



D. A. I. S.

Digital Audio Interconnection System User Manual

**Audio-Service Ulrich Schierbecker GmbH
Schnackenburgallee 173
22525 Hamburg**

**Tel.:049 40 / 851770-0
Fax.:049 40 / 8512764
e-mail: mail@audio-service.com
internet: <http://www.audio-service.com>**

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Introduction

Congratulations on the purchase your **D.A.I.S.** !!!

The **D.A.I.S.** is in principle a patchbay, the patching however is achieved electronically and dispenses with the need for patchcords. The setting of cross-over points is comfortably enabled through an x/y matrix using a Windows 95/98/NT or Mac (Soft PC) platform.

Further main features of the **D.A.I.S.** are signal distribution, and the format conversion of digital input signals.

The system operates using the already widespread Yamaha CD8 series interface cards (02R and 03D). Supported formats are AES/EBU, ADAT, TDIF (Tascam) and Y2 Yamaha (Optional AD/DA converter)

The **D.A.I.S.** router is controlled by a routing matrix software via RS422, RS232 interfaces (Com Port) or via midi connection.



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Audio Service Ulrich Schierbecker GmbH
Schnackenburgallee 173
22525 Hamburg
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Safety information

Please carefully read the following safety information before commencing installation of the D.A.I.S..

Failure to follow the listed safety information may lead to severe or even fatal injury

Attention! This appliance must be earthed. The power supply must always be disconnected at the mains before any installation work is carried out.

Please follow these precautions, to avoid accidents or injury, or any damage to this appliance or other appliances or property.

- ! Take care to avoid contact with any sharp metal edges or protrusions.
- ! The **D.A.I.S.** is sensitive to static charge. Before installation work commences you are advised to discharge any static electricity from your body by first touching the metal casing of the **D.I.A.S.**
- ! The equipment contains no user servicable components, do not at any time attempt to open the casing.
- ! Maintenance or repair should only be carried out by suitably qualified persons.
- ! Ensure that the equipment receives adequate ventilation from above and below. Should the **D.I.A.S.** be mounted into a rack containing heat emitting devices such as amplifiers, power supplies etc, we strongly recommend that the rack is fitted with cooler fans, in order to reduce the amount of residual heat within the rack.
- ! By rack mounting be sure to use the delivered front and rear mounting brackets.
- ! Do not expose the **D.I.A.S.** to moisture or operation in humid conditions, this may lead to a malfunction, or indeed severely damage the equipment.

Audio-Service GmbH cannot be held responsible for loss of data, damage to property or any injuries, which may occur through improper operation or handling

Upon delivery please inform your dealer or Audio-Service GmbH, Hamburg, immediately over any transportation damage, shortfalls, or any apparent malfunction of the equipment.

Installation of Hardware

Unpacking

Please check the **D.A.I.S.** for any transportation damage and for shortages in the items of hardware or software. Register any damage or shortfalls immediately with your supplier. It is advisable to retain the original packaging, it is the best possible way to protect the equipment during future transportation. The delivery should consist of the following items,

- ! **D.A.I.S.** Rack & Mounting Hardware
- ! System Software (1 x 3,5" Disc)
- ! P C Connecting Cable LS 232 (5 Meter)
- ! Owners Manual & Installation information

Rack Mounting

Should you propose to install the **D.A.I.S.** into a rack, it is of the utmost importance that the supplied front and rear mounting brackets be used.

Please note that the ambient temperature should not rise to over 35°C. This limit will be exceeded in a non ventilated rack, especially when the rack contains other heat emitting devices (Amplifiers, etc)

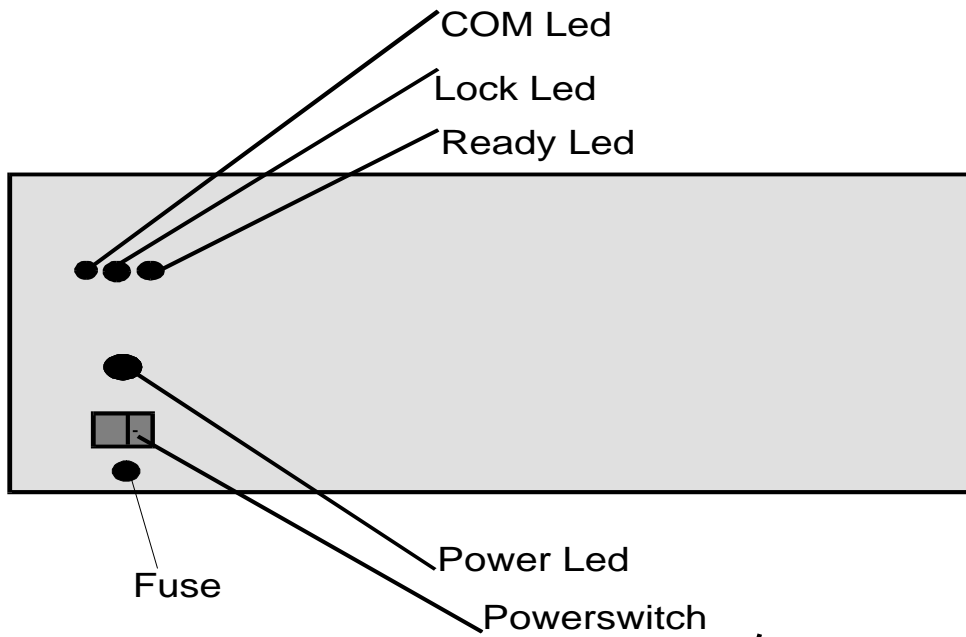
Installation Precautions

- ! Before beginning the installation, switch off all power to the main unit and connected peripherals, disconnect all units from the main power supply.
- ! Remove all interconnecting cables between the main device and the peripherals (leaving power cables attached while working on the units will lead to the risk of electrocution and interconnection cables may interfere with the installation work)
- ! Module components can be damaged by electrostatic discharges, be sure to drain off any such charges from both body and clothes before starting the installation
- ! Do not touch module components, board circuitry, and metallic leads during installation.
- ! Take care to avoid dropping screws or other foreign matter into the equipment during the installation work. Should such items fall into the unit during installation be sure to remove such items before reassembly and power up. Starting the unit with such items inside could lead to the risk of malfunction during operation, or even unreparable damage.

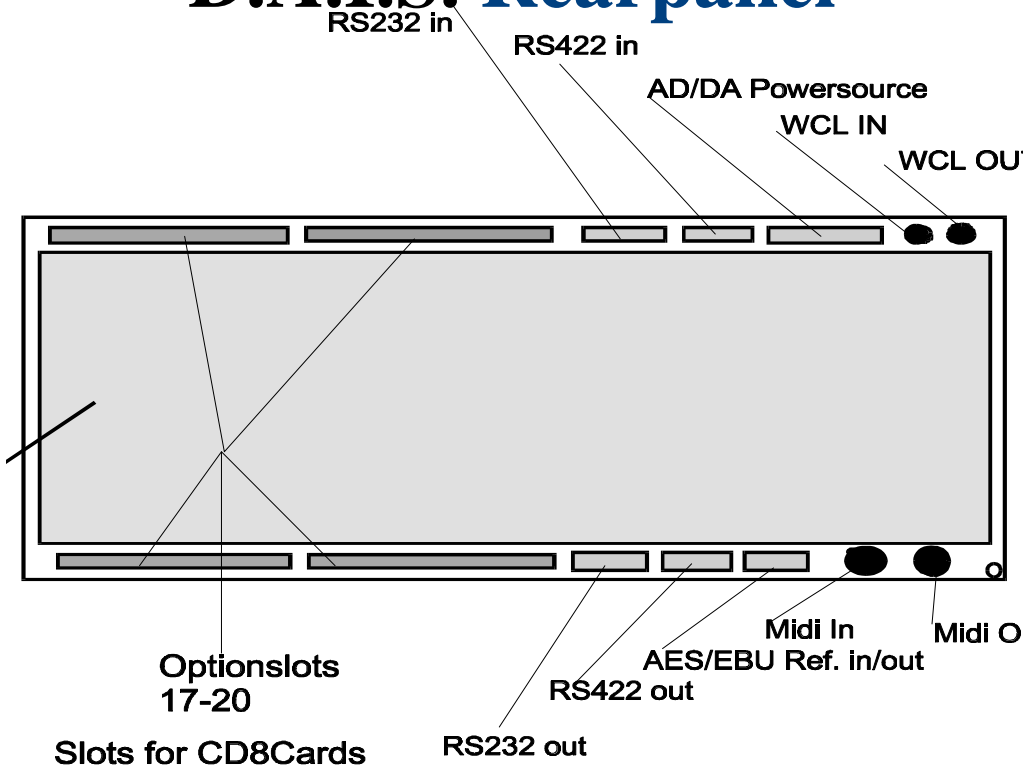
Installation

- ! Using the supplied cable (LS232) connect your computer with the **D.I.A.S.** (Normally over the Com 2 port as Com 1 is normally reserved as the mouse port).
- ! Connect the the Interface Cards (CD 8) to the corresponding periphery as required.
- ! Power up the computer and the **D.A.I.S.**

D.A.I.S. Frontpanel



D.A.I.S. Rearpanel



Installation of Software and Operating Instructions

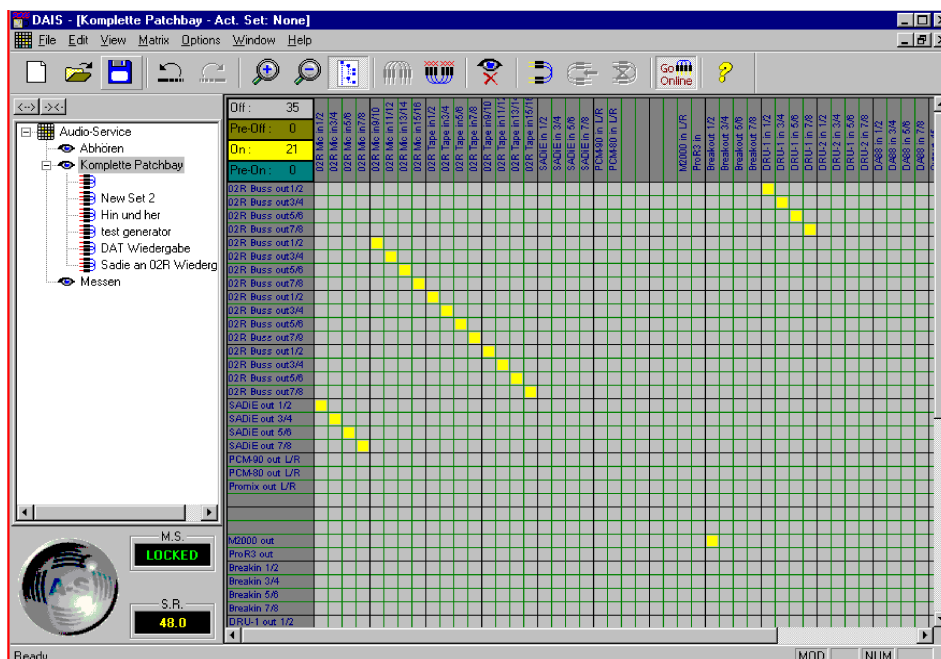
The **D.A.I.S.** system software is included in the delivery package and consists of one 3,5" floppy disc. In order to operate the **D.A.I.S.** under a Windows platform you will require the following hardware and software.

- ! A Pentium processor
- ! 32 megabytes (MB) of RAM.
- ! Windows 95/98 or NT system software.
- ! 3,5" floppy disc drive
- ! Mouse

Software Installation

Insert the 3,5" floppy disc into your disc drive and start the set up program (A:\setup) The **D.A.I.S.** installation guide will be displayed on your monitor screen, and will guide you through the installation procedure.

(NB towards the end of the installation procedure you will be asked whether or not to update %comct32dll\$ should be installed, this data is only required by users working under a Windows NT platform, users working under Windows 95/98 should answer this question with a %No\$). Once the installation procedure is completed the **D.A.I.S.** program may be accessed in the Windows start menu.



D.A.I.S. Set Up

Before commencing work with the the unit must first be configured.The main PC and Card configurations are carried out in the Hardware window.

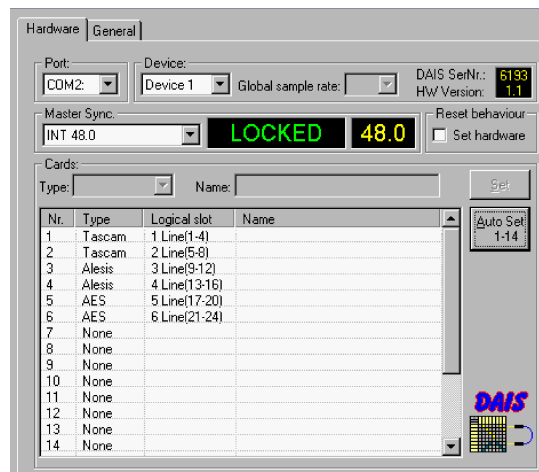
The hardware window contains information on, and allows access to the following settings.

- ! The field **Port** enables selection of the desired PC input port (usually Com 2)
- ! The field **Device** indicates the number of the device to be configured.
- ! The field **Master Sync** indicates the master synchronisation source and is coupled to two display fields, the first indicating the current status **Locked** or **Unlocked**, the second field displays the **Sample Rate**.
- ! The **Reset Behaviour** feature in the **Set Hardware** field is activated by clicking in the display box. In the default mode (crossed is on) the **D.A.I.S.** will accept information from the PC once the **Go Online** button is activated, and will configure itself accordingly, in the off position the procedure is reversed and the PC will "read " information from the **D.A.I.S.**
- ! The button **Auto Set** enables the automatic recognition of up to 14 interface cards. (**NB** cards 17 - 20 must be set up manually)
- ! The button **Set** is used when confirming manual configurations.
- ! The **D.A.I.S.** serial number and the hardware version number are displayed in the top right hand corner of the hardware window.

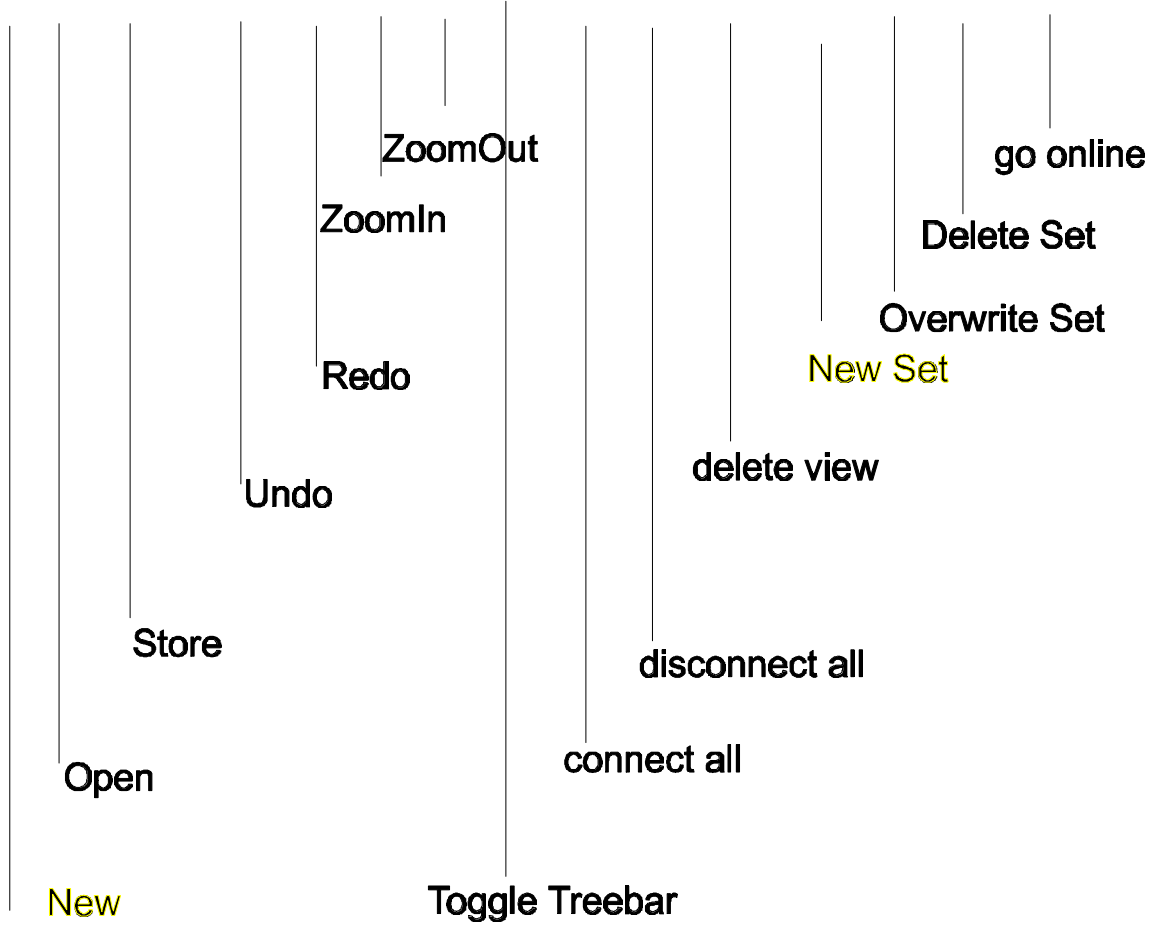
Initial Set Up

The first step following the manual assembly works (control card installation etc) is to allow the **D.A.I.S.** to recognise the installed control cards, to accomplish this proceed as follows,

- ! Enter the **Hardware** window and in the **Reset Behaviour** field set the **Set Hardware** feature to default (on).
- ! Click on the **Auto Set** button, and the system will recognise and allocate a "slot" to each of up to 14 Interface cards. Any unoccupied slots will be shown in the display as **None** (please remember cards 17 - 20 are optional and must be set up manually).



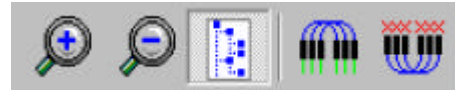
View of the Function Bar



Basic Functions

A total of fourteen Yamaha CD8 interface cards may be loaded into the **D.A.I.S.** Each card controls eight inputs and eight outputs. A patchbay size of fifty six by fifty six stereo channels is obtainable when the **D.A.I.S.** is fully loaded.

The Basic Matrix display will appear on start up of the software. The **Windows Toolbar** is situated in the uppermost display. Immediately below this the **D.A.I.S. Basic Functions Toolbar** is displayed, the functions are accessed through a mouse click on the appropriate symbol (e.g. Open, save, undo, redo, zoom in, zoom out etc).



The **D.A.I.S. File Path** is situated on the left hand side of the screen (the file path can be blended in or blended out using the **toggle tree bar control**) displayed here are the various patchbays, and configurations available to the operator. After "naming" and storing a new or amended patchbay configuration, it will be displayed here under its "name"

Next to the **Audio Service logo** are the displays for **Master Sync** and the **Sample Rate**.

The **Matrix** or **Patchbay** is situated on the center to right hand side of the screen. All **Matrix Inputs** are displayed in the **vertical axis** (to the left of the Matrix), all **Matrix Outputs** are displayed in the **horizontal axis** (above the Matrix). The inputs and outputs can be "named" by clicking in these fields.

A Crosspoint is set by a "double click" on the appropriate matrix square, the matrix square will turn "yellow" in colour. It is also possible to set several crosspoints by "dragging" the horizontal or diagonal matrix squares, during this operation the matrix squares will turn "green" until the revised set up is confirmed using the **"switch all presets"** button at this stage the relevant matrix squares will turn "yellow". Crosspoints may be deleted using the **"switch all off"** button, in this case an appropriate "safety screen" will appear requesting confirmation of this action.

The **Matrix Status** is permanently displayed **Matrix Display** and indicates the number of,

- ! Off connections
- ! Pre off connections
- ! On connections
- ! Pre on connections

Off :	3
Pre-Off :	1
On :	59
Pre-On :	1

in the top left hand corner of the

Should the monitor screen be unable to accommodate the entire **D.A.I.S.** display, the respective position in the patchbay is shown parallel to the mouse cursor (Tooltip). This **Tooltip** will be displayed with contrasting background colours, a **white background** indicates that the cross point is free and has not been allocated or set, a **yellow background** indicates that the crosspoint has been already allocated in a synchronised patchbay.

The Matrix to screen ratio may also be adjusted using the **Zoom in** or **Zoom out** feature.

Data flow to the host computer is enabled by the **Go Online** button. Naturally it is possible to set or delete online crosspoints at any time.

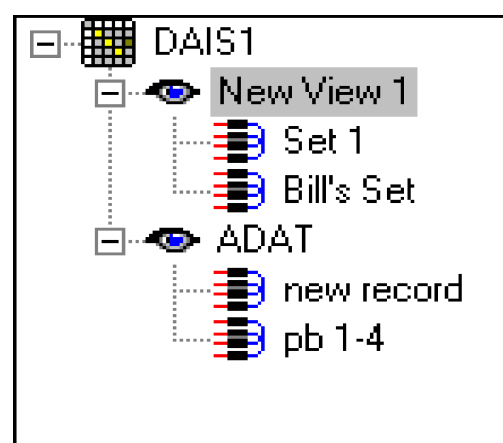


Patchbay Structure

As mentioned previously the basic matrix is visible upon system start up. Up to twelve basic configuration may be stored using the the **Preset Memories** (Shift plus F1 - F12). e.g, the settings for the hardware controller, the sync card, the output settings etc.

A restricted matrix (**View**) display (eg to set up a control room matrix) is established as follows,

- ! Select the first crosspoint with the right hand mouse key (**define view start**) the crosspoint will be highlighted in blue.
- ! Using the same procedure establish the second (end) crosspoint from the opposing matrix axis (**define view end**).
- ! When both points are defined, a menu will open in which a view "name" may be assigned. A view may be further sub-divided into lots of sub-sections (**SETS**), in which different specified crosspoints are stored into the matrix. These sections can be reactivated from within the file path through a double click on the respective set "name".



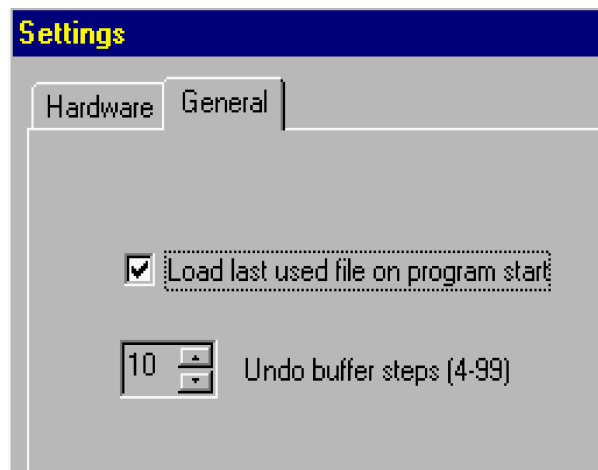
New matrix settings are enabled in the **Status Bar** menu **Matrix**, by selecting **New Set** in the drop down menu. Once the new matrix set up is defined it should be named and stored by clicking on "OK". The new set up will then appear in the tree bar field on the left-hand side of the monitor screen. All set ups and views may be deleted from within the Matrix menu using the selections **Delete View** or **Delete Set**. The **Overwrite Set** option enables the editing of existing matrix set ups.

General View of the Status Bar



As described above the **D.A.I.S.** status bar enables access to the special functions. Divers commands are to be found under the menu **File**, for example **Save, Open** and **Close**. Under the menu **Edit** the **Undo** and **Redo** functions are to be found. Under the **View** menu the three main function fields **Toolbar, Status Bar** and **Treebar** can be activated or de-activated as required, whilst in the menu **Matrix** the **Go Online, All Off, All Off, View** and **Set** functions may be selected.

An important feature is to be found in the menu **Options**, under the option **Settings** in the drop down menu the number of **Undo Buffers** can be adjusted in the **General** sub menu. The function "**Not losing the last set**" is also to be found in this sub menu, activating this feature ensures that actual settings will not be lost in the event of a system failure.



Synchronisation

The **D.A.I.S.** can function as either a Master or a Slave unit within a digital audio installation. In the Master mode it is possible to switch between the internal Sample Frequencies of 44,1 Khz and 48 Khz.

When the **D.A.I.S.** is integrated as a Slave unit, **one**, of sixteen Synchronisation sources may be selected by the user, either,

- ! Word Clock Input.
- ! AES Ref Input.
- ! 3 - 16, Channels 1 and 2 from each of the 14 Yamaha YGDAI interface cards.

The **D.A.I.S.** is in principle synchronised with the Yamaha YGDAI interface cards (CD8 series). That is to say that all audio signals should be synchronised to each other, failure to observe this rule may lead to audible clicks or distortion.

Format conversion **and** signal conditioning is only possible with these **or** the following interface cards,

- ! Audio Service unsynchronised AES interface card (allows the connection of equipment with different sample rates in a synchronised patch bay. (synchronised and unsynchronised Patchbay in a **D.A.I.S.** system).
- ! Amptec AES/EBU interface cards with an integrated sample rate converter.

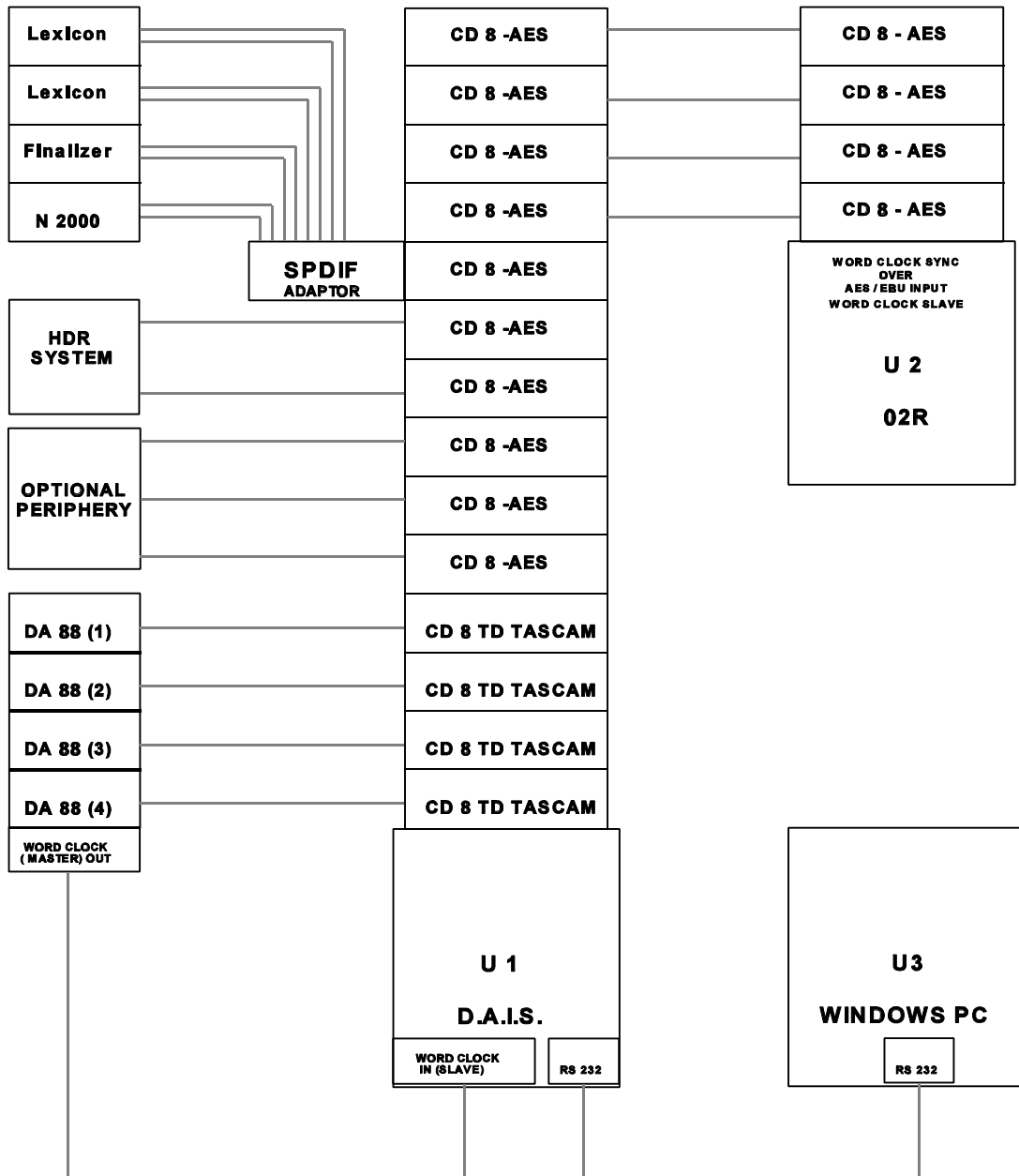
Optical Warnings

The **D.A.I.S.** main screen also integrates a visual control of Interface card and Synchronisation status. Should the set up of an Interface card change during operation, the relevant channel in the Matrix display will be displayed with a Red background.

Should the Master Sync Mode go out of the Lock mode the Audio Service Logo will turn Red and begin to blink. A mouse click on the logo will restore the display to its original status.

The following schematic represents a **D.A.I.S.** working as Slave to a Master DA-88 Recorder.

Schematic Example



Technical Specification

Frame: 19" Standard Rack Mounting
4 HE
Sockets for 14 Single slot Cards or 4 Double slot Cards

Router: 72 x 72 Stereo Crosspoint Matrix
Total of 144 Channels
56 Inputs / Outputs (Yamaha YGDAI Interfaces)
16 Inputs / Outputs - Passive AES / EBU

Compatible YGDAI Cards:

Yamaha CD8-AES	AES/EBU	25 Pin Sub-D	1H
Yamaha CD8-AT	ADAT Optisch	Toslink x 2	1H
Audio-Service CD8MYAT	24Bit ADAT Interface		1H
Yamaha CD8-TD II	T-Dif II	25 Pin Sub-D	1H
Yamaha CD8-Y2	Yamaha Y2	25 Pin Sub-D	1H
Yamaha CD8-AE	AES/EBU	4x XLRm,4xXLRf	3H
Audio-Service CD8SDIF-2	Interface	2 x Sub-D	25 1H
Yamaha CD8-ADS	AD Karte	8 x Klinke6,3	1H
Yamaha CD8-AD	A/D-D/A Karte	16 xKlinke6,3	3H

*(only in conjunction with an additional Power Supply)

AMPTEC CD8SRC AES/EBU mit SRC's 25 Pin Sub-D 1H

Passive AES/EBU Cards:

Audio-Service AS-8P 4 x AES/EBU In / out 25pin Sub-D 1H
Audio-Service AS-9P 4 x AES/EBU In / out 25pin Sub-D
for Slots 17-20

Sync: Internal 44,1 Khz and 48 Khz
External Wordclock BNC In / BNC Out
AES / EBU Reference Sub D

Control: RS 232, RS422, Midi.

Software Requirements: Windows 95 / 98 / NT or MAC (Soft PC)

Power Requirements: 95 - 240 Volts AC

Dimensions: 19" x 4 HE x 50 cm

Weight: ca. 10 Kilogramm

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Declaration of Conformity

Audio Service Ulrich Schierbecker GmbH
Stresemannstrasse 268
22769 Hamburg
Germany

declares under their sole responsibility that the product

D.A.I.S.
(Digital Audio Interconnection System)

to which this declaration relates, is in conformity with the following
standard(s) or other normative document(s)

EN 55013/90 EN 55020/94 EN 6100-3-2/95

following the provision of the EMC directive.

89/336/EEC

Issued in Hamburg, the

Ulrich Schierbecker
General Manager