

Manual

A16 AE

professional 16 channel AD/DA converter

FERROFISH
advanced audio applications

Introduction



Thank you very much for choosing to purchase this product.

The A16 AE can convert simultaneously, 16 audio channels from digital to analogue (DA) and 16 audio channels from analogue to digital (AD). You can use ADAT as digital interface, or MADI (optional).

The two TFT screens display the levels of all inputs and outputs in high resolution.

The A16 AE combines high quality 'audiophile' conversion characteristics with flexible routing / I/O that fits seamlessly into your professional studio.

Software und Updates

For further information and current drivers and software please visit our website: www.ferrofish.de

Operation

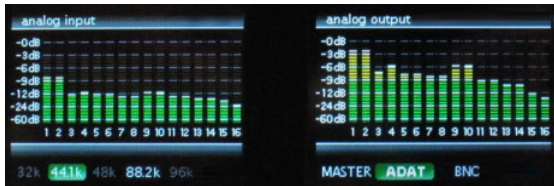
The A16 AE can be controlled via three front panel buttons **SAMPLE RATE**, **SYNCHRONIZATION** and **MENU**. Alternatively, you can use your PC to remote control the A16 AE using the MIDI interface.

In the *main screen* the frequency and synchronization can be set using the corresponding buttons.

Pressing **MENU** opens the main menu, where you can navigate with the **SAMPLE RATE** and **SYNCHRONIZATION** functions.

Pressing **MENU** again will then confirm the selected function choice.

main screen



The TFT main screen shows all 32 channels of the A16 AE as well as the basic settings of *sample rate* and the input signal from which the A16 AE takes it's timing.

Digital Interfaces

Every digital device requires a sampling rate for proper operation. The A16 AE can either generate such sampling rate itself (Master) or receive it from another device (Slave).

It is important that all devices within a digital domain work with the same sampling rate. For that reason there has to be exactly one master generating the sampling rate, while all other devices have to refer to this sampling rate as a slave.

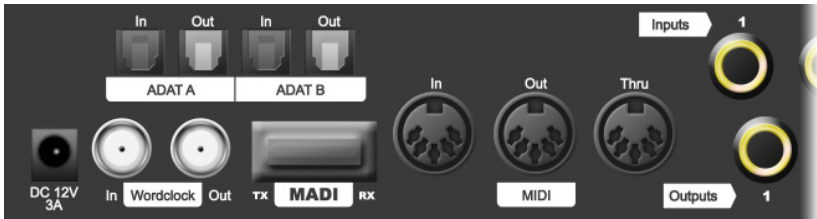


It is not possible to connect two master devices with each other, even if set to the same sampling rate. Because the units are not synchronized, even the smallest variations of the sampling rate would cause failures.

With the **SYNCHRONIZATION** button you can select whether the device shall be master or slave to MADI, ADAT or BNC.

If the corresponding field in the TFT is green, the A16 AE found a valid sampling rate at the selected input.

In case you have set the A16 AE as MASTER, it will generate the sampling rate. Now you can select the frequency between 32kHz and 96kHz via **SAMPLE RATE**.



ADAT

ADAT is probably the most common digital audio connection used in multichannel interfaces. Since an ADAT cable can transmit 8 channels only, the A16 AE has two pairs of this interface. The number of available channels is only half or only a quarter in case of higher frequencies:

| Frequency | ADAT Channels |
|-----------------------|----------------|
| 32kHz, 44,1kHz, 48kHz | 2 x 8 channels |
| 88,2kHz, 96kHz | 2 x 4 channels |
| 192kHz* | 2 x 2 channels |

* only supported with installed MADI option.

If you use ADAT for higher frequencies, the first 8 (or 4) outputs will be used only. The remaining outputs will repeat the signal of the first 8 (or 4) outputs. Only the first 8 (or 4) channels will be used as analog inputs respectively.

Set the desired mode using the **SAMPLE RATE** button.

MADI (option)

MADI is a very popular audio interface offering 64 channels at a maximum cable length of 2 kilometers!

Furthermore, when using more than one A16 AE, it is also possible to *daisy chain* the MADI cable. In this case the

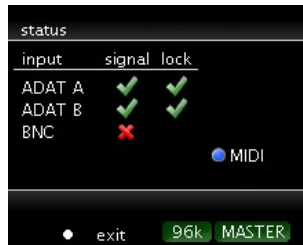
device's output will be connected to the next device's input. Hence you can connect, for example, four A16 AE in a row in order to use the maximum number of 64 MADI channels.

For more information concerning the MADI upgrade please visit our website: www.ferrofish.de/upgrade

WORDCLOCK

When using many devices which should run with the same sample rate, it is a good idea to use the Wordclock (BNC) connection of the A16 AE. It has both in and out connections to synchronize timings between multiple devices. The A16 AE can output a master wordclock, or accept (and then throughput) a signal from other devices.

status screen



The *status screen* is a useful help when configuring the A16 AE, giving an overview of the digital inputs. To activate it, press **MENU** and then select *status*. The screen shows for every digital input, whether it receives a valid signal (*signal*) and whether this signal's sampling rate is correct (*lock*). Only if both conditions are met, the A16 AE will use the signal.

Analog Interface

All analog in-/outputs are balanced and can be adjusted to levels from -10dBu (“consumer”) to +4dBu (“professional”).

If you adjust the output, for example to +4dBu, you should set the corresponding input to -4dBu in order to balance the amplification one by one.

In doing so you can adjust the level of each channel individually.

The settings are chosen in a way that, in case of analog full scale, a headroom of 6dB remains to avoid any digital clipping.



Hence you can amplify the inputs by max. 6dB without the converters of the A16 AE distorting the signal. Accordingly the output signal will be on full scale if the digital signal is still below 6dB.

The following table shows the common standard levels and the corresponding level adjustment of the A16 AE:

| Setting | Application |
|----------------|--------------------------------------|
| +4dBu (+6dBu) | Professional level with 6dB headroom |
| -2dBu (+6dBu) | Professional level without headroom |
| -10dBu (+6dBu) | Consumer level with 6dB headroom |

Level and gain screen

All analog levels and gains can be adjusted independent of each other in steps of 0.5dB. Please press **MENU** and then select *level* or *gain*.

Now you see a fader for each of the 16 channels (depending on the selection either the input channels or the output channels). In the first step you select those faders you want to move. You may select various groups of faders or individual faders.

Next, press **MENU** in order to move the selected faders. In the top right corner of the window you can see the current level of each fader.

Press and hold **MENU** to leave the settings menu.

Software

The remote control software for the A16 AE you find on our website. In addition you will find a program to upload your own logo in the A16 AE.

Please visit the download area of our website:
www.ferrofish.de

CE / FCC Compliance

This device complies with the limits of the European Council Directive on the approximation of the laws of the member states relating to electromagnetic compatibility (RL89/336/EWG, RL73/23/EWG).

This device complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules.

RohS

This device has been soldered lead free and fulfills the requirements of the RohS directive.

Information about Disposal



According to the Directive on Waste Electrical and Electronic Equipment – RL for electrical and electronic devices) RL2002/96/EG this device has to be reused or recycled after its usage.



Warranty

Each A16 AE is tested by us and all functions are checked extensively. Only high quality components are used, which enables us to give two years full warranty. As confirmation for the purchase date please keep the sales receipt.

In case of a defect please consult your dealer. Defects, which are caused by improper installation or use are not subject to the warranty. In this case the repair is with costs.

Compensation in any kind, i.e. of secondary damages is excluded. Any liability beyond the merchandise value of the A16 AE is excluded. General terms and conditions of Ferrofish GmbH apply.

Disclaimer

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