VB273 SATELLITE UPLINK REDUNDANCY SOLUTION IF and L-BAND

The VB273 INTELLIGENT REDUNDANCY SWITCH provides full dual path redundancy for satellite signals with autonomous operation and deep signal analysis on both signal paths for the ultimate switching decision making. The solution is ideal for providing fast and robust redundancy switching for permanently installed satellite up-links or in outside broadcast systems.

Front panel controls with illuminated buttons offer local override control and a clear visual indication of the active switching path. The redundancy switch offers three distinct modes of operation making it suitable for any real-life operational challenges. These are Automatic mode, Manual mode and SuperLocal mode.

Pictured is a complete VB273 system with a VB120 controller, 10/100/1000-T management interface, USB-RS232 for initial setup and a VB272-SMA DVB-S/S2 blade with a VB273 SWITCH blade in a 1"RU EC Redundant AC powered chassis. This configuration only use 25W of power giving additional OPEX savings.
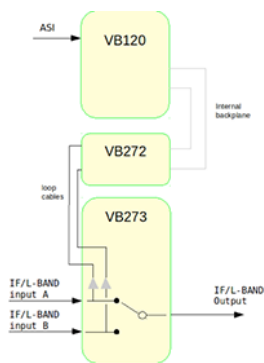

Figure - Simplified block diagram showing signal flow within the 2:1 redundancy switcher

The VB273 has multiple layers of redundancy. The 1RU chassis offers dual redundant power supplies and the VB273 switching card has magnetically latching relays to protect against signal disruption even during a complete loss of power.

The VB273 switch module actively taps off a small portion of the input signal from both inputs, converts it to L-band if required, amplifies it and then feeds it to the neighbouring VB272 DVB-S/S2 input module via two factory fitted loop cables. This allows monitoring and analysis to take place on both inputs simultaneously.

If any problem in any parameter is detected preset rules apply and the unit will check the opposite input for the same failure and perform a switch if no failure is detected.

To avoid switch flapping a minimum switchback time can optionally be configured. All the parameters in the implementation of the TS 101 290 specification can be utilised as switching criteria.

In automatic mode the VB273 system is fully independent and makes its own switching decisions based on the preset switching rules. In manual mode the unit can be controlled from any overlying NMS system via the extensive XML-based Eii (External Integration Interface) or via SNMP triggers.

The VB273 also features a unique superLocal mode feature to deliberately cut off overlying NMS control for emergency manual override situations via the front button panel. All parameters can be controlled via the built-in web GUI. The web GUI also gives a visual overview of parameters used in switch decisions and system status.

The VB120 blade offers a bonus ASI input port with TS 101 290 analysis support that can be used for ad-hoc monitoring in addition to the two main ASI input ports used on the VB242 blade should the need arise.

The hardware is custom designed and built to telco-grade standards for maximum reliability and minimum maintenance. The complete redundancy solution consumes less than 25W of power. This drastically cuts on power consumption and air conditioning needs in installations.

📑 TECHNICAL FEATURES

- 2:1 redundancy switching functionality based on built-in monitoring of incoming satellite signals
- Monitoring feature set of VB120 included making this a switch and a probe combined into one
- Supports 70/140MHz IF (VB273) and 950-2150MHz L-band (VB273-LBAND)
- IF signal inputs: 75 ohm female BNC
- IF signal output: 75 ohm female BNC
- L-BAND signal inputs: 50 ohm female SMA
- L-BAND signal output: 50 ohm female SMA
- Three-stage button logic supporting 3 distinct modes: Manual, Auto, Super Local
- Robust bistable RF relays ensures state is preserved even in the event of a power loss
- Passive loop through so that signal is passed even if no power on unit
- Capable of receiving DVB-S/S2 QPSK, DVB-S2 8PSK, DVB-S2 16APSK, DVB-S2 32APSK
- Continuously monitor and switch on all TR 101 290 priority 1, 2 and 3 parameters (except Buffer Fill)
- Possibility to customise alarming and switching template on all parameters
- Independent alarm template and redundancy switching template to allow a parameter to be alarmed on while at the same time not resulting in a redundancy switch
- Filtering capabilities on switching criteria to prevent short glitches to trigger a redundancy switch
- Continuously monitor and switch on RF parameters:
  - Channel power RF level
  - Modulation Error Rate (MER) in dB
  - Signal to Noise Rate (SNR) in dB
  - Error Vector Magnitude (EVM) in% and in dB
  - BER pre Viterbi (for DVB-S)
  - BER post Viterbi (for DVB-S)
  - BER post LDPC-BCH (for DVB-S2)
  - RS Packet Error Count
  - Carrier frequency offset

RELATED PRODUCTS

VB120 VB272-SMA

CHASSIS OPTION

ACC DCC EC EC-DC

TECHNOLOGIES

Eii ETR290 DiSEqC1.2 DVB-S/S2

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

POWER SUPPLY REQUIREMENTS

Input voltage: 100 to 240V AC

Power required: 15VA

Power dissipated: maximum 5W

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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Bridge Technologies Co AS,
Address: Bentsebrugata 20, NO-0476 Oslo, Norway.
Phone: +47 22 38 51 00. Web: www.bridgetech.tv
VAT NO987002808MVA, DUNS: 7303 64945

- Symbol rate offset
- PID analysis, Service analysis, bandwidth overview, PSI/SI/PSIP table analysis
- Automatic or manual TS recording of up to 200MB for recording fault that triggered redundancy switch
- Thumbnail extraction with audio bars and meta data
- Configurable alarm severity level
- PSIP support (ATSCA/78)
- Exportable logs
- Management port: 10/100/1000-T
- Video ports for RDP relay: 10/100/1000-T and SFP
- Condensed mosaic thumbnail view of all services monitored

PRODUCT ORDERING CODE

VB273-SAT-switch	Satellite Redundancy Switch System - EC/VB120/VB272-SMA/VB272-RF-OPT/VB273/SWITCH-OPT
VB272-SMA	DVB-S/S2 Demodulator Interface Blade single RF input. 50 ohm SMA connector model