

IP Core Monitoring Blade

VB220



OVERVIEW

The VB220 IP-PROBE is a monitoring platform for all applications in any network where digital video is carried across an IP infrastructure. This network service tool is ideal for both pure IPTV networks and hybrid networks with IP transport cores (such as digital cable and terrestrial networks).

The ability to monitor continuously 260 services makes the VB220 blade just as powerful as its portable version, the VB20. 3 x VB220 blades can be placed in one 19" 1RU chassis, giving a total of 780 streams monitored in a small form factor. This is an invaluable tool for any network engineer attempting multicast detection on multiple VLANs or in the process of IGMP tracking.

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 visualization of media flow in IP networks.

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 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.

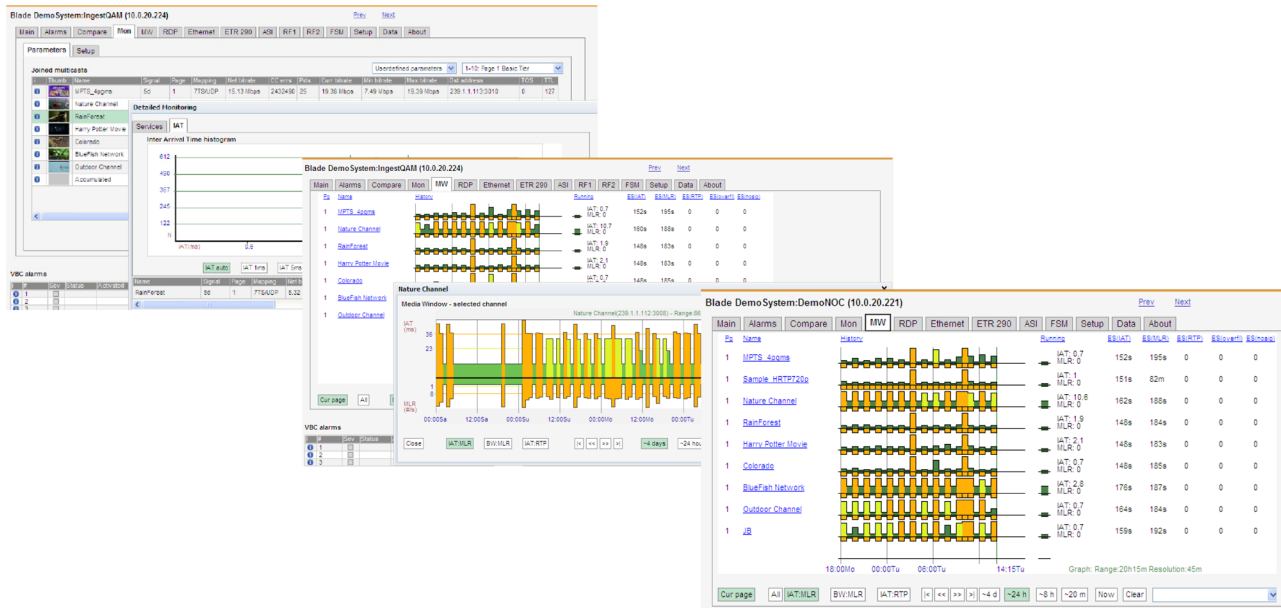
SNMP trapping and XML export enable the IP-Probes to be implemented in any NMS system with alarm generation; either directly from the probes themselves, or via the VBC server for advanced alarm correlation and filtering. Each VB220 contains the Eii (External Integration Interface) API for seamless and easy integration into any 3rd party system.

KEY FEATURES

- 10/100/1000-T RJ45 Management & Video ports
- SFP GigE video port
- 75 ohm HD-BNC ASI input port
- 75 ohm HD-BNC ASI output port for monitoring purposes
- 50 ohm SMA female 1PPS input port for GPS synchronization
- 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 & 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
 - Forward Error Correction analysis (SMPT2022 / COP3)
- MediaWindow™ visualization technology for trending packet loss, bandwidth, and jitter for 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 recording 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 level
- 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 (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 Integration Interface (Eii) for 3rd party integration
- Gold TS Protection™
- Condensed mosaic thumbnail view of all services monitored

SPECIFICATIONS

IP Core Monitoring Blade VB220



IP MONITORING AND ANALYSIS

- Real-time monitoring of up to 260 multicasts/unicasts
- Monitors Transport Stream in IP according to ETSI TS 102 034
- MediaWindow patented intuitive GUI for ease of system overview
- Microsoft MediaRoom™ X-bit RTP header extension support
- Compatible with Cisco™ VAMS/CMM IGMPv2 and IGMPv3 SSM support
- Thumbnail decoding of MPEG2 and MPEG4 streams, SD and HD
- Packet jitter and media loss measurements
- Configurable alarm handling including severity level definitions
- RTP dropped, duplicate and out-of-order measurements
- Type of Service (TOS) and Time to Live (TTL) displaying
- Time loss distance measurements (RFC3357)
- FEC analysis (COP3) MediaWindow™ visualization technology

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)
- 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)

DVB-T2 ENCAPSULATION MONITORING OPTION

- T2-MI encapsulation breakdown and analysis
- ETSI TR 101 290 analysis of outer and inner streams

TRAFFIC MODULE OPTION

- Detailed traffic protocol breakdown
- Traffic graphing

OTT/ABR MONITORING OPTION

- Monitor up to 50 HLS, Smooth Streaming, HDS, MPEG-DASH and RTMP Streams

CONNECTOR SPECIFICATIONS

- 10/100/1000 Ethernet video input: RJ-45
- 10/100/1000 Ethernet management: RJ-45
- Optical IP video input: SFP module
- ASI input: 75 ohm HD-BNC, female
- ASI output: 75 ohm HD-BNC, female
- SMA female 50ohm 1PPS GPS input
- Initial setup port: USB Type A

POWER SUPPLY REQUIREMENTS

- Input voltage: 100 to 240V AC
- Power required: 2+ VA
- Power dissipated: Maximum 50W

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: 9.3 lbs (4.2 kg) VB200 chassis, fully populated

ENVIRONMENT SPECIFICATIONS

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