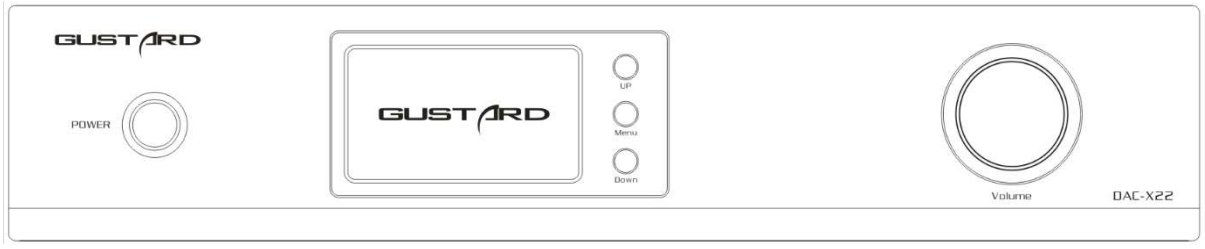
GUSTARD

DAC-X22

High-performance DAC
User Manual



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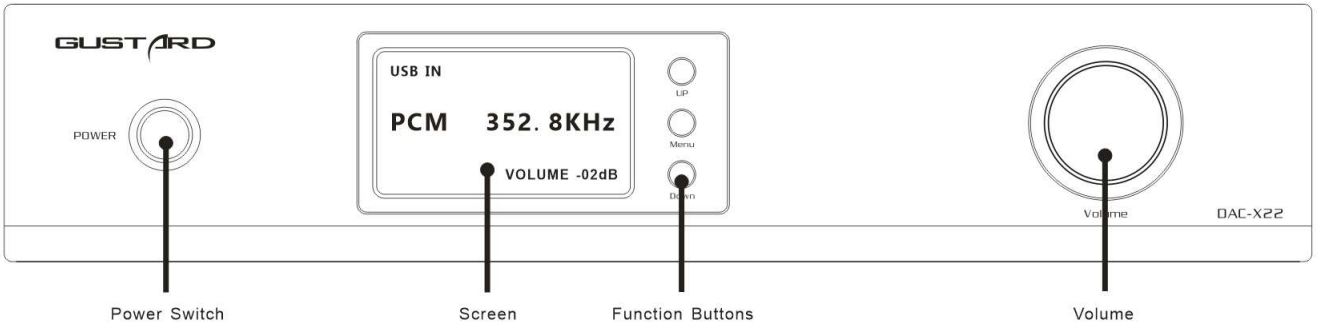
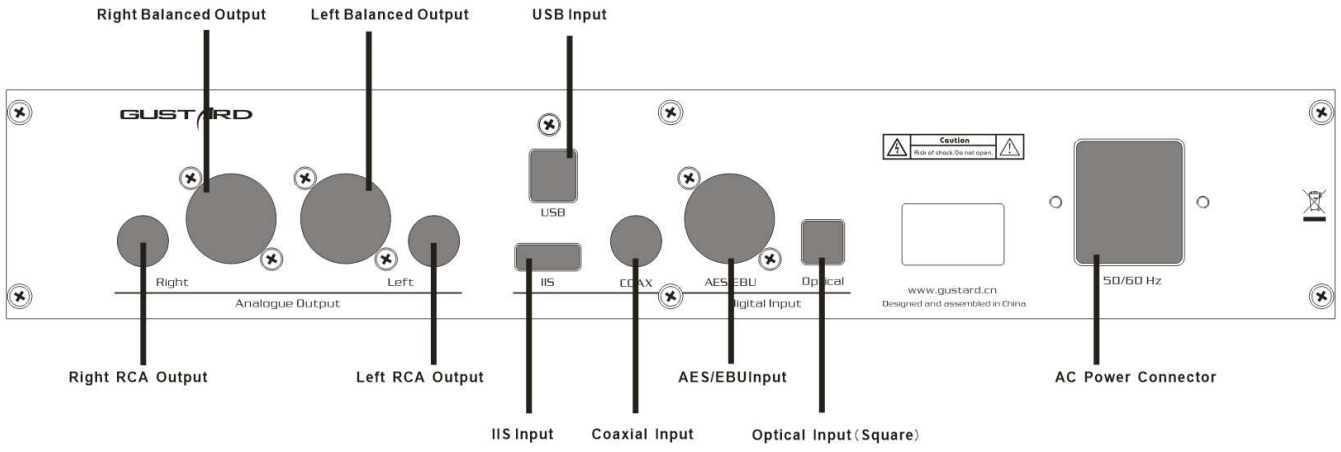
Front panel



1. Power switch is a button, push it to start.
2. The monitor display the input channel encoding format sampling rate volume and others.
3. Multi-function button can archive all the functions and select the input channel.
4. Volume controller Clockwise to increase counter clockwise to decrease.; It aiso can change the options by rotation in the menu.

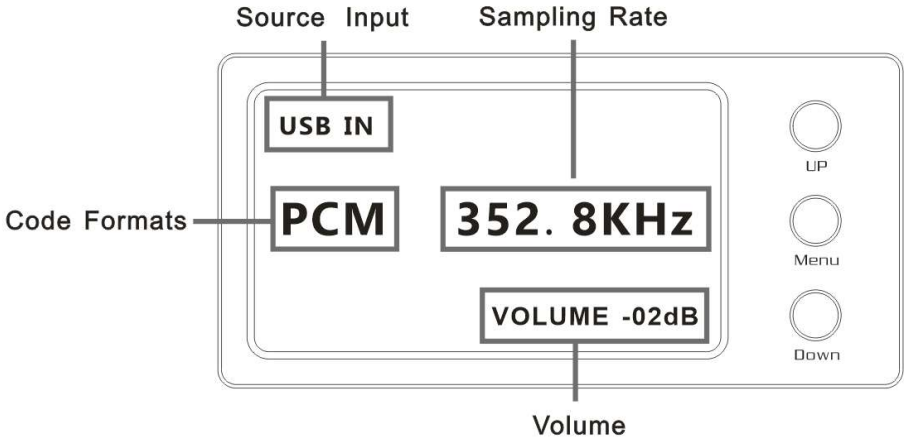
Rear panel



Display and the menu

1. Used large OLED monitor.Display the real-time status and functions

   The following figure shows an example



2. Input channel select:
   X22 has 5 channels to input. In main menu press the button to select in COAX——AES——USB——IIS——OPT.
3. Volume
   In main menu turn the knob to adjust the volume. Clockwise to increase counter clockwise to decrease from -90dB to 0dB a total of 90 levels adjustment.

4. Enter the menu:

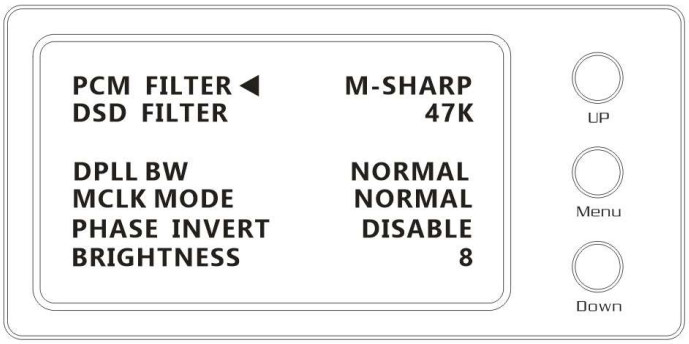
   When in the main interface. Hold down the button “menu” for 2s to enter the menu.

   And press up and down to switch the option. Adjust the functions by rotating.

   Press the button “menu” to return.

   The menu switched by the arrow circularly
   as followed:

   —PCM Digital Filter adjust
   —DSD Digital Filter adjust
   —Digital PLL bandwidth adjustment
   —Master clock mode
   —Phase control
   —Monitor Brightness adjust



The menu shows the default settings. if you want to return to the default parameters, you can also press and hold down the Down key in the shutdown state at the same time to boot. Three seconds after powering on release the button and then it will be restored to the factory settings.

5. Menu introduction:
When the main interface status press Menu to enter, the following were introduced to each line of the menu.

a. PCM FILTER (PCM 数字滤波器调节):
PCM FILTER:
X22's filter can work in seven modes:
M-SHARP —— M-SLOW —— L-SHARP —— L-SLOW —— HYBRID —— APODIZING —— BRICKWALL
switched by the knob

SHARP/SLOW filter divided in two groups. One is MINIMUM PHASE start with M-.The other one is LINEAR PHASE start with M-.SHARP for rapid roll-off digital filtering it is the most common type sounds most accurate and neutral. LOW slow roll-off. which has a smooth signal attenuation characteristics of the band. but also because of the band Attenuation characteristics. MINIMUM PHASE and LINEAR PHASE have the different Impulse response. MINIMUM PHASE without pre-ringing but long post-ringing. Can be more harmonic overtones. HYBRID Combined with the characteristics of the two. Sometimes could have the advantages of two. APODIZING is a unique filter could conceal the Pre-ringing(a type of digital distortion will resulting in some unnatural sharp or harsh sound).BRICKWALL the filter is sharp roll-off and clean sound.

b. DSD Filter (DSD 数字滤波器调节):
X22 DSD filter with 4 different bandwidth can be selected. Rotate the knob to select in 47K——50K——60K——70K circularly. According to the sampling rate to adjust.47K is recommended when listen DSD64 (2.82M) .The larger bandwidth means more treble detail

c. DPLL BW (数字锁相环带宽调整):
The digital phase-locked loop has a total of two(NORMAL / HIGH) kinds of bandwidth for adjustment. Under normal circumstances, select NORMAL to match the most sources. When the DAC-X22 always out of lock, you can choose HIGH bandwidth to provide greater jitter tolerance, but at the same time there is a slight degradation in performance.

d. MCLK MODE (主时钟模式):

After many years of research and development.X22 archive this unique function. In order to set the ES9038PRO in the best clock environment--True HI-END performance. When select AUTO.X22 will enter the adaptive master clock mode. A more accurate clock will be obtained by a set of high performance PLLs (phase-locked loop), and it will be transmitted to the ES9038 DAC. The asrc will be turn down. The digital filter inside ES9038 will no longer produce a weak timing error (jitter), and the digital signal will be more accurately recovered. When the NORMAL option is selected, the ASRC is turned on and the clock mode will be fixed at 100M femto-second clock, as the official design of the ES9038PRO.

* Under the "Auto" mode, the quality of the master clock of DAC-X22A will be more or less performance depended by the quality of the superior clock. This mode is recommended to be used only for the clock of the front-end audio equipment in good condition.

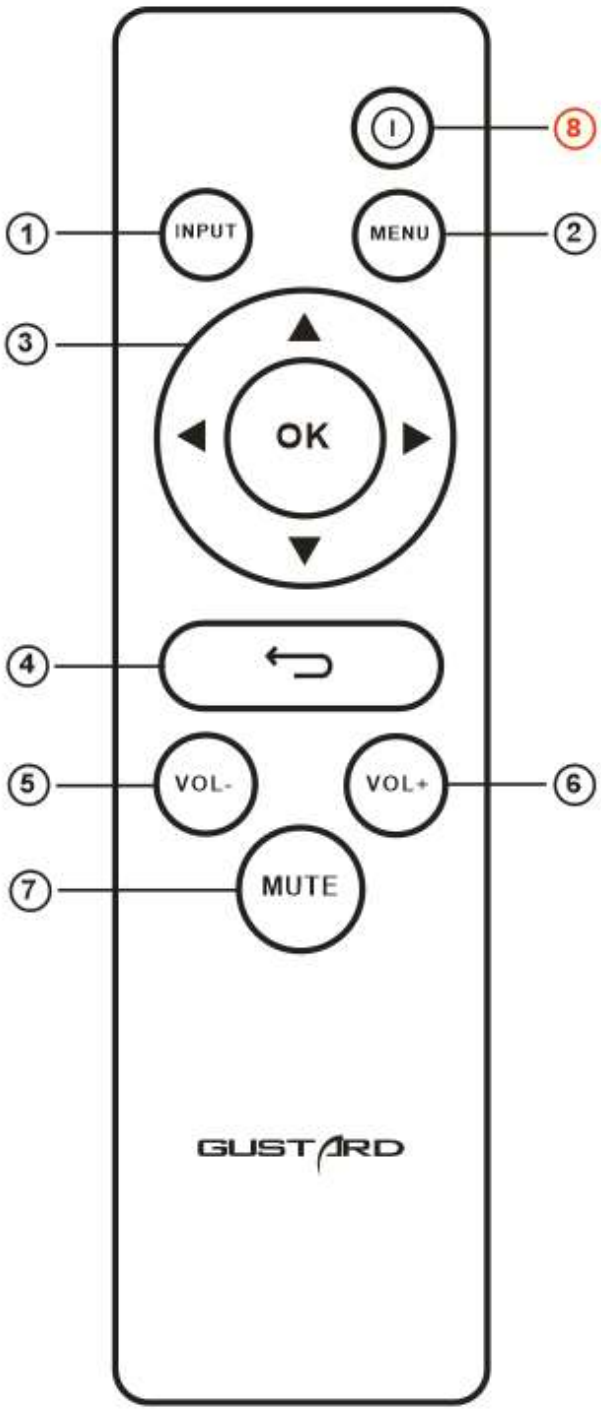
e. PHASE INVERT:

The amplifier in the RCA output default is positive phase. XLR balanced output for the American standard polarity output. that is 1,2 hot 3 cold. There are two options for this function: DISABLE and ENABLE (optional).

f. BRIGHTNESS (屏幕亮度) :

There are 8 levels of brightness to adjust(OLED Display)

Remote Controller



1.Input Button.

Source will be switch to the next after pressing this button by the following cycle sequence: COAX——AES——USB——IIS——OPT

2.Menu Button.

DAC-X22A main menu is shown by pressing this button.

3.Four Directions Button.

In DAC-X22 main menu, different item can be explored by UP and DOWN buttons, and different options in an item can be selected by LEFT and RIGHT buttons.

4.Return Button.

Return back to the main menu display.

5and6.Volume adjustment Button.

It can adjust volume only when DAC-X22 shows the main menu on the screen.

7.Mute Button.

DAC-X22 will be muted when this button is pressed, and mute will be released after another pressing.

8.Power Button.

This button is invalid, A20H does not have the corresponding function.

Notice!

1) Operating distance of the remoter varies depending on the angle.
2) If there something blocks the remoter and the sensor, operation might be failed.
3) If the remoter will not be used for a long time (one month or longer), the battery is recommended to be removed.
4) If battery liquid leakage happens, battery compartment should be clean immediately and installed a new battery
5) This remoter might cause the wrong operation of other infrared-red controlled devices.

Product Specifications

Digital Input

COAX input format supported: PCM 16-24bit/44.1-192kHz; DSD DOP64

AES input format supported: PCM 16-24bit/44.1-192kHz; DSD DOP64

OPT input format supported: PCM 16-24bit/44.1-192kHz; DSD DOP64

USB input format supported: PCM 16-32bit/44.1-384kHz; DSD DOP64-DOP256;DSD Native DSD64-DSD256

IIS input format supported: PCM 16-32bit/44.1-384kHz ; DSD DOP64-DOP256 ;DSD Native DSD64-DSD512.

*OS support: WIN XP/WIN7/WIN8/WIN10 32-64bit; Mac OSX; Linux

Analog Output

Frequency response:	20-20kHz /-0.1dB
SNR:	>129dB
Channel crosstalk:	-137dB @ 1kHz
THD+N:	<0.0006%
IMD:	<0.0006%
RCA output level:	2Vrms @ VOLUME -02dB
XLR output level:	5Vrms @ VOLUME 00dB

Others

Power Supply:	AC 115V/230V 50/60Hz
Total Power Consumption:	<50W
Dimensions:	W330mm * H65mm * D260mm (Excluding protruding part)
Weight:	7Kg (With packaging)

Product Warranty:

You will enjoy the 2-year free warranty and lifetime maintenance after the date purchasing GUSTARD' s DAC-X22 product.

* The manufacturer bears only the freights from Chinese mainland. Part of the freight and tax generated from overseas will be solved by the user with the dealer negotiation.

Free Warranty Service

GUSTARD DAC-X22 from the purchasing date in the free warranty period, the user uses the product in normal, and the product fails due to component quality or manufacturing problems.

Beyond the Warranty Service

Belonging to one of the following circumstances, products are no longer provided warranty service.

a. Products from the date of purchase has exceeded a predetermined warranty period.

b. Model, barcodes and purchase date do not match the actual product and warranty card.

c. Without GUSTARD technician permission, unauthorized modifications to the circuit, components or self-repaired product.

d. Damaging caused by irresistible natural forces.

e. Beyond the permitted use of environmental damage.

f. Damaging due to incorrect use or improper storage. Including but not limited to: the voltage is too high to burn the circuits or components; Bumping and resulting in damaging the shell or internal; damaging due to water, oil, liquid and excessive dust; product oxidation or corrosion, etc.

g. Beyond the warranty period, such as an individual component damage, appearance due to human damage, firmware modifications lead to unable to work by unauthorized users. GUSTARD commits to take reasonable maintenance fees (except large area components or circuit board burned beyond repair). Freight and maintenance costs, material costs are required the user to bear.