

# **La Voce S2**

## **D / A converter**

**Owner's Manual**

**Rev 1.0**

**aqua**  
acoustic quality

## IMPORTANT SAFETY NOTICES



The triangle with the lightning flash symbol displayed on the unit advises the user of dangerous uninsulated voltage inside the product's enclosure.

To reduce the risk of electric shock, do not remove the cover.

The triangle with the exclamation point symbol on the component suggests that the owner refer to important operating and maintenance instructions in the owner's manual.

### WARNING

Modifications and alterations not approved by the manufacturer may violate adherence to EC regulations and make the appliance no longer suitable for use. The manufacturer declines all responsibility for damage caused to persons or property due to the misuse or malfunction of device subject to unauthorized change.

### CAUTION

In order to make changes that improve the already excellent quality of its products, Aqua - Acoustic Quality reserves the right to modify the information or the contents of this manual at any time and without notice.

# WARRANTY

Aqua - Acoustic Quality audio products are warranted to be free from manufacturing defects for five (5) years from the original date of purchase. The warranty includes parts and labour. In the event of a defect or malfunction, contact your dealer or Aqua – Acoustic Quality directly for return authorization. Aqua - Acoustic Quality will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance. Aqua - Acoustic Quality will pay return shipping costs for the full length of the specific product's warranty. Products must be returned using original packaging material only. Packing material may be purchased from Aqua - Acoustic Quality if necessary. This warranty is considered void if the defect, malfunction or failure of the product or any component part was caused by damage (not resulting from a defect or malfunction) or abuse while in the possession of the customer. The warranty excludes the following components:

-Audio tubes

-NOS (New Old Stock) Components

**CAUTION:** Changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## GENERAL SAFETY INFORMATION

The following general safety precautions must be observed during all phases of operation of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment. Aqua - Acoustic Quality assumes no liability for the customer's failure to comply with these requirements.

- DO NOT operate the product in an explosive atmosphere or in the presence of flammable gases or fumes. For continued protection against fire, replace the line fuse(s) only with fuse(s) of the same voltage and current rating and type. DO NOT use repaired fuses or short-circuited fuse holders.
- Keep away from live circuits. Operating personnel must not remove equipment covers or shields. Procedures involving the removal of covers or shields are for use by service-trained personnel only. Under certain conditions, dangerous voltages may exist even with the equipment switched off. To avoid dangerous electric shock, DO NOT perform procedures involving cover or shield removal unless you are qualified to do so.
- DO NOT operate damaged equipment. If the built-in safety protection features have been impaired through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use product until safe operation is verified by service-trained personnel. If necessary, return the product to Aqua - Acoustic Quality for service and repair to ensure that the safety features are maintained.
- DO NOT service or adjust alone. Do not attempt any internal service or adjustment unless a person capable of rendering first aid and resuscitation is present.
- DO NOT substitute parts or modify equipment. To avoid the occurrence of additional hazards, do not install substitute parts or perform any unauthorized modification to the product. Return the product to Aqua - Acoustic Quality for service or repair to ensure that the safety features are maintained.

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## 1. Operation and Features

Make sure the supplied voltage is the one required by the device. Please ensure the quality of the connecting cables, paying particular attention the coaxial digital cable. Often, numerous tests have revealed the importance of this cable for obtaining the best sound quality. The transport unit which is responsible for the extraction of numeric data, is affected by jitter, which is non-temporal coherence. In more recent years, this issue has been taken seriously by some manufacturers, significantly improving the results in terms of sound quality. Aqua - Acoustic Quality counsels that this quality should be carefully assessed in order to achieve the desired result.

### Key features

- High performance proprietary **DFD** (Direct From Decoder) digital decoding without digital filter for purest digital signal quality
- Galvanic isolated S/PDIF - AES/EBU Digital input
- Jitter free digital interface **Aqlink** (I2S protocol), uncompromising digital connection to digital transport unit
- Zero S/PDIF Jitter design, digital receiver stage PLL (phase locked loop) technology
- precision **sign magnitude R2R ladder DAC** with 2 Burr-Brown PCM -1704K arrayed in dual mono configuration (PCM1704-K DAC option)
- Passive current / voltage conversion (I / V)
- Discrete Regulator (MOSFET, J-FET, BJT) for analog and digital DAC's power supply
- RJ45 (Aqlink) input connection, employs CAT6 cable
- 2 separate low noise power transformers, one for the analog and one for the digital section
- **MODULAR DESIGN** with upgradeable multi board system
- Fully discrete analog stage, not even a single Op-Amp is used
- Proprietary USB Firmware / driver :  
Apple MAC OS - Linux OS : USB asynchronous native support, no need to install drivers software
- **Fully upgradeable** Bit perfect asynchronous USB module with resolution up to 24 bit and 192 KHz, operates with computers running OSX 10.6.4 and above, Windows XP, 7 and 8 **ASIO – WASAPI** bit perfect high-speed
- High-quality parts selected for sound quality:
  - 105° long life capacitors
  - low noise Metal Foil ultra-precision resistors
  - metallized film pulse capacitor
  - ultra-fast diodes
- Aluminum anti-resonant cabinet with Nextel

## 2. Specifications

Native Sample Rates Supported	S/PDIF - AES/EBU : 24 bit / 192 KHz AQlink - I2S serial bus : 24 bit / 384 KHz
Asynchronous USB (High Speed)	USB Type B
Digital Receiver	PLL (phase locked loop) technology 128 or 256 FS internally selectable
AQlink (I2S bus)	CMOS level
Digital filter	Proprietary DFD (Direct From Decoder) digital decoding without digital filter
Oversampling factor	1x
Digital to analog conversion type	MODULAR: Multibit sign magnitude R2R ladder (PCM1704-K DAC option)
Analogue Outputs	UNBAL 2 RCA Output 2.1V RMS BALANCED (asymmetrical output) 2 XLR Output : 4.2V RMS
Current / voltage conversion (I / V)	Resistor passive (I / V)
Output Impedance	100 $\Omega$ RCA - 200 $\Omega$ XLR
Load Impedance	10 k $\Omega$ (min.)
Frequency Response	20Hz to 20kHz +0.5dB/-0.5dB
THD + N	<0.1% 1KHz -20dB
Front Panel	Power, input selector. Phase selector
Power Consumption	100-115V / 220-240V; 50 or 60Hz - 58VA
Dimensions	( W x D x H ) 450 x 310 x 100 mm
Weight	7 kg
Front finish	Satin Alu Silver or Satin Black
Case finish	Grey Nextel powder coated

## 3. DAC Configuration

Digital to analog conversion board is modular (es. option D104-K Multibit sign magnitude R2R ladder PCM1704-K DAC). More info at [www.aquahifi.com](http://www.aquahifi.com).

## 4. Front panel

On the front panel, you will find:

- power on/off switch
- rotary switch for selection of the digital input
- PHASE ( 0 / 180 ) switch
- LED power indicator

## 5. Back panel

On the rear panel, you will find:

- IEC connector of the power supply (220-240V or 100-120V).
- Digital inputs :
  - RJ45 AQLink (I2S serial bus) - 24 bit / 384 Khz
  - BNC coax (S/PDIF) 75 ohm - 24 bit / 192 Khz
  - USB port - 24 bit / 192 Khz

MODULAR INPUT upgradable, options :  
AES/EBU balanced 110 ohm - 24 bit / 192 KHz  
RCA coax (S/PDIF) 75 ohm - 24 bit / 192 KHz  
AT&T (ST Fiber) - 24 bit / 192 KHz  
Optical TOSLINK - 24 bit / 96 Khz

- The TX LED which indicates the timing of the digital signal S/PDIF / AES/EBU
- analog outputs :
  - RCA single-ended
  - XLR balanced symmetrical (optional)

### PIN ASSIGNMENT

The pin assignments of all of the XLR-type male analog outputs, the XLR-type female digital inputs are as follows:



Pin 1: Signal ground  
Pin 2: Signal + (non-inverting)  
Pin 3: Signal - (inverting)  
Connector ground lug: chassis free

## 6. PC connection

**ADVICE: Windows users must install the driver prior to connecting the USB cable to the PC** (please refer to download section <http://www.aquahifi.com/download.html> ).

The USB cable that connects to a PC, must conform to the 2.0 specifications, and should be of adequate quality. Please avoid using cable more than 2m, to avoid invalidating the bus performance

### True plug'n'play operation with Mac

Mac computers with OSX 10.6.4 and later have a native support for audio devices compliant with **USB Audio Class 2.0**. This means that the driver is already included in the operating system and the user needs not to install anything. Just connect the La Voce S2 DAC to your Mac and it will be immediately recognized by the OS and ready to use. Macs with older OS need update.

To use aqua USB as output device for your Mac, you need to select it as default output device from the **Audio Control Panel (Preferences -> Sound)**.

After selecting aqua USB, please check settings, you can select the sampling frequency fixed for La Voce S2 DAC, regardless the native sampling frequency of all audio tracks.

For the best sonic results, you may want to use a player which follow the native frequency of the tracks, like **Sonic Studio Amarra** or **Channel D Pure Music**.

### True plug'n'play operation with Linux

L'Ingresso USB high speed da Personal Comput

PC with Linux 1.0.24 and later have a native support for audio devices compliant with **USB Audio Class 2.0**. This means that the driver is already included in the operating system and the user needs not to install anything. Just connect the La Voce S2 DAC to your PC with Linux and it will be immediately recognized by the OS and ready to use.

### Windows XP, VISTA, 7, 8 O.S.

For the best sonic results, you may want to use a player which support **ASIO\***, like **foobar** or **JRiver Media Center**

\*ASIO is a trademark of Steinberg Media Technologies GmbH



Handcrafted in Italy



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