a total bandwidth capacity of 20Gbit/s

PRODUCT OPTION CODES APPL and SW

VB330-25Gx2-OPT – A new option turning the 20Gbit/s base version into a 50Gbit/s (dual 25Gbit/s) enhanced version. Summation is done across OTT and multicast

ETR290-OPT – ETSI TR 101 290. License for VB330, includes GoldTS, factory ordered

ETR290-UPGR –ETSI TR 101 290. License for VB330, includes GoldTS, upgrade

ETR290-200-OPT – ETR290-200-OPT enables concurrent TR 101 290 priority 1, 2 and 3 analysis on up to 200 streams. Two of these options can be enabled to give analysis on up to 400 streams

ETR290-1000-OPT – For the ultimate in parallel TR 101 290 analysis the ETR290-1000-OPT allows for concurrent priority 1, 2 and 3 analysis on up to 1000 streams

OTT-ENG-OPT – 1 engine w/active testing of up to 10 channels, factory ordered

OTT-ENG-UPGR – 1 engine w/active testing of up to 10 channels, upgrade

BULK-OTT-OPT – 25 engines w/ active testing of up to 250 channels, factory ordered

BULK-OTT-UPGR – 25 engines w/ active testing of up to 250 channels, upgrade

T2MI-OPT – DVB-T2MI Encapsulation Synchronisation monitoring option, factory ordered

T2MI-UPGR – DVB-T2MI Encapsulation Synchronisation monitoring option. Upgrade.

SCTE35-OPT – SCTE35 Signalling Analysis and Logging. Factory ordered. Requires v5 sw and ETR Engine

SCTE35-UPGR – SCTE35 Signalling Analysis and Logging. Upgrade. Requires v5 sw and ETR Engine

FLASH32-OPT – Flash Storage 32GB Option. Factory ordered – requires sw v5.1

FLASH32-UPGR – Flash Storage 32GB Option. Upgrade – requires sw v5.1

CONTENT-OPT – Offers content analysis in the form of QoE monitoring, black-frame/freezeframe alarming, audio loudness monitoring, thumbnail content archiving and timeline visualisation, SCTE-35 cue tone logging and alarming. Allows for QoE and QoS for up to 1000 streams. Across OTT and multicast streams. Pending sufficiently scaled hardware

VB330 EMBEDDED ORDERING CODE

VB330 – IP-Probe Blade w/1 active 10GigE SFP. NB: Requires EC

PRODUCT OPTION CODES VB330 EMBEDDED

VB33010G2-OPT – Additional 10G SFP+ input for VB330 probe, factory ordered

VB33010G2-UPGR – Additional 10G SFP+ input for VB330 probe, upgrade

ETR290-OPT – ETSI TR 101 290. License for VB330, includes GoldTS, factory ordered

ETR290-UPGR –ETSI TR 101 290. License for VB330, includes GoldTS, upgrade

ETR290-100-OPT – 100 engines with testing of ETSI TR 101 290, includes GoldTS, factory ordered

ETR290-100-UPGR – 100 engines with testing of ETSI TR 101 290, includes GoldTS, upgrade

OTT-ENG-OPT – 1 engine w/active testing of up to 10 channels, factory ordered

OTT-ENG-UPGR – 1 engine w/active testing of up to 10 channels, upgrade

BULK-OTT-OPT – 25 engines w/ active testing of up to 250 channels, factory ordered

BULK-OTT-UPGR – 25 engines w/ active testing of up to 250 channels, upgrade

T2MI-OPT – DVB-T2MI Encapsulation Synchronisation monitoring option, factory ordered

T2MI-UPGR – DVB-T2MI Encapsulation Synchronisation monitoring option. Upgrade.

SCTE35-OPT – SCTE35 Signalling Analysis and Logging. Factory ordered. Requires v5 sw and ETR Engine

SCTE35-UPGR – SCTE35 Signalling Analysis and Logging. Upgrade. Requires v5 sw and ETR Engine

FLASH32-OPT – Flash Storage 32GB Option. Factory ordered – requires sw v5.1

FLASH32-UPGR – Flash Storage 32GB Option. Upgrade – requires sw v5.1

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Documentation

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Software User Manual – Download

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