VB220 PROBE

The VB220 PROBE is the perfect choice in any network where digital video is carried across an IP-based infrastructure. Built specifically to high-end industry needs, this network service tool is ideal for both pure IP networks and hybrid networks with IP transport cores such as in digital cable and terrestrial networks.

Figure - A dual-PSU 1RU Enhanced Chassis populated with three VB220 modules.

The VB220 probe hardware is custom designed and built to telco-grade standards for maximum reliability and minimum maintenance. Each VB220 blade consumes less than 12W of power. This drastically cuts on power consumption and air conditioning needs in installations. The VB220 can be paired with a full set of interface blades to cover signal formats such as DVB-T/T2, DVB-S/S2, DVB-C/C2, QAM-B, 8VSB and ASI.

Monitor OTT/ABR streams at master play-out or at CDN origin server in all common streaming formats using the OTT option. Streaming formats supported currently include Microsoft Smoothstream™, Apple HLS™, Adobe HDS™, MPEG-DASH and basic RTMP.

A single VB220 blade is furthermore capable of monitoring up to 260 IP multicasts as found in FTTH IPTV systems. 3 x VB220 blades can be placed in one 19" 1RU chassis, giving a total of 780 streams monitored in a small form factor.

The VB220 is ideally suited for network core and region use. This is an invaluable helpmate for any network engineer attempting multicast detection on multiple VLANs or in the process of IGMP tracking. Fault finding in complex IP networks just got a lot easier.

The monitoring of critical parameters such as loss distance measurements and detailed jitter values will give operators invaluable and precise feedback of network performance. With the patented MEDIAWINDOW™ historical data can be easily accessed for meaningful visualisation of media flow in IP networks. Whether establishing or modifying service settings on complex routers and switches, the VB220 facilitates the whole process.

The power of confidence monitoring is further enhanced by continuous monitoring and alarming for vital parameters like bandwidth overflow/underflow, RTP errors and signal loss. Based on a highly sophisticated threshold template system alarm granularity can be set to reflect actual status, irrelevant alarms being effectively masked. The unique FSM™ framework also allows checking and continuous monitoring of middleware and network services vital to customer QoE.

The VB220 may be used with optional demodulator interfaces, resulting in a very compact monitoring solution particularly suited for systems that use IP distribution to regional nodes. The VB220 monitors IP, ASI and optional demodulator inputs simultaneously, and the transport stream and service compare mechanism makes it easy to validate correct local insertion at regional head-ends.

The VB220 can be expanded with the ETR290 option for full video monitoring and analysis functionality according to TS 101 290 as used in head-end and studio environments. SNMP trapping and XML export enable the IP-Probes to be implemented in any NMS system with alarm generation; either directly from the probes themselves, or via the VBC server for advanced alarm correlation and filtering. Each VB220 contains the Eii (External Integration Interface) API for seamless and easy integration into any 3rd party system.

Each IP-Probe runs an HTTP server with the client as a web browser, so no need to install custom software on computers needing access to the measurement data. The HTTP traffic is compressed between the probe and the client web browser to allow successful operation across limited bandwidth management networks.

TECHNICAL FEATURES

- 10/100/1000-T RJ45 Management port with Link and Activity LED indicators
- 10/100/1000-T RJ45 video port with Link and Activity LED indicators
- SFP gigE video port with Link and Activity LED indicators
- 75 ohm HD-BNC ASI input port with TS SYNC LED indicator
- 75 ohm HD-BNC ASI output port for monitoring purposes
- 50 ohm SMA female 1PPS input port for GPS synchronisation
- USB Type-A connector for initial setup
- Expansion blades available for common formats such as DVB-S/S2, DVB-C/C2, DVB-T/T2, QAM-B, 8VSB, ASI
- Parallel and continuous monitoring of up to 260 IP unicasts/multicasts according to ETSI TS 102 034:
  - 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
  - Delay Factor - time between IP frames
  - Source/destination MAC address
  - RTP dropped packets, duplicate packets, out-of-order packets
  - RTP max/min hole size, hole separation

OPTIONS INCLUDED

AET

SOFTWARE OPTIONS

ETR290 | T2MI | OTT | SCTE35

HARDWARE OPTIONS

VB242 | VB252 | VB252-SMA | VB262 | VB266 | VB272 | VB272-SMA | VB273

CHASSIS OPTION

ACC | DCC | EC | EC-DC

RELATED PRODUCTS

VBC

TECHNOLOGIES

MediaWindow | FSM | microETR | RDP | Eii | OTT-Engine

PHYSICAL AND ENVIRONMENTAL SPECIFICATIONS

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

CONNECTOR SPECIFICATIONS

- Input voltage: 100-240 VAC +/- 10% 50/60Hz
- Power consumption: 12W per blade
- 10/100/1000-T management RJ-45
- 10/100/1000-T Video RJ-45
- SFP Video
- Initial setup: USB Type-A
- HD-BNC 75ohm female ASI input
- HD-BNC 75ohm female ASI output loop through
- SMA female 50ohm 1PPS GPS input

MECHANICAL SPECIFICATIONS

- Standard 19" 1RU rack-mount
- W x H x D: 483 x 43 x 400 mm
- Weight: 4,2 kg fully populated

COMPLIANCE AND SAFETY

Compliant to requirements for US and Canada. Designed for CSA approval. Bridge Technologies continuously improves on products and reserves the right to modify the specifications without prior notice.

EMC: EN 55022I CISPR 22 Class A, EN 55024I CISPR 24, EN 61000-3-2/ IEC 61000-3-2, EN 61000-3-3/ IEC 61000-3-3, 47 CFR, Class B **SAFETY**: EN 60950-1, IEC 60950-1 Edition 2.0

ENVIRONMENTAL COMPLIANCE POLICY

Bridge Technologies co as is committed to fulfilling all statutory environmental requirements in accordance with the WEEE scheme.

In order to prevent the generation of hazardous waste, Bridge Technologies undertakes the responsibility for taking back and recycling electrical and electronic equipment.

This will provide incentives to design electrical and electronic equipment in an environmentally more efficient way which takes waste management aspects fully into account.

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- Forward Error Correction analysis according to MPTE 2022 / COP3

- MediaWindow™ visualisation technology for trending packet loss, bandwidth and jitter over up to 4 days
- Thumbnail decoding of uni/multicast IP transport streams with audio bars and metadata
- Full Service Monitoring of up to 10 network devices via built-in ICMP and HTTP query agents
- Framework called RDP for relaying any IP multicast monitored to a different IP destination for further analysis
- Functionality for record 200MB of the whole or parts of any transport stream monitored (RDP framework)
- Automatic record trigger based on up to 3 configured alarm criteria with pre fill in order to catch fault
- Framework for automatic detection of present multicast/unicast streams
- Protocol hierarchy view with bandwidth and packet count statistics for video interface
- 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 leve
- History graphs from last 4 days of NoSignal, CC-errors, RTP-drops, RTP-duplicates, RTP-Out-of-order, Total interface bitrate, Monitored bitrate, Ethernet CRC frame errors
- One ETR290 engine automatically activated per RF/ASI input port on interface modules
- IEEE 802.1Q VLAN tagging support
- 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
- 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
- Tightly integrated with VideoBRIDGE Controller (VBC)
- XML-based configuration save and retrieval via web
- Powerful and openly available XML-based External Integratoin Interface (Eii) for 3rd party integration
- Condensed mosaic thumbnail view of all services monitored

ETSI TR 101 290 OPTION FUNCTIONALITY

- Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3), one transport stream per input monitored in parallel
- Configurable round-robin functionality for each ETSI TR 101 290 analysis engine
- Conforms to both DVB and ATSC specifications
- Table and descriptor parsing of PSI/SI and PSIP presented as table summary and full table breakdown (including hex dump)
- EPG analysis (EIT p/f and schedule)
- Bitrate monitoring and alarming (TS, service and PID level)
- Monitoring of vital CA parameters
- Compare view for comparison of transport streams and services across different interfaces
- Sophisticated threshold template system for detailed alarm handling control at transport stream, service and component level
- Monitoring of demodulator parameters (demodulator option)
- Scheduled alarm masking
- Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3) on the ASI input
- Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3) on one IP multicast
- Expand with 3 additional ETR290 engines for concurrent ETSI TR 101 290 analysis of a total of 4 IP multicasts

PRODUCT ORDERING CODES RF INTERFACE

VB242	ASI high-density input blade
VB252	DVB-T/T2 Demodulator interface blade single RF input
VB252-SMA	DVB-T/T2 Demodulator interface blade single RF input - 50 ohm SMA connector model
VB262	DVB-C QAM/8VSB/Analogue Demodulator Interface blade single RF input - ITU.T J83 Annex A/B/C
VB266	DVB-C/C2 QAM Demodulator Interface blade single RF input
VB272	DVB-S/S2 Demodulator Interface Blade single RF input
VB272-SMA	DVB-S/S2 Demodulator Interface Blade single RF input - 50 ohm SMA connector model

PRODUCT ORDERING CODES SOFTWARE

ETR290-OPT	ETSI TR 101 290. Licence for VB220 factory ordered
ETR290-UPGR	ETSI TR 101 290. Upgrade licence VB220
T2MI-OPT	DVB-T2MI Encapsulation Synchronisation monitoring option, factory ordered
T2MI-UPGR	DVB-T2MI Encapsulation Synchronisation monitoring option
OTT-ENG-OPT	1 engine w/active testing of 1 channel or 10 channels round robin (up to 5 engines or 50 channels round robin in total) Factory ordered. Disables TS Recording if HW1 - HW3
OTT-ENG-UPGR	1 engine w/active testing of 1 channel or 10 channels round robin (up to 5 engines or 50 channels round robin in total). Disables TS Recording if HW1 - HW3
SCTE35-OPT	SCTE35 Signaling Analysis and Logging. Licence for VB12/VB120 factory ordered - requires v5 sw and ETR Engine
SCTE-UPGR	SCTE35 Signaling Analysis and Logging. Upgrade licence for VB12/VB120 - requires v5 sw and ETR Engine