



User Guide



IQN DAC & IQN + (Pre-Amp)



Thank you for purchasing the Ideon Audio ION digital to analog processor with an optional pre-amp section. (ION: the Greek omega Ω is pronounced like an O). The ION is a fully balanced device, precision crafted and meticulously assembled.

The Ideon Audio ION DAC, with optional analog preamplifier utilizing trickle-down technologies and R&D gained, from our extensive work with our flagship ION Epsilon DAC. Most of the Epsilon DAC's innovations and designs are found in the ION in its own scale.

As with all Ideon components, the ION DAC is a fully proprietary design, with audio technologies developed in-house.

A bespoke handcrafted product housing an innovative combination of high-performance design features and best-of-breed quality components
DAC



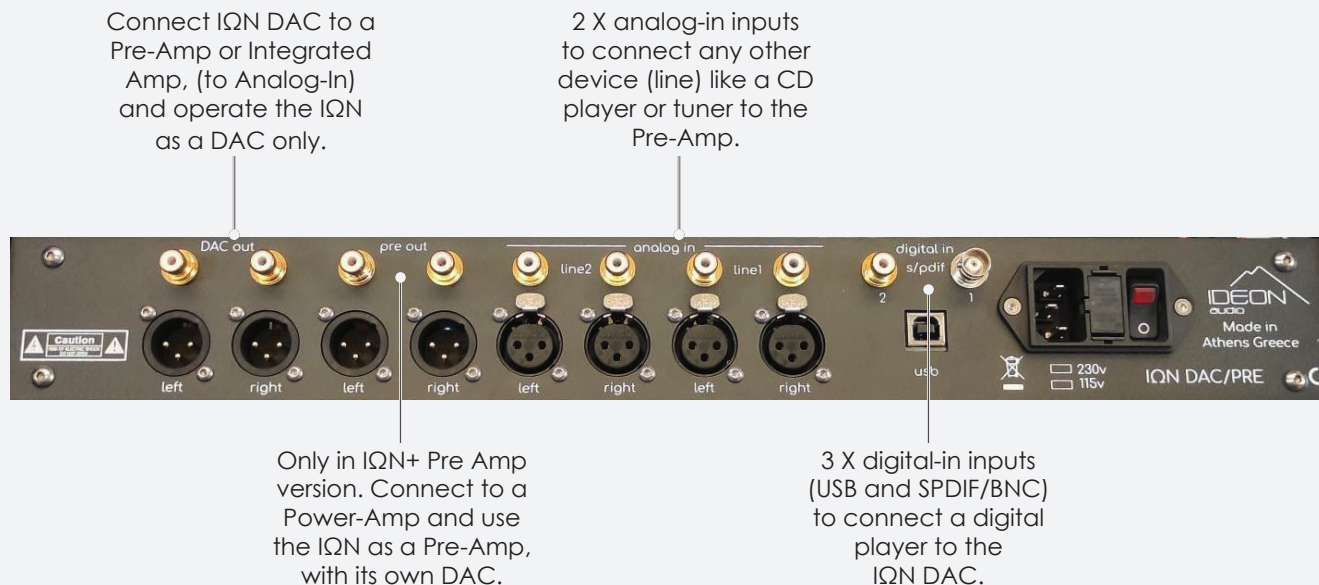
Connecting the IQN

Please complete all necessary connections (see pics below) before connecting the power chord to the mains. Inputs (analog in and digital in) and outputs (DAC and pre out) are horizontally placed, left & right

channel as they appear and marked on the back plate.

Once completed, connect to the mains and switch the device to stand-by mode pressing the main on-off switch in the back.

Back panel



Power On

To power on the device, either press the control knob once, or press "Power" on the remote control (available only for the IQN+ Pre-Amp version).

Operating the IQN

IQN+ Pre-Amp version

Switch on, and you are ready to connect to a power-amp.

When you power on your IQN+, defaults to volume control, and you can control the output level by turning the knob or by pressing the vol arrows on the remote. The

output is fixed on the DAC only IQN – or if you are operating your DAC/Pre in DAC mode only.

Power off your IQN by pressing power on the remote or keeping the knob pressed for more than 6 seconds.



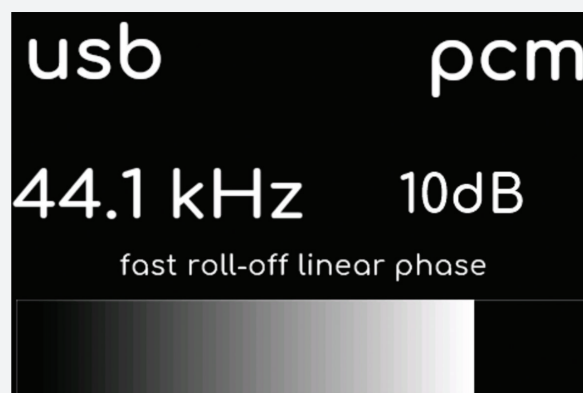
The ION preamplifier is a fully balanced analog design.

- On the analog input section, you will find 2 line inputs for connecting any other device you desire.
- To use the DAC, you will also find 3 digital inputs to connect any digital players you wish.

Front Display (Main Screen)

The first screen displays:

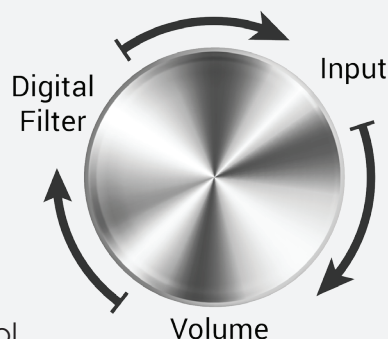
- The **current input** (upper left)
- The **decoding format** (upper right)
- The **sampling rate** (when there is a signal – otherwise IDLE will appear)
- The **Active filter** (below the sampling rate)
- **Volume level** in dB (from -115 to +15 dB) and graphically as a bar at the bottom of the screen



By turning the knob left or right you will be able to select between line Input1 and Input2 and/or USB, COAX or BNC digital inputs of the DAC.

- **Input1 & Input2:** connect CD player, Tuner, Phono Stage, etc.
- **USB, COAX & BNC:** connect Music Server, Streamer, CD transports, etc.

Pressing on the knob or pressing “select” on the remote activates the device functionalities. Typically, this will take you from volume (the default), to inputs, to digital filter choice, and back to volume. After any selection or even without it, the function returns to default i.e. volume control.



The active functionality is highlighted in red. Clicking again locks that functionality – alternatively waiting for 6 secs achieves the same result. Following selection, the colour will revert to white.

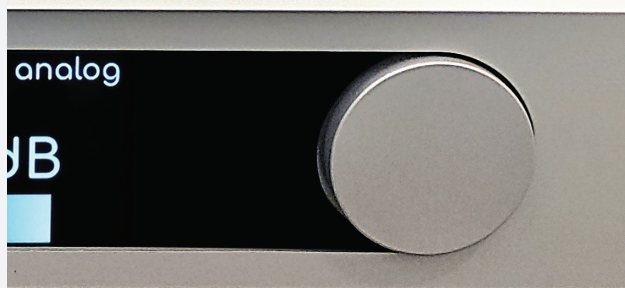
DAC SECTION

(for IQN DAC-only device or DAC-section on the DAC & Pre-Amp device)

Use the multi-function knob as explained below.

Power off your IQN by pressing power on the remote or keeping the knob pressed for more than 6 seconds.

Multi-function knob



- On-off switch
- Volume output level
- Input, Filter & Settings selector

Standby

For standby mode switch on the device from its IEC switch at the back plate.

Power On

Pressing on the knob once switches the device on. You can power on the device from the remote (available with the DAC/Pre version IQN+).

Power Off

Pressing the knob continuously for 7 seconds or more switches the devices off.

The power button of the remote can also power off the IQN.

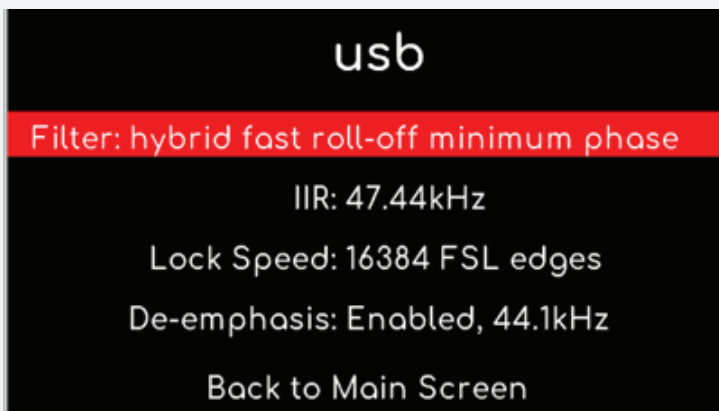
Menu/Settings Selection

Pressing on the knob for 2-3 secs and releasing it, takes you to the next screen/menu. You can navigate between options with the rotary function of the knob. You select your choice by clicking once; the selection is stored, and you are taken to the next menu function. Clicking on an item confirms your choice and takes you to the next item. The system saves the last selected settings. This function can be also performed with the remote control using the arrows and the select button.

Input Settings Screen

This screen displays filtering and processing parameters for the chosen input (which appears as a heading). Active functions are highlighted in red. Turning the knob allows to navigate between the options of that func-

tion. Clicking on the knob confirms the selection and takes you to the next function. If you do not want to change anything you can simply click once again and move on to the next item on the menu.



If you wish to return to the main screen, simply go to **“Back to the Main Screen”** and turn the knob.

Filter: in many files there is little real musical content above 25-30kHz the rest being noise. The filters address this issue especially for high resolution files. Landing on the filter highlights it in red and opens the selection. Turning the knob takes you through the seven (7) preset filter choices. These are,

- Fast roll-off, minimum phase.
- Slow roll-off minimum phase.
- Fast roll-off linear phase.
- Slow roll-off linear phase.
- Brick wall.
- Hybrid, fast roll-off minimum phase.
- Apodizing, fast roll-off minimum phase

Clicking on your selection confirms your choice and takes you to the next function.

We recommend you start experimenting with these after the first 3-4 weeks of operation.

IIR (infinite impulse response): set at 47.44kHz for PCM it is user selectable for DSD (50-60-70kHz)

Lock speed: this function sets the number of audio samples that are required from the incoming signal before the DPLL and jitter eliminator lock onto it. The default value is 16384.

On the rare occasion where there is no lock turn to the other values, preferably in descending order 8192, 4092, 2048, 1024.

De-emphasis: a filter that attenuates high frequencies and counteracts emphasis often used in mastering. We recommend that you leave this disabled.

Keeping the knob pressed for 2-3secs takes you to the **General settings screen**.

General Settings Screen

This is where you access the output option of the DAC, screen backlight level, and the system restore utility.

Our DACs default output has been defined for optimum performance, in accordance with our design principles. However, in certain cases, lower output may provide a bet-

ter match for certain loads (preamp / amp). So, selectable fixed outputs are available.

The DAC comes factory-set to fixed volume output, -0 dB FS (full-scale). This is the recommended setting for most systems, especially with top class pre-amplification.

Output Option: This gives you four choices:

- **High (fixed):** the default
- **Medium (fixed):** -3dB
- **Low (fixed):** -6dB
- **Variable:** completely variable, operates as a volume control (not recommended for critical listening).

General Settings

Output Option: Medium

Default Variable Volume: -20 dB

Backlight Level: 10

Restore Factory Settings

Back to Main Screen

IMPORTANT

This is not an analog attenuator, or an analog preamp! Using it you may lose bits from the digital reproduction affecting the sound.

To activate the Absolute DAC's own attenuator simply click on variable output. When you return to the main screen, the knob will function as a rotary volume control and the amplitude level will display in the middle of the screen.

Please note that volume /amplitude levels are displayed in dB of attenuation, so the higher the number the higher the attenuation i.e., the lower the volume. **-0dB means full volume!**

Note: The variable output level enables the DAC to be connected to a power amplifier directly without the need for an additional pre-amplification or attenuation circuit. For this reason, it incorporates a first-rate, hi-precision digital volume attenuator.

In variable mode, the default setting is -30dB. This is instrumental for protecting the speakers from inadvertent loud sound explosion! This changes of course, by using the knob to turn

up or down the volume. Please note that we thoroughly recommend the use of a separate quality preamp, despite the introduction of an additional electronic circuit.

Backlight level: refers to screen brightness, selectable values.

Reset factory settings: brings back the DAC to factory defaults.

Tips

This is a brief compendium of ideas and suggestions, often user inspired. Some of these are mentioned above. We thought that putting these all together in one place is worth the boredom of repetition. They are in random order, so the last is not necessarily less than the first!

1. The IQN DAC in its raw state (i.e. factory-fresh) takes us closer than ever to the musical event; we strongly recommend you privilege listening over tweaking!
2. **Burn-in:** based on anecdotal data, the IQN DAC needs a little over 300 hours to fully come into its own. Nevertheless, users report, and we confirm that the musical enjoyment begins from the very first moment of operation!
3. Keeping the IQN DAC on all the time keeps the power supplies charged and the operating temperature at optimum levels. If, however, your main grid is notoriously unstable, it is best to switch the IQN DAC off when not in use.
4. IQN DAC off for an extended period of time; upon restart, please allow some time before the device reaches its optimum operating conditions and optimum sound.
5. Vibration control: any vibration control device placed under the IQN DAC chassis can affect the sound, as can the furniture upon which you place it – just as it will for any audio device. As always, what you end up doing is a matter of personal choice.
6. Cables: it is well worth trying out good quality interconnects to and from the IQN DAC. When auditing cables, keep in mind that the IQN DAC circuits do not impart any sonic flavor of their own. Ultimately, the choice of cable becomes a matter of taste and associated equipment.
7. Power cords: many users opt for after-market power cords and find that this brings changes to the sound. To avoid undue damage to the device, please ensure that the after-market cords you wish to test are correctly engineered.
Important: before changing power cords make sure you SWITCH OFF the device and disconnect it from associated downstream equipment.
8. Please be careful when switching the IQN DAC on and off in quick succession, allowing at least 10 seconds between on-off changes.
9. Variable output volume: to avoid inadvertently damaging your speakers with a sudden loud signal, do not forget to set an attenuation level for start-up ("default volume level"). For the most dynamic, realistic sound, the settings above -9dB should be avoided. The -0dB setting is the best.



QUICK GUIDE

Main Screen

Action	Result
One click from OFF position	Power ON
Pressing continuously for 7 seconds or more	Power OFF
Pressing and keeping the knob for 3 seconds changes the menu	
The IQN opening screen has the input selection. Rotating the knob will take you through different inputs USB, RCA, BNC. To select, just press the knob when the desired input appears.	Inputs: USB, COAX, BNC – highlighted in red.
Pressing the knob again will take you to the choice of filter for that input; proceed as above to choose your preferred filter for that input using the rotating function of the knob. Click to select	Fast roll-off, minimum phase; Slow roll-off minimum phase; Fast roll-off linear phase; Slow roll-off linear phase; Brick wall; Hybrid, fast roll-off minimum phase; Apodizing, fast roll-off minimum phase

Input Settings Screen

Action	Result
Please proceed as above: rotating the knob will take you to different parameters of a specific setting, pressing will select the value of the setting, moving on to the next setting is done by pressing the knob.	Filter: choice of seven filters (see below)
The default settings were set at Ideon Audio. We recommend you maintain these while you familiarize yourself with the device.	IIR filter: 47.44 kHz (default), other choices: 50, 60, 70 kHz;
	Lock speed: default value 16384 FSL edges (default), other choices: 8192, 4092, 2048, 1024.
	De-emphasis: enabled-disabled, (default: disabled)
	Back to Main Screen

Description of user controllable parameters and functionalities

Volume: range -127dB- 0dB (full volume). Default setting is -0dB FS (i.e. full volume).

Oversampling filter: enabled this gives access to 7 user-selectable, pre-set filters. The filters influence the frequency response and allows the user to tailor the sound to their personal taste, the recording, or the mastering.

- roll-off, minimum phase
- Slow roll-off minimum phase
- Fast roll-off linear phase
- Slow roll-off linear phase
- Brick wall
- Hybrid, fast roll-off minimum phase
- Apodizing, fast roll-off minimum phase

We recommend using the default values at least until the IQN DAC has reached optimum performance levels (empirically over 300 hours of signal processing).

General Settings Screen

Action	Result
In "DAC output level", rotating the knob will change the output volume from default "fixed" to variable. Please refer to the important note on page 6, regarding the volume control.	DAC output volume: fixed-variable (default: fixed @ 0dB FS)
Pressing the knob again will take you to next menu item, "backlight level": using the rotating function you can select the level of the brightness function 1-10 (default is 10).	Default Volume level (selectable)
	Backlight Level: 1-10 (default is 10)
	Restore factory settings
	Back to Main Screen

Volume: range -127dB- 0dB (full volume). Default setting is -0dB FS (i.e. full volume).

Backlight level: refers to screen brightness, selectable values

Default volume: where you are at start up, when in variable output mode.

Reset factory settings: if you need to reset your device to factory settings.

Technical Specifications

SUPPORTED FORMATS (INPUT DEPENDENT)	44.1kHz to 384kHz PCM up to 32 bits , Native DSD (up to 8X DSD)
DIGITAL INPUTS	3x Advanced isolated input module slots (USB, BNC, RCA)
XLR BALANCED OUTPUTS	8.4Vrms at 0dB
RCA OUTPUTS	RCA OUTPUTS 4.2Vrms at 0dB
THD (A WEIGHTED 20HZ-20KHZ)	< - 110dB on all outputs
CHANNEL SEPARATION	>130dB on all outputs
SNR (A WEIGHTED 20HZ-20KHZ)	>122dB on all outputs
DYNAMIC RANGE	20HZ TO 20KHZ 135 dB (FS) . 132 dB (AFS)
DISPLAY	Custom discrete LED audio clock synchronous display
DIMENSIONS (W X H X D)	460 x 300 x 90 mm (18.1 x 11.8 x 3.5 in)
WEIGHT	13kg (~28 lbs)
IΩN DAC	
TOPOLOGY	Full Balanced Design
ANALOG INPUTS	2x Balanced (XLR & RCA)
OUTPUT IMPEDANCE	40 ohms
GAIN RANGE	-111.5dB to +15.5dB
DYNAMIC RANGE	121 dB configuration
CHANNEL SEPARATION	>130dB on all outputs
ULTRA-LOW NOISE	1.1 nV/√Hz at 1 kHz
ULTRA-LOW DISTORTION	0.000015% at 1 kHz
DIMENSIONS (W X H X D)	460 x 300 x 90 mm (18.1 x 11.8 x 3.5 in)
WEIGHT	13kg (~28 lbs)
IΩN+ Pre-Amp section	

Safety Instructions

- WARNING. TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE.
- Clean only with a dry cloth. Do not place flammable material on or underneath this device.
- Do not remove or bypass the ground pin on the end of the AC cord unless necessary to reduce hum from ground loops of connected equipment. Disconnecting the ground may cause RFI (radio frequency interference) to be induced into your playback setup. Removing or bypassing the ground pin on any electrical component is potentially dangerous and should be avoided for safety reasons.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Unplug this apparatus during lightning storms or when unused for long periods of time.



Servicing

THERE ARE NO USER-SERVICEABLE PARTS INSIDE ANY IDEON AUDIO PRODUCT. PLEASE REFER ALL SERVICING TO QUALIFIED PERSONNEL.

Please contact your authorized dealer, distributor, or Ideon Audio if you have any questions not addressed in this reference document.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



Warranty

Ideon Audio provides a 2-year manufacturer's warranty on all new Ideon Audio components.

The Ideon Audio seven (7) year and extended Lifetime Limited Warranty

You can extend the standard 2-year manufacturer's warranty into a 7-year warranty by registering your product with us. To do that, you need to send us your Name, Address, tel., email and the proof of purchase in the form of a bill of sale, invoice (or copy thereof) from the Ideon Audio dealer or Distributor. For further detail please contact your dealer or refer to Ideon Audio's official site.

Furthermore, Ideon Audio also offers a Lifetime product warranty that can be purchased at 17,5% of the retail price for any of our products. Please coordinate with your dealer or local distributor for that.

The Ideon Audio limited warranty covers defects in the materials and workmanship in this product. Under the terms of this warranty we will repair the product free of charge (parts and labor) — or replace it where we deem that repair is not possible — for malfunction due to inherent defects in the materials or construction.

Ideon Audio has authorized distribution in many countries of the world. Warranty service should be obtained directly from

the importing retailer or distributor from whom you purchased the product. In the unlikely event of service required beyond the capabilities of the importer, Ideon Audio undertakes to fulfill the conditions of the warranty.

In case of malfunction please contact your dealer to arrange for service. If you have purchased the product directly from Ideon Audio, please contact us directly at info@ideonaudio.com, quoting subject: fault and a short description of the issue.

Please note that the product must be returned using original packaging only and accompanied by a written description of the issue, defect, or malfunction.

***Extended, lifetime warranty coverage**

- This specially extended warranty covers the lifetime of the product model.
- This warranty is transferable under condition that each new owner informs Ideon Audio importers, dealers, or Ideon Audio directly the device model, number, previous owner name & new owner name & address.
- In cases of obsolescence of materials or superseded technology, the product will be repaired using currently available materials and technology of equivalent performance characteristics, or better.
- "Future proof": if Ideon Audio releases upgrades to, or improved versions of, the purchased product, these are made available to subscribers at cost of parts and materials only. Shipping to the service location is borne by the owner, Ideon Audio or its distributors / dealers pay for return shipping.

This warranty is voided in cases of,

- Damage and /or malfunction caused by tampering or modifications to the product's original state, attempts to fix, or other alterations to the product by persons other than factory authorized service personnel.
- Damage and /or malfunction caused by improper use, abuse, or improper operation of the product.
- Failure to comply fully with Ideon Audio operating instructions.
- Damage to cables or attachments and cosmetic damage induced by use.
- Products obtained outside the network of authorized Ideon Audio dealers and resellers.

General Warranty Terms.

This Warranty is subject to the following conditions and limitations: The Warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in this document, abused, or misused, damaged by accident or neglect or in being transported, or the defect is due to the product being repaired or tampered with by anyone other than Ideon Audio or an authorized Ideon Audio repair center.

1. The product must be packaged and returned to Ideon Audio or an authorized Ideon Audio repair center by the customer at his or her sole expense in the original packing material. Ideon Audio will pay return freight of its choice for original purchasers.
2. Returned product must be accompanied by a written description of the issue or the defect. Ideon Audio reserves the right to modify the design of its products without obligation to purchasers of previously manufactured products and to change the price or specifications of any product without notice or obligation to any person.

In the event the product fails to meet this Warranty and the above conditions have been met, the purchaser's sole remedy

under this Limited Warranty shall be to return the product to Ideon Audio or an authorized Ideon Audio repair center where the defect will be repaired without charge for parts or labor.

This warranty does not cover the cost of custom installation, customer instruction and setup adjustments.

This warranty does not cover cosmetic damage or any damage due to accident, misuse, abuse, negligence or modification of, or to any part of the Product, without initial express consent from Ideon Audio. This warranty does not cover damage due to improper operation or maintenance, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by Ideon Audio to service the Product.

Enjoy the music, enjoy hi-definition in music!



