VB120 BROADCAST PROBE

The VB120 BROADCAST PROBE offers cost-effective and powerful monitoring in any broadcast operations involving most commonly available signal formats. In particular the VB120 is capable of monitoring IP unicasts and multicasts, OTT/ABR streams as well as a whole range of RF formats. Its modular concept provides the flexibility needed for a cost-effective surveillance system tailor-made for each operator. System scalability in terms of monitoring capacity, signal formats handled and functionality ensures a future-proof solution, an invaluable asset in an ever changing world.

Figure - the dual PSU redundant 1RU Enhanced Chassis populated with 3 VB120 blades

The VB120 probe hardware is custom designed and built to telco-grade standards for maximum reliability and minimum maintenance. Each VB120 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.

The ability to continuously measure all your media services makes the VB120 invaluable for confidence monitoring, thus facilitating a more rapid network expansion. In addition the VB120 can do deep analysis of the broadcast signal reducing the need to travel to remote locations when changes in the system is done or to find the reason behind alarms.

The VB120 BROADCAST PROBE comprises a fully fledged ETSI TR 101 290 monitoring engine used to monitor enabled inputs, one monitoring engine per input working in parallel. The basic VB120 monitors DVB ASI, IP monitoring is enabled through the IP Monitoring and Analysis option and RF inputs may be included by adding demodulator blades to the system.

Each Bridgetech ETSI TR 101 290 engine performs Priority 1, 2 and 3 measurements in addition to monitoring vital CA parameters, CA monitoring being of vital importance as CAS errors may lead to equally severe impairments as ETSI TR 101 290 Priority 1 errors. The monitoring engine may also be configured to check signal scrambling. PSI/SI and PSIP tables are analysed and presented as table summary and hex dump, the latter enabling analysis of proprietary descriptors.

Bit-rates are measured at TS, service and PID level, and the ETSI TR 101 290 engine also monitors RF parameters for optional demodulator inputs. Fully configurable round-robin functionality enables sequential monitoring of several transport streams per monitoring engine. More details in the ETR290 pages.

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.

The innovative RDP technology (Return Data Path) that comes as standard on the VB120 enables easy re-routing of remote signals from regional locations into a central location for decryption and advanced signal analysis. RDP reduces the need for truck rolls and otherwise necessary on-site visits by skilled and expensive engineers. The VB120 recording functionality allows alarm triggered or manually initiated recordings from any enabled input.

The VB120 has been designed to support all modern encapsulation standards including ISO/IEC13818-1 Transport Streams and MFRTP. The VB120 continuously measures signal loss, packet loss and packet jitter. These vital parameters are presented through Bridgetech's own patented MediaWindow™ technology. MediaWindow™ allows for current and historical data to be displayed in an intuitive and visual way for easy understanding of the media flows in an IP network.

Alarm handling is one of the main tasks of the VB120 BROADCAST PROBE, and all measurements are checked against user defined thresholds for alarm generation. A sophisticated threshold template system gives the user full alarm handling control at probe, TS, service and PID level, ensuring that only relevant alarms are displayed.

Management and control for the basic VB120 is available through a separate 10/100/1000-T Ethernet interface, the IP-enabled VB120 may alternatively be managed in-band through the 10/100/1000-T video interface or through the SFP video interface. Standalone access is achieved through the use of any standard modern web browser, avoiding the need for a dedicated client application.

With SNMP trapping and the comprehensive Eii™ (External Integration Interface) XML export the VB120 BROADCAST PROBE is easily integrated into existing NMS systems either directly or through the optional VBC Controller Server (VBC).

⊞ 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
- Thumbnail decoding of uni/multicast IP transport streams with audio bars and metadata
- 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
- Flexible template based alarming system to allow custom configuration of what parameters result in an alarm being generated on a per-TS level
- 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
- XML-based configuration save and retrieval via web

OPTIONS INCLUDED

ETR290

SOFTWARE OPTIONS

IP | AET | AEO | ETR290 | BULK-ETR290 | STRM | T2MI
OTT | SCTE35 | FLASH32 | VB1G2

HARDWARE OPTIONS

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

CHASSIS OPTION

ACC | DCC | EC | EC-DC

RELATED PRODUCTS

VBC

TECHNOLOGIES

MEDIAWINDOW | FSM | MICROETR | RDP | EII | OTT
GOLDTS

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 SPESIFICATIONS

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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- ETR290 monitoring and analysis on ASI input port
- One ETR290 engine automatically activated per interface module present in chassis controlled by VB120 (two engines automatically activated for VB242 ASI input blade)
- Full DVB and ATSC table support
- PSI/SI/PSIP table display - high and low level including hex dump and table download
- Analysis of EIT p/f and EIT Schedule
- MIP table analysis according to TR 101 190 and TR 101 191
- Unique tests designed by BRIDGE Technologies relevant to Conditional Access systems
- ETR290 engine automatically activated per RF/ASI input port present on expansion modules
- TS 101 290 analysis functionality on all IP multicasts in either round-robin fashion across all monitored IP multicasts or continuously on all monitored IP multicasts
  - All Priority 1 tests (TS sync, Sync byte, PAT, CC, PMT, Missing PID)
  - All Priority 2 tests except Buffer Fill (Transport, CRC, PCR, PCR acc., PTS, CAT)
  - All Priority 3 tests (NIT, SI rep rate, Unref PID, SDT, EIT, RST, TDT)
  - Custom tests (CA system, PID bitrates, Service bitrates, MIP, Content)
- Framework for monitoring and alarming on max/min service bandwidth
- Framework for monitoring and alarming on max/min PID bandwidth
- Visual tree representation of all PSI/SI tables with drill-down functionality
- PID overview
- Service overview
- PCR Accuracy (PCR-AC) jitter histogram for selectable PIDs
- Intuitive bitrate overview - service and PID based
- Comparison framework where a visual comparison between two transport streams or two services is possible in terms of ETR290 parameters and table set
- Transport stream service status view with visual colour coded indication of problem areas
- TR 101 290 alarm trending graph over last 24 hours
- 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

IP MONITORING AND ANALYSIS OPTION
- Real-time monitoring of 10 multicasts/unicasts (upgradable to 50)
- Monitors Transport Stream into IP according to ETSI TS 102 034
- Microsoft MediaRoom™ X-bit RTP header extension support
- IGMPv2 and IGMPv3 SSM support
- 802.1Q VLAN tagging support, selection and detection
- 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™ visualisation technology

ADVANCED ETHERNET TOOLS OPTION
- FSM™ monitoring of middleware or gateway services
- IGMP monitoring, analysis and logging

ADDITIONAL ETSI TR 101 290 MONITORING ENGINE OPTION
- Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3) for additional Ethernet transport streams in parallel

ADDITIONAL IP-STREAMS (UP TO 50)
- Real-time monitoring of IP multicasts/unicasts in steps of 10 can be upgraded to support 50 transport streams in parallel

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

VB1G2-OPT	Second 1GBit DATA interface Option. License factory ordered - requires sw v5.1 or later
VB1G2-UPGR	Second 1GBit DATA interface Option. License upgrade - requires v5.1 sw or later
IP-OPT	IP Monitoring and analysis. Licence for VB120 factory ordered
IP-UPGR	IP Monitoring and analysis. Upgrade licence for VB120
AET-OPT	Advanced Ethernet Tools. Licence for VB12/VB120 factory ordered
AET-UPGR	Advanced Ethernet Tools. Upgrade licence for VB12/VB120
ETR290-OPT	Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3) for additional Ethernet transport streams in parallel, facgtory ordered
ETR290-UPGR	Full real-time ETSI TR 101 290 alarming and analysis (Pri 1, 2, 3) for additional Ethernet transport streams in parallel, upgrade licence
STRM-OPT	Additional 10 streams for VB1 series Probe (up to 50 streams total) factory ordered
STRM-UPGR	Additional 10 streams for VB1 series Probe (up to 50 streams total)
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), upgrade. 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
SCTE35-UPGR	SCTE35 Signaling Analysis and Logging. Upgrade licence for VB12/VB120 - requires v5 Sw and ETR Engine
FLASH32	Flash Storage 32GB Option. Factory ordered only - requires software v5.1 or later