

## VB12-RF PORTABLE BROADCAST PROBE

The VB12-RF covers all the monitoring needs encountered in hybrid IP multicast, OTT and RF networks. The unit is particularly suited for use in FTTH IP multicast scenarios or at regional points of presence in cable architectures where IP and QAM is encountered. The VB12-RF has further use in ATSC terrestrial networks where 8VSB is used as modulation method.

Further to this the VB12-RF comes with powerful functionality for monitoring OTT streaming formats such as Microsoft Smoothstream, Apple HLS, Adobe HDS and MPEG-DASH making it ideally suited for also inspecting these new modern formats of ever increasing relevance to anybody involved in television distribution.



Figure - The VB12-RF is portable and ideally suited for fault finding video issues in IP multicast, OTT and QAM networks

The VB12-RF understands SCTE-35 digital queue tones as used in local program insertion architectures and will log and analyse signals carrying this type of signalling.

The included T2MI functionality offers T2MI protocol monitoring and analysis and is of use in DVB-T2 scenarios.

The protocol analysis is available on the IP and the ASI input interfaces.

The VB12-RF interfaces are Gigabit Ethernet, ASI and QAM/VSB RF inputs as well as a separate Gigabit Ethernet management interface for easy connection to either a laptop or the management network.

There is also an SMA input for 1PPS timing reception as used in DVB-T2/T2MI scenarios.

Common for all input formats is the ETSI TR 101 290 analysis. Priority 1, 2 and 3 analysis is performed, with the addition of a number of useful checks defined by Bridgetech. PSI/SI or PSIP is parsed and the result displayed as a high level information tree, with the possibility of detailed examination (hex dump).

The VB12-RF is also capable of extracting thumbnails from any of the input streams. It is possible to make a recording of a service, or it can be forwarded to a remote destination via the Ethernet data or management port for further content analysis. Innovative functionality makes it possible to directly compare signals across different probe interfaces.

RF specific parameters are measured and analysed, and alarms are raised if measurements are not within user-specified limits. Measurements include MER, SNR, BER and signal level. A QAM/VSB constellation diagram is displayed to visualise symbol integrity.

### DEFAULT FEATURES

The VB12-RF comes pre-configured from the factory with the following options already included:

- IP-OPT for multicast monitoring of up to 10 IP multicasts
- ETR290-OPT for TR 101 290 analysis on IP (one engine), ASI and QAM input
- AET-OPT for Advanced Ethernet Tools functionality
- T2MI-OPT for T2MI protocol analysis as needed in DVB-T2 networks
- OTT-OPT for OTT monitoring and analysis of SmoothStream, HLS, HDS and M-DASH
- SCTE35-OPT for digital cue tone logging and analysis

It is possible to further enhance the unit through additional options. These are:

- ETR290-OPT for additional concurrent ETR290 analysis on the IP input (up to 3 additional ETR290-OPT can be fitted)
- STRM-OPT for additional concurrent monitoring of IP multicasts (up to 4 additional STRM-OPT can be fitted for a total of 50 IP multicasts)

The list of default features offered by the VB12-RF include

- 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
- 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
- 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

### OPTIONS INCLUDED

IP ETR290 AET T2MI OTT SCTE35

### SOFTWARE OPTIONS

STRM ETR290

### RELATED PRODUCTS

VBC

### TECHNOLOGIES

MediaWindow microETR RDP Eit ETR290 OTT  
DVB-C

### PHYSICAL AND ENVIRONMENTAL SPECIFICATIONS

Operating temperature: 0°C to 45°C

Storage temperature: -20°C to 70°C

Operation humidity: 5% to 95% non-condensing

### CONNECTOR SPECIFICATIONS

10/100/1000-T GigE input: RJ-45

10/100/1000-T Ethernet management: RJ-45

SFP for optical networks

ASI input: 75 ohm HD-BNC

ASI output: 75 ohm HD-BNC

Serial port: USB Type A connector

AC power: IEC 320 connector

### POWER SUPPLY REQUIREMENTS

Input voltage: 100 to 240V AC

Power required: 20 VA

Power dissipated: maximum 20W

### MECHANICAL SPECIFICATIONS

W x H x D = 115 x 56 x 385 mm

Weight: 1,5 kg

### 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 55022/1 CISPR 22 Class A, EN 55024/1 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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- 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
- Condensed mosaic thumbnail view of all services monitored

#### QAM/VSB FEATURES

- One RF input for QAM/VSB signals (Type F, 75 ohm)
- Round-robin operation for scanning up to 50 frequencies
- Fully compliant to ETS 300 249
- ITU-T J.83 Annex A, B and C compliant
- QAM modes: 16, 32, 64, 128, 256
- Wide symbol rate range (0,87 to 7.0 MS/s)
- Excellent neighbour channel isolation
- Pre/post-FEC BER, SNR, MER, Level
- Symbol offset, frequency offset
- Spectrum inversion
- Constellation diagram
- FCC VSB ready for DTT
- VSB modes: 8VSB

#### PRODUCT ORDERING CODE

VB12-RF      Ruggedised portable IP/ASI/QAM probe. 10/100/1000-T or SFP GigEthernet. ASI in/out. Built in ETSI TR 101 290 Analysis and IP Monitoring/analysis. AET-OPT and OTT Engine as default.

#### PRODUCT ORDERING CODES SOFTWARE

STRM-OPT      Adds 10 additional multicasts for max 50 multicasts (4 additional STR-OPT)

ETR290-OPT    One additional ETR290 engine. A VB12-RF can have a total of 8 ETR290 engines.