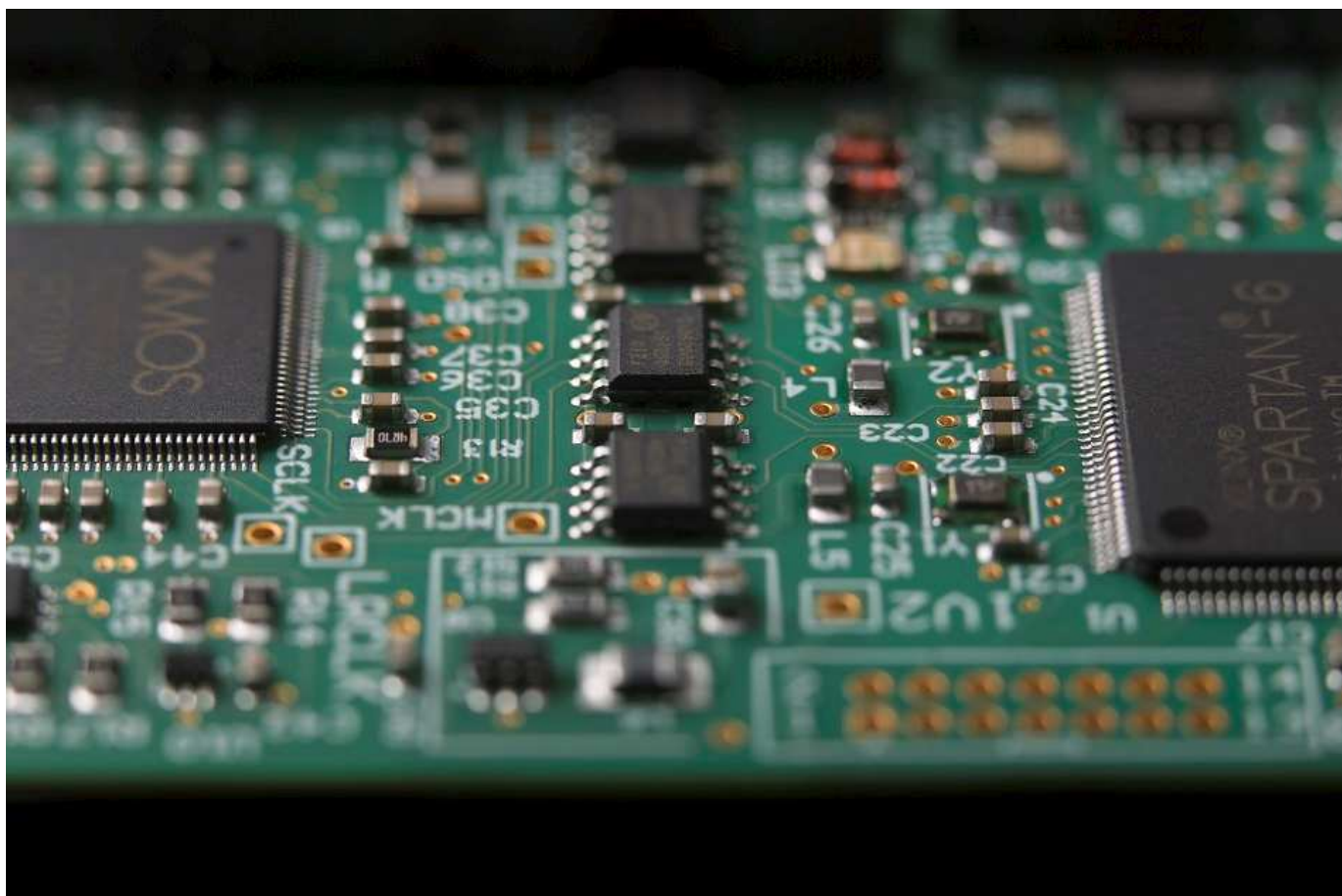


Formula xHD

The Art of the digital domain



AQUA R&D REDEFINES THE SONIC PERFORMANCE OF THE FORMULA DAC

Formula xHD D/A converter

The Optologic DAC

Key features

- Proprietary Optologic D/A conversion system
Pure R2R ladder - FPGA (Field Programmable Gate Arrays) based without digital filter
- Galvanic and magnetic isolations between the FPGA and the four branches of the R2R ladder converter
- Jitter free digital interface *AQlink PRO* (I2S protocol), uncompromising digital connection to La Diva cd transport
- Discrete R2R ladder DACs with low noise precision resistors
- Zero S/PDIF Jitter design, digital receiver stage PLL (phase locked loop) technology
- High-performance AQ Discrete Regulator (MOSFET, J-FET, BJT) for analog and digital DAC's power supply
- 2 separate low noise C-Core power transformers, one for the analog and one for the digital section
- MODULAR DESIGN with upgradeable multi board platform
- Transformer-based true balanced audio output stage
- Proprietary hybrid 2-stage XMOS xCore XE216 + FPGA USB Board cod. A108, high-resolution up to 768kHz PCM and DSD256 (Quad DSD). Fully-floating (isolated) USB decoding and clock generation by FPGA with proprietary code
- Proprietary USB Firmware / driver :
Native X Core Audio on Mac OS (Bit Perfect)
USB Audio 2.0 operation on Linux (Bit Perfect)
- Digital phase selector on front panel
- High-quality parts selected for sound quality:
 - Tantalum, solid-polymer OS-CON and double-metallized MJP capacitors
 - low noise Metal Foil ultra-precision resistors
 - double metallized film pulse capacitor
 - ultra-fast diodes
 - halogen free cables
- Aluminium anti-resonant cabinet with Nextel
- RC5 IR remote controller (optional)
- Designed and handmade in Italy



Performance characteristics

Digital to analog conversion type	Proprietary Optologic DAC Pure R2R ladder - FPGA (Field Programmable Gate Arrays) based without digital filter
Supported Native Sample Rates	AQlink / I2S serial bus - USB PC Audio : 44.1kHz to 768kHz PCM up to 24 bits DSD64, DSD128, DSD256 Supports DSD via DoP on all inputs
DAC architecture	Multibit sign magnitude R2R ladder (upgradable)
Asynchronous USB (High Speed)	USB Audio Class 2 with Type B connector
Digital Receiver	PLL (phase locked loop) technology 128 or 256 FS selectable
AQlink (I2S bus)	LVC MOS level
Oversampling factor	1x
Analog Conversion method	Pure R2R ladder - FPGA (Field Programmable Gate Arrays) based digital decoding without digital filter
Digital inputs	- RJ45 AQlink (I2S serial bus) - PCM 24 bit / 768kHz – DSD64, DSD128, DSD256 via DoP - BNC coax (S/PDIF) 75 ohm - PCM 24 bit / 192kHz – DSD64 via DoP - RCA coax (S/PDIF) 75 ohm - PCM 24 bit / 192kHz – DSD64 via DoP - AES/EBU balanced 110 ohm - PCM 24 bit / 192kHz – DSD64 via DoP - USB port - PCM 24 bit / 768kHz – DSD64, DSD128, DSD256 via DoP Modular input: - AES/EBU balanced 110 ohm - PCM 24 bit / 192kHz – DSD64 via DoP - RCA coax (S/PDIF) 75 ohm - PCM 24 bit / 192kHz – DSD64 via DoP - AT&T (ST Fiber) - PCM 24 bit / 192kHz – DSD64 via DoP - Optical TOSLINK - PCM 24 bit / 96kHz – DSD64 via DoP
Analogue Outputs	UNBAL 2 RCA Output 2.4 V RMS BALANCED (passive transformer's symmetrical) 2 XLR Output : 3.8V RMS
Output Impedance	10 Ω RCA - 600 Ω XLR
Load Impedance	10 k Ω (min.) RCA - 600 Ω XLR
Frequency Response	20Hz to 22kHz +0.5dB/-0.5dB
THD + N	<0,016% 1KHz -10dB
Main processor	STM-ARM microcontroller
Controls	9 Button on front panel, IR Remote, Isolated RS-232 D-SUB 9-pin connector
Front Panel	Power, phase invert, mute, input switch, RC5 remote sensor
Power Consumption	100-115V / 220-240V; 50 or 60Hz - 82VA
Dimensions	(W x D x H) 450 x 380 x 100 mm
Weight	9 kg
Front finish	Satin Alu Silver or Satin Black
Case finish	Grey Nextel powder coated



Handcrafted in Italy

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AQ TECHNOLOGIES S.r.l.

www.aquahifi.com
info@aquahifi.com