

Typical applications

- AVB endpoint up to 8xIN, 8xOUT
- XMOS Ethernet controller
- Low cost audio streaming module

The AVB-DG is an affordable OEM module featuring the latest Audio Video Bridging (AVB) standards. Based on XMOS technology, it can stream up to 8 inputs by 8 outputs audio channels via I2S format. The modular configuration and co-processor architecture gives designers the flexibility required to keep up with ever changing requirements.

To foster creativity, DSP4YOU is opening all avenues for 3rd party product development. Schematics, template pre-compiled binaries and full source code are available for download from DSP4YOU & XMOS GitHub.

An open mindset for an open protocol.

Finally, the AVB-DG is an OEM friendly product. With more than 4 years experience at developing AVB products, DSP4YOU can help customize the product for large orders. Contact sales@dsp4you.com for more info.

Features

- Low cost AVB dongle
- Small form factor, low power
- Powered by XMOS

Hardware

- XMOS XS1-L16 128QFN
- Microchip 32bit MCU coprocessor
- JTAG for custom programming

Network

- Complete AVB stack by XMOS
- Additional L3 stack can be added on 32bit MCU as required

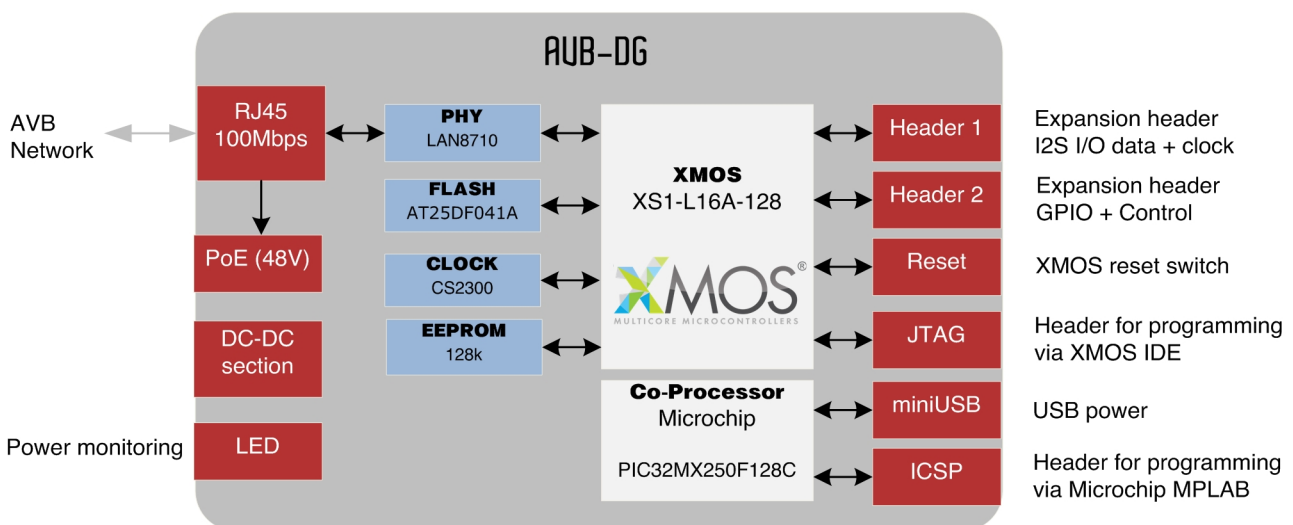
Connectivity

- 1 x RJ45 10/100Mbps
- 1 x miniUSB 2.0
- 1 x XMOS JTAG
- 1 x Microchip ICSP
- 1 x GPIO from XMOS
- 1 x I2S in/out + clocks for 8x8

Power

- USB self powered
- Optional +5VDC header
- Power over Ethernet Pin routed to header (requires PoE PD module not included)

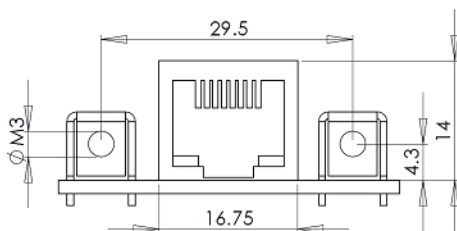
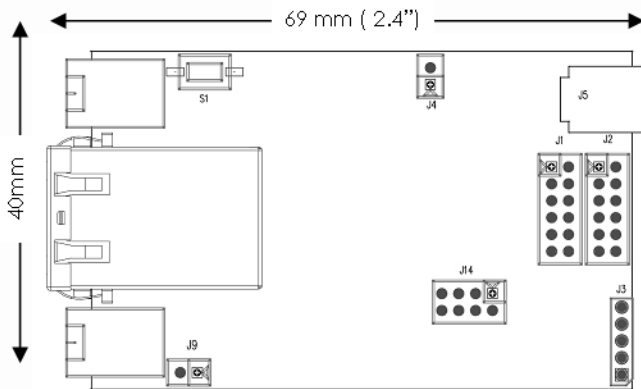
System diagram



Technical specifications

Item	Description
Network Processor	XMOS XS1-L16A-128 (16 core processor) - Programmable via JTAG
Co Processor	32bit Microchip PIC32MX250F128C - Programmable via ICSP
Network port	1 x auto speed sensing 10/100 Mbps RJ45 port
Network protocols & IEEE standards	IEEE 802.3i/u for 10/100BaseT IEEE 802.1AS, 802.1Qat, 802.1Qav for Audio Video Bridging standards IEEE 1722.1 for discovery and enumeration
USB slave mode	miniUSB 2.0 for Power / Connected to Microchip MCU
AVB Endpoint interface	2mm pitch connector with I2S input & output streaming AVBTP (IEEE 1722) talker listener mode <ul style="list-style-type: none"> Up to 8ch bidirectional @ 48kHz Sample rate of 44.1/48/88.2/96/176.4/192kHz (Channel count varies) Sample width up to 24bit Automatic hardware locking to stream's media using the IEEE 1722 presentation time
GPIO	Configurable GPIO routed directly to the XMOS core and available for custom programming by using XMOS IDE tools
Front/Rear connectors	FRONT: 1 x RJ45 with embedded magnetics - PoE pin routed to board for optional PoE REAR: 1 x miniUSB connector, 2 x 2mm headers for GPIO and I2S audio JTAG: 1 x XMOS JTAG connector, 1 x Microchip ICSP connector
Power Supply	USB Self powered Optional +5VDC via 2pin header Power over Ethernet Pin routed to header (requires PoE PD module not included)
Weight	20gm
Dimensions (H x W x D) mm	16 x 40 x 69 mm
Safety / Compliance	CE/LVD, RoHS compliant
Warranty	1 year warranty
Mounting	Removable mounting brackets with keyholes for ceiling, under the desk installation

Mechanical specifications



Item	Description
S1	Reset switch
J5	miniUSB port - Power in
J1	I2S data In/Out + Clocks See user manual for details
J2	GPIO pins + Power See user manual
J14	XMOS JTAG debugger
J3	Microchip MCU ICSP
J4	+5VDC input
J9	PoE power from RJ45
J21	RJ45 with Embedded magnetics

NOTE: Please consult the schematics of this module for more detailed information on hardware configuration.