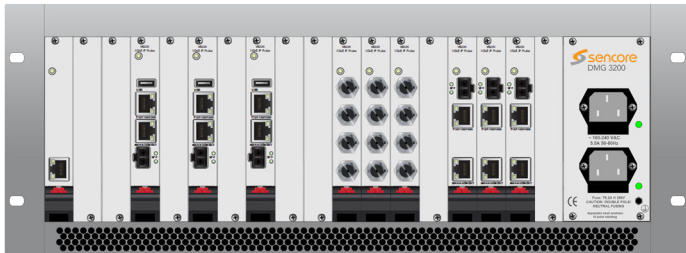
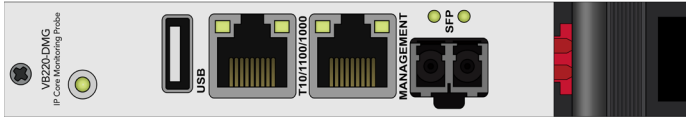


# IP Core Monitoring Blade

VB220-DMG



## OVERVIEW

The VB220-DMG blade is similar to the flagship VB220 controller blade for all applications in any network where digital video is carried across an IP infrastructure. Built with a form factor for deployment in Sencore's Digital Media Gateway chassis, the VB220-DMG has the unique capability of reducing the infrastructure needs and costs in situations where the customer is deploying or has already deployed the Sencore DMG platform.

The VB220-DMG fully has the same IP monitoring capabilities as the standard VB220 and thus it can be a critical tool for monitoring digital video that is carried across an IP infrastructure. This network service device is ideal for pure IPTV networks, OTT delivery networks, and hybrid RF networks with IP transport cores (such as digital cable and terrestrial networks).

The ability to simultaneously monitor 260 IPTV services makes the VB220-DMG blade an incredibly powerful tool for any network engineer. With optional add-on licenses, the VB220-DMG can monitor OTT/ABR streams at master play-out or at the CDN origin server in all common streaming formats including Microsoft Smoothstream™, Apple HLS™, Adobe HDS™, MPEG-DASH and basic RTMP.

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 MEDIWINDOW™ 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 highly sophisticated threshold template system alarm granularity can be set to reflect actual status with irrelevant alarms being effectively masked. The VB220 can also be expanded with ETR 101-290 capabilities for full transport stream fault detection. Finally, the unique FSM™ framework also allows checking and continuous monitoring of middleware and network services vital to customer QoE.

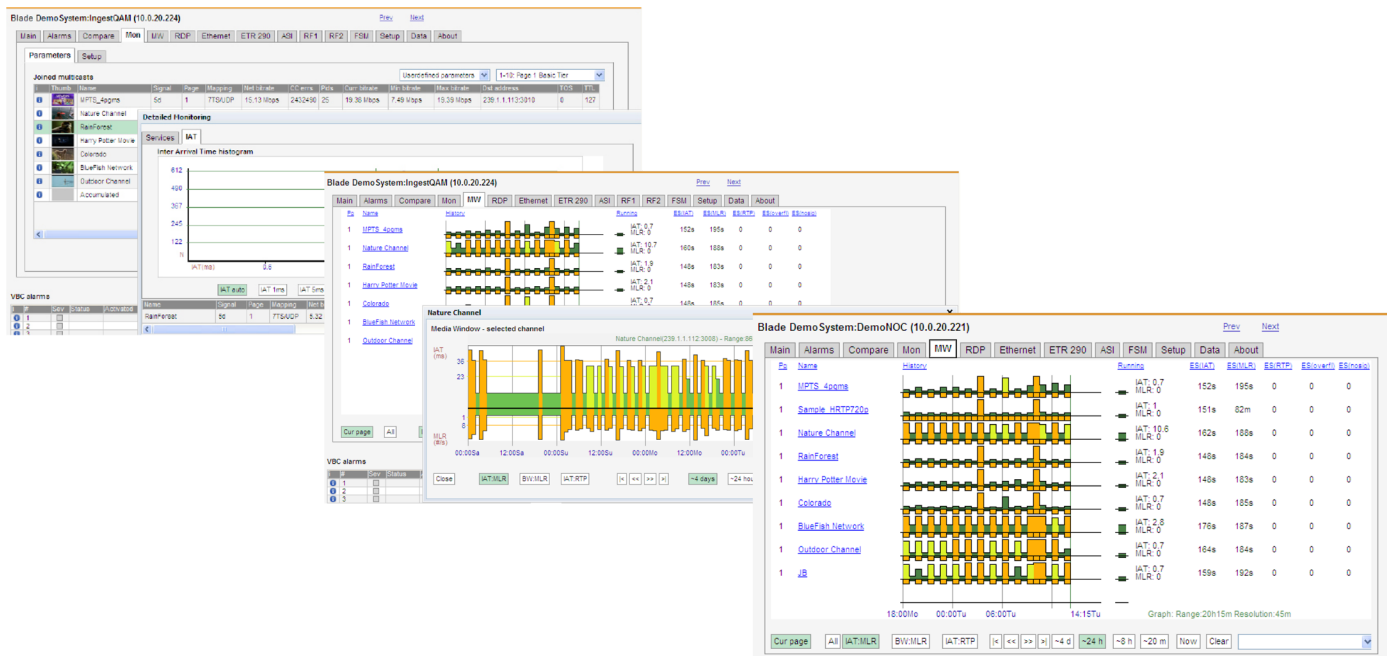
Each VB220-DMG runs an HTTP server with the client as a web browser, so no need to install custom software on computers needing access to the measurement data. Users can pull results directly from the blade itself or connect via the VideoBRIDGE Controller server for advanced alarm correlation and filtering. SNMP traps and the Eii (External Integration Interface) XML API allow the blade to be easily integrated into any NMS or 3rd party system.

## KEY FEATURES

- 10/100/1000-T RJ45 Management port
- 10/100/1000-T RJ45 video port
- SFP GigE video port
- USB Type-A connector for initial setup
- 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
  - Forward Error Correction analysis according to SMPTE 2022 / COP3
- MediaWindow™ visualization 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 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 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 Integration Interface (Eii) for 3rd party integration
- Gold TS Protection™
- Condensed mosaic thumbnail view of all services monitored

# SPECIFICATIONS

## IP Core Monitoring Blade VB220



### ENVIRONMENT SPECIFICATIONS

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

### CONNECTOR SPECIFICATIONS

10/100/1000 Ethernet video input: ..... RJ-45  
10/100/1000 Ethernet management: ..... RJ-45  
Optical IP video input: ..... SFP module  
Initial setup port: ..... USB Type A

### POWER SUPPLY REQUIREMENTS

Determined by DMG Chassis Specifications

### 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