AVDT-BOB Overview

The AVDT-BOB is a compact multipurpose Dante™ break out box. The AVDT-BOB has, depending on the version, 2 or 4 mic / line and 2 or 4 analog outputs and 4 input channels and 4 output channels over Dante.

Embedded Ultimo Dante processor allows to receive from / send to up to 4 channels on a Dante Network. Its network connectivity allows to remotely control, monitor any Dante parameters and to be compatible with any Dante software and tools.

State-of-the-art analog microphone preamplifiers gives to the AVDT-BOB a very high audio dynamic and quality at a very contained price.

These preamplifiers are coupled to high quality analog ladder-step gain controllers that allows to achieve a 60dB gain range, 3dB step, with an Equivalent Input Noise (EIN) as low as -125dBu.

The AVDT-BOB has a DSP to process and mix audio signal at the source and at the output.

A powerful embedded Digital Signal Processor gives to the user the power of high pass filters, parametric equalizations, dynamic compressions and fine-pitch digital gain adjustments. It also contains a digital mixing matrix that allows to mix analog and Dante channels and route them to any output.

The AVDT-BOB integrates an internal 5 ports Gigabit switch to ease the cabling, to increase the throughputs and to reduce the latencies. This gigabit switch links the external Gigabit ports (i.e. 2x RJ45 or 2x SFP modules and an EtherCon depending of part number) with the Dante Ultimo chip and the embedded double core ARM Cortex M4-M0 microcontroller. This switch guarantees a very low latency between the Dante chip and other Dante devices and allows to Daisy Chain the AVDT-BOB together with other Dante devices without necessarily requesting any external switch devices.

The AVDT-BOB embeds an internal PoE module for power and communication with a single Ethernet cable.

This PoE module provides up to 12W power through the port Gigabit “Main” of AVDT-BOB suppresses the need of feeding locally external power supply and allows a single Ethernet cable for communication and power supply.

The AVDT-BOB additionally incorporates a redundant power management and features a lock-able 6.4mm Jack connector for a standard 12V DC external power supply.

Native extension connectors on the AVDT-BOB Mother Board allows to add various functionalities thanks to a panel of Daughter Boards.

Extension boards are available to extend the AVDT-BOB capabilities. Existing extension cards are: 2x analog cards with 2x Mic/Line and 2x analog out on EuroBlock or on SubD connectors and 2x digital cards with AES/EBU and GPIOs. The hardware is ready for quick design of new interfaces or for specific requests.

The AVDT-BOB box is made of a very lightweight, robust and smart extruded aluminum.

This was designed to bring to the user many mounting options, thanks to side rails that allows to attach any type of fixation. The AVDT-BOB is delivered with side ears that can be mounted in any positions.

An optional mounting kit allow to interconnect up to 3x AVDT-BOB devices and so to build a Dante unit with 12x Mic/Line inputs and 12 analog outputs in the only space of a 1U 19” rack.
AVDT-BOB Digital Signal Processing Overview

The AVDT-BOB manages 2 kinds of inputs and 2 kinds of outputs:
- 2 to 4 inputs “Mic/Line” or “Digital” are coming from the Mic/Line In or AES/EBU connectors
- 4 Dante network inputs are available through the Gigabit Ethernet Main or Aux ports.
- 2 to 4 outputs “Analog” or “Digital” are sent to the Line Out or AES/EBU connectors.
- 4 Dante network outputs are sent through the Gigabit Ethernet Main or Aux ports.

The AVDT-BOB DSP is divided in 3 main processing blocks interconnected:
- The Input processing block
- The Mixing processing block
- The Output Processing block

The Input Processing block manages up to 4 Mic/Line or digital inputs and 4 Dante inputs. It delivers 4 Direct Out (just after preamp gain or phase inverter process) and 8 processed inputs that are sent to the Mixing Processing and to the Output Processing.

4x Equalizations plus Limiter Compressor plus Noise gate processing can be assigned to 4 inputs (i.e. Mic/Line or Dante inputs).

8x faders allow to manage the Mic/Line preamp gains or digital Dante input gains.

Each input can be enabled or muted and inverted.

48V Phantom power can be set individually to any Mic/Line input.

The Mixing processing block manages 4 independent Master mixers that are sent to the Output Processing Block.

Each Master mixer can mix up to 8 inputs (i.e. the Mic/Line or Digital and the Dante processed inputs) via individual faders controlling the input mixing gains.

Each input of a Master mixer can be enabled or muted.

Each mixer has an Master fader controlling the Master mixer output level.

The Output processing block manages up to 4 analog or digital outputs and the 4 Dante outputs.

The source of any output can be selected between one of the 4 DirectOut or the 4 processed inputs (Mic/Line, AES/EBU or Dante) or the 4 Master mixers.

4x Equalizations plus Limiter Compressor plus Noise gate processing are available on the 4 analog outputs.

8x faders allow to manage the output gains.

Each output can be enabled or muted.
Technical Specifications

**General**

- **Size**: 144 mm x 100 mm x 42 mm – regular 1U, 1/3 of 19" rack

**Main Power Supply**
- PoE (12W) via "Main" Port
- +12Ve or +5.0V via "Aux" Port

**Input**
- +12Ve ±15% ±1A max via 6.4mm lockable DC Jack Plug

**Output**
- +12Vdc ±15%
- 1A max via 6.4mm lockable DC Jack Plug

**Storage**
- - 5°C to 70°C / 0% to 95% (non-condensing)
- 5°C to 50°C / 5% to 90% (non-condensing)

**Connectors**

- **Connectors for version ”-AE-“ and ”-ADE-“**
  - 4x 6p or 8p Euroblock connectors (3.81mm pitch) for analog or AES/EBU inputs and outputs
  - 2x RJ45 Gigabit connectors ‘Aux’ and ‘Main’ with PoE capability on ‘Main’ connector

- **Connectors for version ”-AS-“ and ”-ADX-“**
  - 1x SUBD 25 connector for analog inputs and outputs with Yamaha pin-out DB25-XLR M/F (for AS version only)
  - 1x SUBD 25 connector for GPIO and AES/EBU inputs and outputs with proprietary pin-out (for ADX- version only)
  - 2x XLR Female + 2x XLR Male connectors for analog inputs and outputs on front face (for ADX- version only)
  - 1x Neutrik EtherCon connector ‘Main’ with PoE capability
  - 2x SFP cages to plug up to 2x Gigabit Media converters Optical Fiber or RJ45

**Audio Inputs/Outputs**

- **Number of Inputs**: 2x to 4x analog mic/line or AES/EBU inputs and 4x digital inputs from Dante network
- **Number of Outputs**: 2x to 4x analog or AES/EBU outputs and 4x digital outputs to Dante network

**MIC / Line Audio Inputs Technical Specifications (All measures at fs=48kHz & 22Khz BW)**

- **Sampling Frequency**: 44.1 kHz / 48 kHz
- **A/D resolution**: 24 bits
- **Input specification**: Balanced MIC/Line inputs on Euroblock or SUBD connectors
- **Input maximum level**: +12 dBu
- **Input sensitivity**: +12 dBu to -48 dBu
- **Input Impedance**: 3.5 kΩ
- **E.I.N.**: @Rs=150Ω G=+60dB -123 dBu
- **Dynamic Range**: > 97 dB A-weighted
- **THD+N**: @1kHz, +18dBu, G=0dB < -82 dB (0.0079%)
- **Frequency response**: 20Hz – 20KHz (+0 / -1 dB)
- **Phantom Power**: +48V (individually controllable for each channel)

**Line Audio Outputs Technical Specifications (All measures at fs=48kHz & 22Khz BW)**

- **Sampling Frequency**: 44.1 kHz / 48 kHz
- **A/D resolution**: 24 bits
- **Output specification**: Balanced analog outputs on Euroblock or SUBD connectors with <1000Ω impedance
- **Output level at 0dBfs**: +12dBu
- **Frequency response**: 20Hz – 20KHz (+0 / -1 dB)
- **Dynamic Range**: >105dB A-weighted
- **THD+N**: @1kHz, -48FS, G=0dB < -88 dB (0.0004%)

**Remote Control Environment**

- **OS Supported**: Web 2.0 interface compatible HTML5 (iOS, Android, Mac OS, Windows, Linux, …)

**References / Part number**

- AVDT-BOB-AE4io: 2xRJ45 (1xPOE) and 2x Mic/Line Inputs + 2x Line Outputs on Euroblock
- AVDT-BOB-AEG6io: 2xRJ45 (1xPOE) and 4x Mic/Line Inputs + 4x Line Outputs on Euroblock
- AVDT-BOB-AE8io: 2xRJ45 (1xPOE) and 4x Mic/Line Inputs + 4x Line Outputs on Euroblock
- AVDT-BOB-ADE8io: 1xNeutrik EtherCon (PoE) + 2xSFP cages and 4xMic/Line Inputs + 4xLine Outputs on DB25
- AVDT-BOB-AS8io: 1xNeutrik EtherCon (PoE) + 2xSFP cages and 1x stereo AES3 Input + 1x stereo AES3 Output on DB25
- AVDT-BOB-ADX8io: 1xNeutrik EtherCon (PoE) + 2xSFP cages and 4xMic/Line Inputs + 4xLine Outputs on DB25 on rear side and 2x Mic/Line Inputs + 2x Line Outputs on XLR3 on front side

**Distributors and resellers**

[Map of distributors and resellers]

**Information, contact and support**

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