CLASSIC DAC II

User manual

Table of contents

Nagra - CLASSIC DAC

Safety warning

- Read this manual carefully before operating the CLASSIC DAC.

- Should you have any questions on how to setup or use your CLASSIC DAC, please contact your Nagra dealer.

- Audio Technology Switzerland SA declines any responsibility in the event of an accident caused by the non-observance of these instructions or any other form of user negligence.

- The CLASSIC DAC is CLASS I equipment. It is essential that it is connected to a Mains socket outlet with a protective earthing connection when using the AC power supply.

- The CLASSIC DAC must not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, should be placed on it.

- There are no user adjustments inside the CLASSIC DAC, do not attempt to open it.

Warranty

Please refer to the addendum enclosed in this User manual.

Congratulations

Congratulations! You have just acquired one of the best digital-to-analog converters ever made.

The CLASSIC DAC was created by an engineering team with more than 70 years of experience designing world-class products for the professional audio, national security and military businesses.

Since its inception in 1951, Nagra has built products that continue to earn a reputation for delivering ultimate sonic performance. Numerous awards have been bestowed upon Nagra for its technical innovation, excellence in design and flawless construction including two Oscars® and two Emmys®.

The professional and Hi-Fi ranges are both designed by our Research and Development department. Nagra has launched a Hi-Fi range to allow the wider public to benefit from technical advances that are often the sole privilege of professionals.

This technology exists in the service of music, your music. We wish you great moments of listening pleasure with your CLASSIC DAC.

Thank you for your trust.

Package contents

Besides the manual and the CLASSIC DAC itself, the box contains:

- Mains cable*

- IR Remote Control Unit with 2x AAA-Dry cells

- Pair of "Haute Horlogerie" grade microfiber gloves

Please contact your Nagra dealer if anything should be missing.

* Depending on your country, the power cord features either a US, European or Swiss plug.

Installation

Positioning

The CLASSIC DAC is designed exclusively for indoor use in a moderate climate.

There must be enough space all around the chassis for adequate ventilation. Ventilation should not be impeded by covering the ventilation openings with items such as newspapers, tablecloths, curtains, etc.

The CLASSIC DAC must rest on a stable support. We recommend that you use the Nagra CLASSIC VFS FOR SOURCE. The VFS, developed by Nagra, consists of isolated solid aluminum plates using the same silicone base damping material as the Nagra CD mechanics.

Powering the CLASSIC DAC

The CLASSIC DAC can be powered either by its own internal power supply or by an external +12V(+12.6V) $=$ with the Nagra MPS or the CLASSIC PSU. In the first case, simply use the AC Mains cable provided.

Connecting the Mains
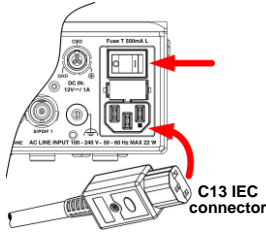
Place the Mains power switch on the rear panel of the unit in the OFF position, marked **«0»**.

Insert the C13 IEC connector of the power cable into the C14 IEC Appliance inlet of the CLASSIC DAC.
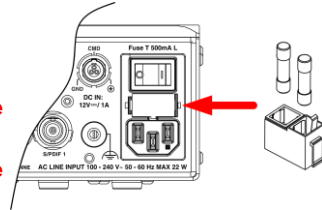
You may then push the Mains switch into the **«I»** position.

C13 IEC connector
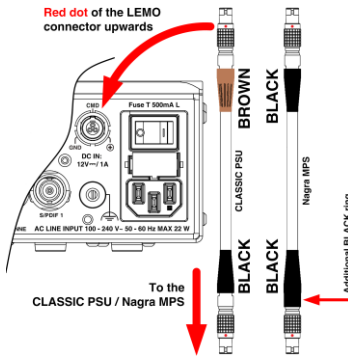
Fuse replacement
The fuse holder includes a replacement fuse.
The fuse type is: **FST 5x20mm 250V / T 500mA L**.

Should you need to replace it, use only the same fuse type and value.

Should the fuse blow more than once, please contact your Nagra dealer for assistance.

Connecting the Nagra Power Supply

Red dot of the LEMO connector upwards

To the CLASSIC PSU / Nagra MPS

Start by removing the power cable from the C14 IEC Appliance inlet of the CLASSIC DAC. The Mains switch position is no longer relevant when an external power supply is connected.

Place the front rotary selector in the **OFF** position. Insert the LEMO connector from the external power supply cable into the DC socket as shown beside. You will hear a click that indicates the connector is securely locked.

Please note that the LEMO plug features a red dot that must be facing upwards for a correct insertion into the DC power input socket.

The BLACK-sleeved LEMO plug should be connected to the CLASSIC PSU or the BLACK-sleeved LEMO plug with the additional BLACK ring to the Nagra MPS.

To disconnect the LEMO plug, hold the fluted section of the connector, and pull it backwards.

LEMO DC POWER CABLE
FOR NAGRA CLASSIC PSU

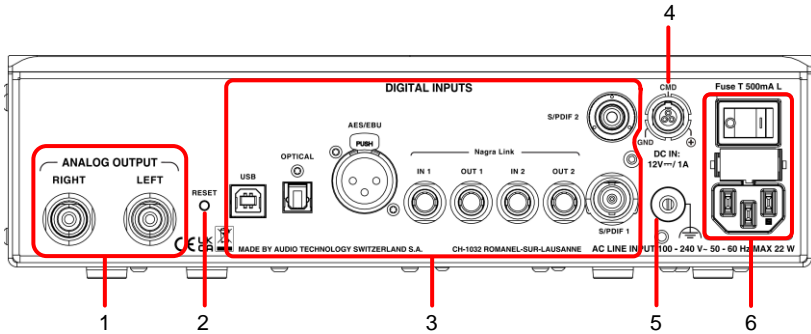| L [m]	ATS P/N
1.25	7055050020
3	7055050025
5	7055050027

BLACK — *BROWN*

Nagra audio device
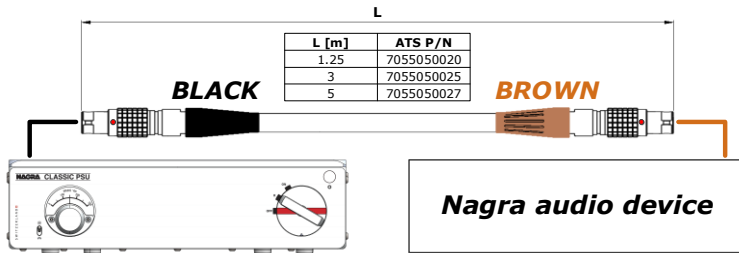
Nagra 2021 rev 1

***Only use LEMO cables with BLACK & BROWN sleeves
to benefit from the best Nagra CLASSIC PSU features***

*The **BLACK**-sleeved LEMO plug should be connected to
the Nagra CLASSIC PSU*

Connection block on rear panel

1 Output block with 2x RCA

2 RESET of digital inputs board (NADM)

3 Input block with
USB, OPTICAL, AES, Optical Nagra Links, S/PDIFs digital inputs

4 DC power input on 3 pole LEMO socket

5 Ground post

6 IEC Appliance inlet with Mains connector, Mains fuse, and Mains switch

To obtain optimal performance from the CLASSIC DAC, it is preferable to leave the device switched on for about 15 minutes before use, so that the internal components can reach their optimum operating temperature.

Note about the Ground post
Use of this feature is seldom necessary but can sometimes come in handy to solve specific setup issues. Your Nagra dealer will assist you on when and how to use this connector.

Audio inputs
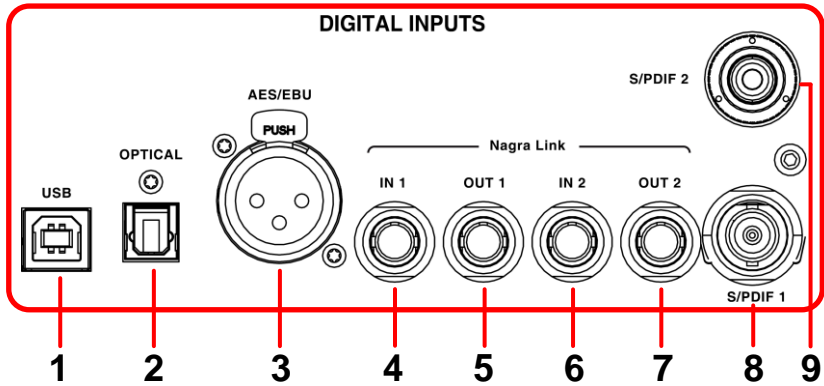
|	Input type	Input format
1:	USB B-type	DSD: up to DSD256 (DSD4x) PCM: up to PCM 384kHz
2:	TOSLINK EIAJ optical (MM fiber)	PCM: up to PCM 192kHz
3:	AES/EBU	PCM: up to PCM 192kHz
4-7:	N-Link (MM fiber)	DSD: up to DSD256 (DSD4x) PCM: up to PCM 384kHz
8:	S/PDIF 1 BNC	PCM: up to PCM 192kHz
9:	S/PDIF 2 RCA	PCM: up to PCM 192kHz

Nagra - CLASSIC DAC

Front panel
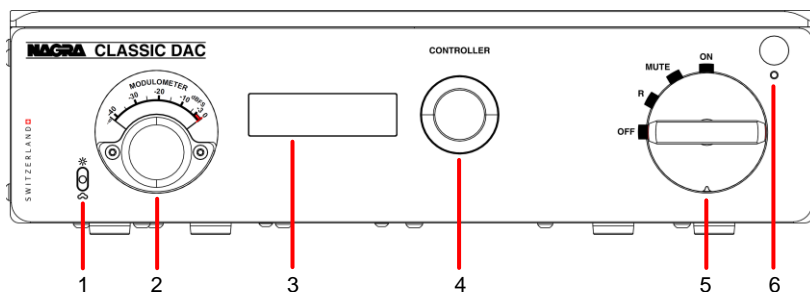
1 LCD display and Modulometer backlight intensity switch, pushed up will increase the intensity, down will reduce it, there are 7 intensity levels.

2 Nagra Modulometer indicates the digital input level in dBFS (Full Scale) of the currently selected input. 0 dB being the maximum level. The black needle corresponds to the signal on the left channel and the red needle to that of the right channel.

3 LCD Display.

4 Controller knob to select the digital input and the phase inversion mode.

5 Front rotary selector.

6 IR window and remote control LED.

When turned **ON**, the CLASSIC DAC will go through a short preheating sequence (around 15s). This is to optimize the warming-up of components. This will allow your CLASSIC DAC to offer excellent performance for a longer period, since the components are managed gently. **«HEATING»** appears on the display during this sequence.

Note: In case of an accidental return to the **OFF** position of the front rotary selector for less than 1 second, the preheating is not reapplied.

Operations

Basic operations
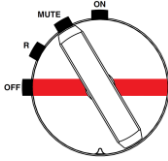
The typical Nagra front rotary selector offers 4 positions.

- **OFF** is similar to a STANDBY mode.
- **R** is for Remote control.
- **MUTE**, the unit is ON, but the audio signal is muted.
- **ON**, the unit is fully operational.

WITH AC POWER	WITH DC POWER		
Rear Mains switch	Power supply output	Front rotary selector	Action
0	OFF	Any	The unit is totally off.
I	ON	OFF	The unit is in STANDBY mode. The device is still powered but the consumption remains very low.
I	ON	R	The unit can be triggered ON and OFF by the IR Remote Control Unit.
I	ON	MUTE	The unit is ON and muted (for warming-up).
I	ON	ON	The unit is fully operational.

Setting your CLASSIC DAC

Thanks to its LCD display and the controller, you will be able to set up your CLASSIC DAC to fully integrate it within your system.
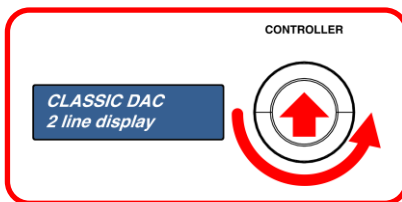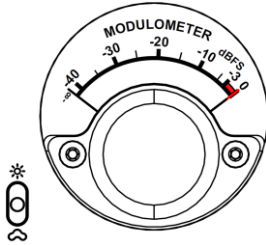

How to configure
It is simple, one knob that does everything. You can rotate it or press it. If you rotate the Controller, you select the desired input. If you push on it, you set/remove the phase inversion mode.

When the phase inversion mode is active, the character «Ø» appears in the lower right corner of the display:

  ← Phase inversion mode active
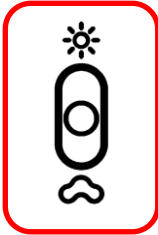

Nagra Modulometer

Nagra Modulometer is inherited from the second recorder developed by Nagra back in 1952, the Nagra II. The Modulometer is a typical Nagra precision instrument that displays the necessary information to perform the best possible recordings. In the case of the CLASSIC DAC, the Modulometer displays the digital input level. The 0 dB corresponds to full scale signal, meaning the maximum digital level.

Left channel - black needle
Right channel - red needle

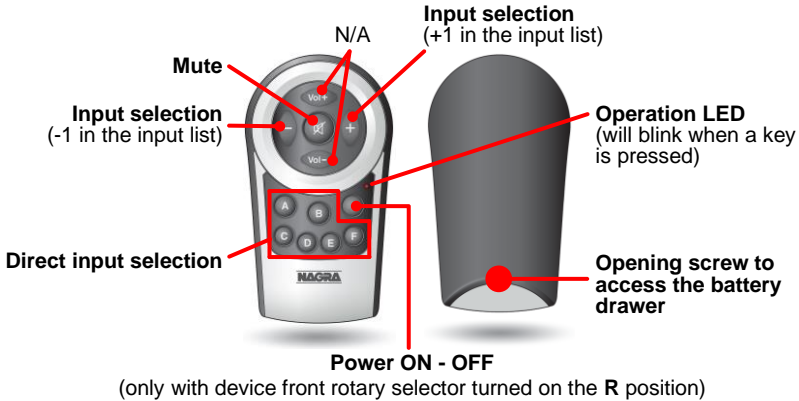# Modulometer & display intensity adjustment

This toggle switch allows you to adjust the Modulometer & display backlight intensities. Pushing the toggle switch up will increase the intensity, pushing it down will lower the intensity all the way to no illumination. There are 7 different intensity levels.

IR Remote Control Unit

⚠	The Remote Control Unit, with batteries installed, should not be exposed to excessive heat such as sunshine, fire or the like.	⚠

The CLASSIC DAC currently comes with the RCU-III IR Remote Control Unit with Philips RC-5 format encoding.

N/A

Input selection
(+1 in the input list)

Mute

Input selection
(-1 in the input list)

Operation LED
(will blink when a key is pressed)

Direct input selection

Opening screw to access the battery drawer

Power ON - OFF
(only with device front rotary selector turned on the **R** position)

Direct input selection

A USB	**C** S/PDIF 1	**E** N-LINK 1
B AES	**D** S/PDIF 2	**F** N-LINK 2

There is no direct selection key to the OPTICAL input. Use «+» key to select it.

Input selection with «-» and «+» keys

Press on «-» key to select one input before the current selection in the input list.
Press on «+» key to select one input after the current selection in the input list.

Power ON - OFF key

Toggle key to switch ON and OFF the CLASSIC DAC. When switching ON, the CLASSIC DAC automatically select the last input active before the last power OFF and its condition (input muted or not muted).
Note: Only operative when the front rotary selector is turned on the R position!

Battery installation/exchange

Open the battery drawer by removing the screw located on the back side of the Remote Control Unit with a small Phillips drive screwdriver.

Replace empty batteries with either 2x new AAA-Dry cell battery or 2x AAA-NiMH/NiCd rechargeable battery externally loaded.

🗑	By ensuring battery is disposed of correctly, you will help prevent potential negative consequences for the environment and human health. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of battery, please contact your local authority, your household waste disposal service or the shop where you purchased the battery.

Nagra - CLASSIC DAC

Using an "universal" RCU with the CLASSIC DAC

The CLASSIC DAC only responds to IR (Infra Red) signals coded in Philips RC-5 format. A default code 19 has been allocated to the CLASSIC DAC as a Digital-to-Analog converter.

Should you wish to program your universal Remote Control Unit, please use the following table:

Code	Function
1 to 7	USB to OPTICAL inputs
12	Power ON - OFF
13	Mute ON - OFF
32	Input change step-up
33	Input change step-down
37	Phase inversion mode ON - OFF

Nagra - CLASSIC DAC

Maintenance

Case cleaning

Clean the CLASSIC DAC casing using a soft, lint-free, slightly damp cloth. Do not use any cleaning products which could have a corrosive effect.

Technical specifications

Digital inputs	1x Audio USB (UCA2), 1x AES/EBU, 2x S/PDIF, 2x NAGRA-LINK, 1x Optical.	
Analog outputs	Unbalanced RCAs	
Output impedance	$Z_{OUT} < 430\ \Omega$	
Output level	1.5 V_{RMS}	
Analog output Noise level	-128 dBr @ 1 kHz 1.3 V	Linear
Distortion	< 0.02 %	@ -20 dBFS
THD + N	< 0.03 %	@ 192 kHz
Frequency Response	5 Hz - 40 kHz	+0 / -1 dB
Crosstalk	> 100 dB	
Inter-channel phase	<0.1 °	@ 20 kHz
Power supply	1x 12 V ⎓ / 0.8 A	With MPS, Classic PSU
	1x 12.6 V ⎓ / 0.8 A	With Classic PSU
	or	
	100-240 V~ ±10% 50-60 Hz	With Mains
Power consumption	P_{max} 10 W	Standby mode < 1W
Operating temperature	+15°C to +35°C +59°F to +95°F	Moderate climate
Operating environment	Indoor only	IP30
Dimensions L x W x H	380 x 280 x 76 mm 15 x 11 x 3 in	Overall
Weight (net)	5 kg / 11 lbs	

Specifications may change without notice

Nagra - CLASSIC DAC

Replacement parts

ATS ref	Part description	Comment
4181310500	FST 5x20mm 250V - T 500mA L	Replacement fuse
7055324000	Remote Control Unit for Classic DAC	Replacement unit

Disposal of old electrical & electronic equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that it should be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local authority, your household waste disposal service or the shop where you purchased the product.

Applicable to the following devices:
Nagra CLASSIC DAC and all the package contents