Series 52

52/DX Compact Mixing Console Manual

Version: 1.2.0

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1 Terms of Use - Legal Disclaimer

Series 52

52/DX Compact Mixing Console Manual

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Version 1.2.0, 04.02.2013

2 About this Book

This book will provide you an overview about the applications of the 52/DX Compact Mixing Console.

The content of this manual is subject to change without notice. DHD recommends to visit the DHD website once in a while to check if there is a newer version of this document available.

How to Use this Book

The Navigation Tree

You can find the navigation tree on the left-hand-side of the PDF document. Via the entries of this tree you can directly reach the several chapters and sections of this document. Click onto the text or the symbol of an entry to display its content.

If a chapter includes further sections, you will find a plus-symbol in front of the entry in the navigation tree. Either you can click onto this plus-sign or you double click the text or the symbol of the entry to make the sub-branches of the further sections visible.

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You can find an alphabetical ordered list of keywords at the end of the document. Please see the page numbers in this index to find the respective keywords in the document.

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Links

Links are underlined to separate them from the rest of the text. These links can be a connection to other chapters or sections in the same document or to an URL (internet address).

- Same document: The hand symbol appears if you move the mouse over the link.
- URL: The hand symbol with an additional w appears if you move the mouse over the link.

Please notice, that you need an active internet connection to be able to execute a link to an URL.

The Meaning of Advices in the Text

Warning	The demands and advices in this fields should be followed **unconditional**, because otherwise hardware and software products, data bases, as well as persons may suffer a loss.
Important	The demands and advices in this fields should be followed, because these contents are necessary for the proper operation of the DHD systems.
Note	Recommendations and further information are marked as notes. Sometimes you will also find off-topic content in this field, which is related to the actual topic.
Tip	Tips are helpful advices, which should make work with DHD systems easier.
Weblink	In this fields you can find links to websites, which include for example an other manual or the possibility to download a driver for the respective DHD system. Please notice, that you need an active internet connection to be able to execute a link to an URL.
Download	You can directly open and download a file if the respective link is marked as download link (file link).

3 What is new in this version of the manual?

All sections that had been added, deleted or changed are listed below. Click on the entries to reach the respective sections directly.

Current version (1.2.0) (related to DXConfig, version 7.1.13):

Chapter / Section	State	Note
General	changed	removed wrong search results in online manual

Version 1.1.0

Chapter / Section	State	Note
Configuration - I/O Settings	changed	Information changed: • Headroom --> Level Adjust
Configuration - Console	changed	Information changed: • TFT view names changed Stpw --> Tmr • standardisation of use of keys and buttons
Components - Control modules - Central module	changed	Information changed: • standardisation of use of keys and buttons

Initial version (1.0.0) (related to DXConfig, version 7.1.4):

Chapter / Section	State	Note
All sections.	added	Information added.

4 General Information

Safety Instructions

Ignoring the following safety instructions may lead to accidents with severe, life-threatening injuries, caused by fire or electric shocks.

Always act according to the directions of this manual.

Fix the device well in a rack or studio furniture with the mounting orientation given by DHD.

Only connect the power cable of the device to a socket, which carries the voltage stated on the specification plate.

Important

Make sure that the ventilation openings of the device are not covered and that the environmental temperature is ok to assure sufficient heat flow. (See Installation Guide)

Do not place heavy objects on the device.

Important

Do not place drinking vessels or any other vessels with liquids on the device or close to it.

The device or parts of the device can get very warm during the usage. Please be careful when touching the device after a longer operating time.

Important

Changes according to hardware configuration may only be done by qualified personnel (e.g., exchanging modules).

Care Instructions

Important

The cleaning of a device should be done in Off-Air mode as possible. That means the device does not handle relevant audio and/or logic signals that are integrated in the current broadcasting process.

To clean your DHD device, in general a soft, lint-free and dry cloth is sufficient. In case of severe soiling, you can use a damp cloth and household detergent.

Important

If a damp cloth is used for cleaning, you have to switch off the DHD device and to disconnect all hot cables from it.

Warning

Never use a dripping wet cloth. **In no case** water and/or cleaner may enter the device, since this could lead to electric shocks and fires!

Warning

Never use solvent or thinner for cleaning the surfaces. Furthermore, **do not** use abrasive as well as sharp objects for cleaning. You will damage the surface of the device.

5 Key Features

The Series 52 Mixing Console 52/DX has been designed to be an easy-to-use tool for a broad range of TV and radio broadcasting applications. With its 4 faders and its compact table top design, it is ideal for OnAir, in the OB van, for News, Edit- and Ingest Stations.

The 52/DX uses a special real-time operation system running in the 52/XS Core. There is no PC-based system inside and it works completely without any PC.

The configuration software runs on standard Windows(TM) based PCs. However, this PC is not required to run the 52/DX from day to day – it is only needed for setting it up.

A Series 52 Mixing Console 52/DX remotely controls the processing power of a 52/XS core via TCP/IP. The combination of the proved and reliable DSP power of an 52/XS Core provides you with a great variety of features.

The configuration of the console is realised via a simplified version of the well-proven DHD Toolbox5, called DXConfig. The 52/DX allows to make use of the established DHD-PC software products: DSP-Control-Software, Remote-Control-Software, Snapshot-Manager, Snapshot-Server. A XS Core extended feature upgrade licence provides Toolbox5 configuration capability like other Series 52 products.

Download

You can download a PDF-file with the functional range of all Series 52 Core devices directly from the following link:

xc_xd_xs_core_functional_range.pdf

6 Components

The audio and logic system of the 52/DX Compact Mixing Console consists of the 52/XS Core (DSP unit), the I/O boxes (the input/output modules) and control modules.

In the following sections, these main components of a 52/DX mixing console are presented in detail.

6.1 XS Core - DSP unit

The powerful 52/XS Core is an independent DSP system which does not require a PC for operation. There are no fans, hard discs or batteries inside the 52/XS Core and in the I/O boxes, allowing silent and low-maintenance operation directly in the studio.

High-performance 40-bit floating-point digital signal processing for:

- 3-band fully parametric equalizers, subsonic filter, dynamics, limiter, delay for all 16 fader channels, mono or stereo
- 32 summing busses (mono), Aux busses, clean feeds and PFL
- 6 clean feeds (mix-minus, mono or stereo)
- 4 monitoring busses for control room and studio support
- flexible talkback, logic and GPIO system
- integrated routing matrix
- internal tone generator
- Gigabit audio network for 512 input and 512 output channels for low-latency interconnection between 52/XS cores or to other DHD products
- internal or external 48 kHz or 44.1 kHz sync

Other features of the XS Core:

- highly efficient external wide-range power supply, Energy Star Level V, redundancy option
- minimal system power consumption
- expandable modular system allows optional integration of other DHD product lines
- serial or TCP/IP interface options to radio automation or other external control systems

Front view 52-1804

Rear View 52-1804

In the following table the main Features of the 52-1804 with a 52/DX control module are listed.

Feature	**52-1804**
support for redundant power supply	yes
number of supported faders	4
number of supported I/O boxes	3
number of audio, power & control ports (APC)	4
serial interface for external control	yes
TCP/IP interface for external control	yes

6.2 I/O modules and connections

Different I/O modules for audio and control inputs and outputs can be used for the 52/DX. Please find more information about the I/O modules on the following pages.

It is also possible to connect two XS cores directly via Ethernet cable to exchange audio signals. Please find more information about this in the DeviceLink section.

6.2.1 XS Multi-I/O Box

The 52-1330 XS Multi-I/O Box is an input/output module with common audio interfaces for the 52/DX mixing console.

In the following table you can find the type and number of interfaces, which are available on each XS Multi-I/O Box 52-1330:

Interface type	**Number**	**Specifications**
Microphone/line inputs	2	-77…+18 dBu sensitivity
Headphone outputs	2	stereo
Analog line inputs	8	max. +24 dBu
Analog line outputs	8	max. +24 dBu
Digital inputs, AES3/EBU	3	sample rate converter, stereo
Digital inputs, S/PDIF	1	sample rate converter, stereo
Digital inputs, USB	2	sample rate converter, stereo

Digital outputs, AES3/EBU	2	sample rate converter, stereo
Digital outputs, S/PDIF	1	sample rate converter, stereo
Digital outputs, USB	2	sample rate converter, stereo
General purpose inputs	10	opto coupler
General purpose outputs	10	photo mos relays
Analog control inputs	2	for external potentiometers

Weblink

Please find a PDF file with pin assignments in the 52/DX Download area on www.dhd-audio.com.

Note

Breakout cables for the D-sub connectors of the 52/XS Multi-I/O Box are not available from DHD.

6.2.2 XC Mic/Headphone/GPIO module

The 52-7230 XC Mic/Headphone/GPIO module is an input/output module with microphone inputs and headphone outputs for the 52/DX mixing console.

In the following table you can find the type and number of interfaces, which are available on each XC Mic/Headphone/GPIO module 52-7230:

Interface type	**Number**	**Specifications**
Microphone/line inputs	4	-77…+18 dBu sensitivity
Headphone outputs	4	stereo
General purpose inputs	4	opto coupler
General purpose outputs	8	photo mos relays
Analog control inputs	4	for external potentiometers

Weblink

Please find a PDF file with pin assignments in the 52/DX list of modules on www.dhd-audio.com.

6.2.3 XC Digital I/O/GPIO module

The 52-7111 XC Digital I/O/GPIO module is an input/output module with AES3/EBU-S/PDIF inputs and outputs for the 52/DX mixing console.

In the following table you can find the type and number of interfaces, which are available on each XC Digital I/O/GPIO module 52-7111:

Interface type	Number	Specifications
Digital inputs, AES3/EBU	4	sample rate converter, 24 bit, stereo
Digital outputs, AES3/EBU	4	sample rate converter, 24 bit, stereo
General purpose inputs	4	opto coupler
General purpose outputs	4	photo mos relays

Weblink

Please find a PDF file with pin assignments in the 52/DX list of modules on www.dhd-audio.com.

6.2.4 XC Analog I/O/GPIO module

The 52-7222/52-7223 XC Analog I/O/GPIO module is an input/output module with analog line inputs and outputs for the 52/DX mixing console.

In the following table you can find the type and number of interfaces, which are available on each XC Analog I/O/GPIO module 52-7222:

Interface type	Number	Specifications
Line inputs	4	18 dBu max.
Line outputs	4	18 dBu max.
General purpose inputs	4	opto coupler
General purpose outputs	4	photo mos relays

In the following table you can find the type and number of interfaces, which are available on each XC Analog I/O/GPIO module 52-7223:

Interface type	Number	Specifications
Line inputs	4	24 dBu max.
Line outputs	4	24 dBu max.
General purpose inputs	4	opto coupler
General purpose outputs	4	photo mos relays

Weblink

Please find a PDF file with pin assignments in the 52/DX list of modules on www.dhd-audio.com.

6.2.5 DeviceLink

To exchange audio signals directly between two XS cores, you can connect them directly by a shielded CAT5 or CAT6 cable on an APC port on each XS core.

Important

To use the DeviceLink, each XS Core requires an `XC/XS Core Audio Network` licence.

Each DeviceLink connection can send and receive 48 audio channels at the same time. This connection does not transmit any control signals.

6.3 Control modules

The control module is the interface between the user and the functions of the mixing system. The 52/DX control modules has an integrated TFT Display. Due to it is sensitive to touch, you can design views with buttons to control functions via the TFT displays.

Weblink

For a comprehensive list of all 52/DX modules, please see the 52/DX List of Modules.

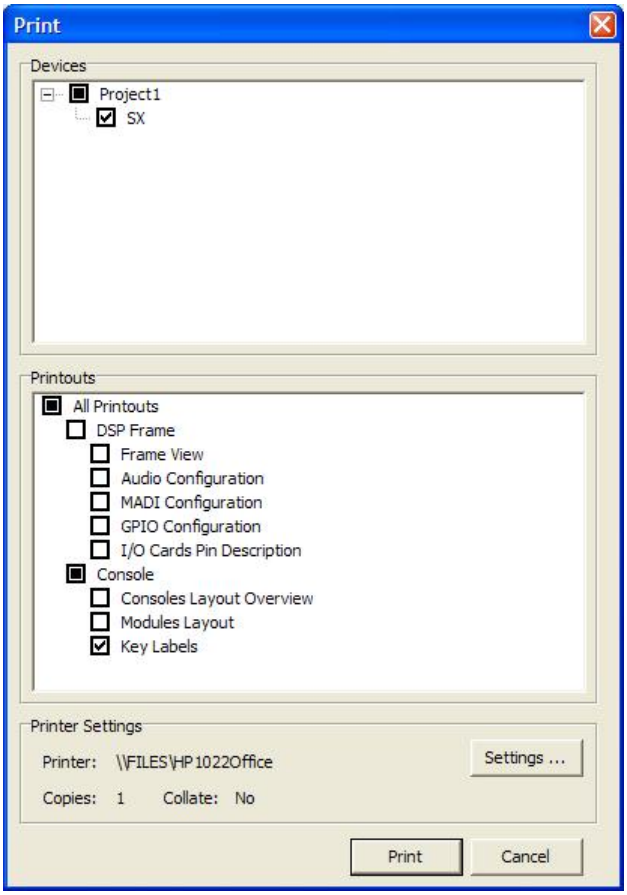
The control module consists of control elements – such as faders, hardware keys, TFT buttons, rotary knobs – and status indicators. These are for example LEDs inside the keys, or defined parts of TFT views. Some typical applications for displaying information to the user are:

- LEDs showing the PFL status for a given channel.
- An alphanumeric display shown on the TFT shows, which input signal is selected for a given channel.
- LEDs inside the keys are switched on or off to indicate the state of the key.

The control module is tightly integrated with the control engine. It collects all events from the faders, rotary knobs and buttons and sends back the information into the status indicators and displays.

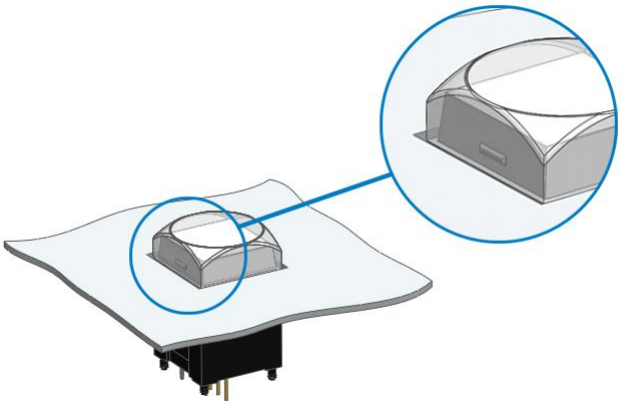
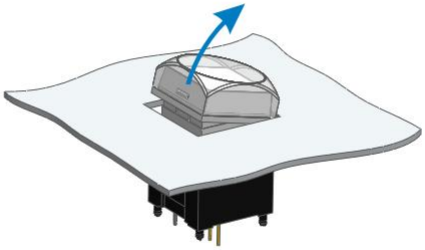
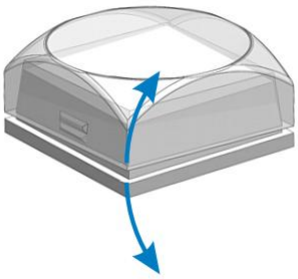
To make configuration easier, the software allows to print out labels for the keys of the control module. These labels are slid under the key caps. If necessary, they can be changed again later to reflect changes in the configuration of the system.

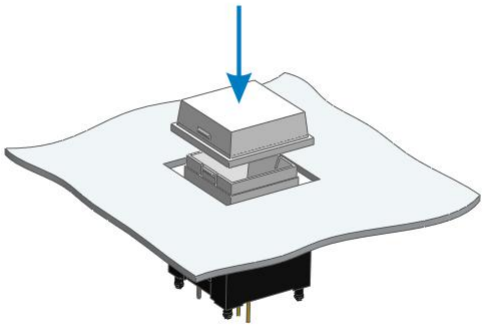
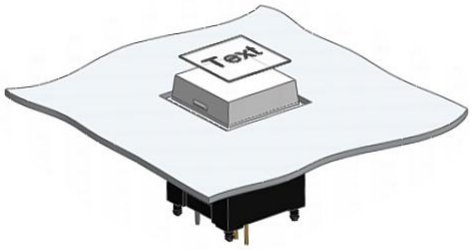
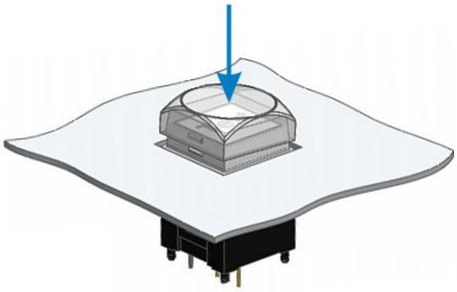
To print the key labels follow these steps:
1. In the `File` menu, select print. The `Print` window opens (see figure Print window).
2. In the `Devices` area, select the check box in front of the device name (e.g., SX).
3. In the `Printouts` area, select the `Key Labels` check box.
4. If required, change your printer in the `Printer Settings` area.
5. Click `Print`.



Print window

The keys on the control modules are labeled with their default functionality. You can insert printed film labels in the keys to customise the fader modules. To insert a label into the keys, follow these steps:

	1. The push-button caps can be removed to insert a customised label. Cap and diffuser are connected by a snap-fit on the right and on the left of the pushbutton.
	2. Grab the cap on the upper and lower side an pull it away from the black main part of the push button.
	3. Separate the white coloured diffuser and the transparent cap by pulling apart both parts.

	4. Put the diffuser on the main push-button part and push it down until the snap-fits click into their positions. Please make sure, that the snap-fits are located on the right and left hand side.
	5. Put a transparent film label (dimensions 12 mm x 12 mm) on the diffuser.
	6. Put the cap over the film label and the diffuser and push it down until the snap-fits click into their positions. Please make sure, that the snap-fits of the cap are located on the left and right.

6.3.1 52/DX control module

The 52/DX control module 52-1104 is a table top module including a 7" TFT Touch Display, 4 faders, push buttons, encoder and potentiometers.

52-1104 top view

1 The TFT/Touch Display shows diverse pre-set TFT pages. These pages show, for example peak meters, correlation display, clock, stopwatch and setting of EQ, dynamics unit, snapshots and other parameters. The main page can be changed to other preset pages in the configuration software.

This TFT display is not only able to show information. Due to it is sensitive to touch, you can use views with buttons to control functions via the TFT screens.

2 To change parameters of a selected channel, press the `Input`, `EQ`, `Dynamic` or `Aux` button to switch between the TFT pages. To save or load Snapshots press the Snapshot button.

3 When a channel is selected, you can use these TFT buttons to navigate between the `Input`, `EQ`, `Dynamic` or `Aux` TFT pages. When no channel is selected, you have access to the `Selector` view and the `add. Settings` view.

4 Access button on TFT Touch display.

With this button you can select a channel, on which you want to make further settings. If the button is pushed, and a TFT settings page is selected, you can see the associated settings, for example EQ settings on the TFT display. All changes belong to the selected fader channels. To deselect the fader channel, push the `Select` key again or select another fader channel by pushing the associated select key.
This Access button also provides additional information about the channel below, these are: the channel name, the used DSP functions, an input meter and the current gain value.

5 Encoder section for control of gain, EQs, dynamics and other settings.

The 52-1104 has four coloured encoders. These have two function modes:
- In case of no channel is selected by an access button, the encoders work as gain control for the fader channel below. On channels with a Microphone input source, you can change the encoder function to analog gain control (AGain) by pushing the encoder.
- When a channel is selected, by pressing an access button, the encoders work as control for parameters for EQ, dynamics, Aux etc. on the TFT/Touch display. You can see a coloured frame around the parameters on the TFT/ Touch display, this colour shows, which encoder controls which parameter.

6 The `Cue` key is similar to a PFL key. Push this key to route the pre fader signal of a fader channel to the PFL bus.

7 Use the fader to control the audio level from -oo to 0 dB with an additional gain of +10 dB.

8 Push the `ON` key to switch the fader channel on or off. If the key lights up, the fader channel is on.

9 `Program` monitor selector key, expanded by touch-display selector. When this key is pressed, the PGM bus signal will be switched to the monitor 1 bus. The preselected audio source of monitor bus 1 will be monitored again, when the `Program` key is off. (see Configuration - Console)

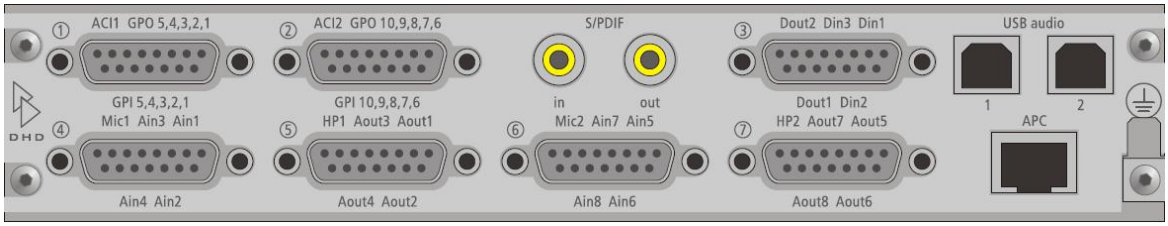
10 You can use these `GP` keys (General Purpose keys) to switch GPOs and get status signalisation from a GPI, or any other available logic source. (see Configuration - Console)

11 Professional high-grade volume potentiometers.

12 It is possible to configure this talk key for a simple talkback, for example to a sound booth or an additional mixing console. (see Configuration - Console)

7 Cabling

7.1 Pin assignment of 52-1330



Rear View 52-1330

The connectors of the 52-1330 are D-sub type (15 pins), apart from the S/PDIF, USB audio and APC.

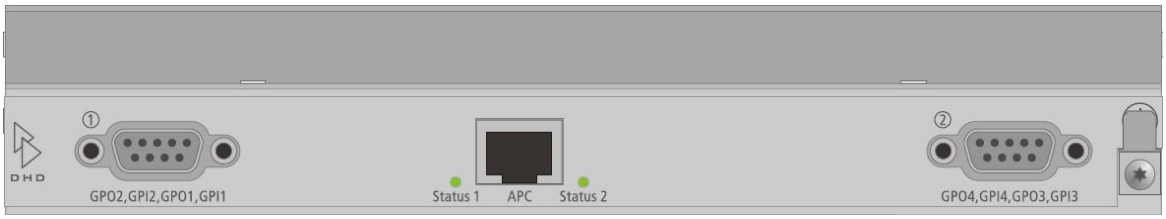
Weblink

Please find a PDF file with pin assignments in the 52/SX Download area on www.dhd-audio.com.

Note

Breakout cables for the D-sub connectors of the 52/XS Multi-I/O Box are not available from DHD.

7.2 D-Sub Pin assignment of 52-7111



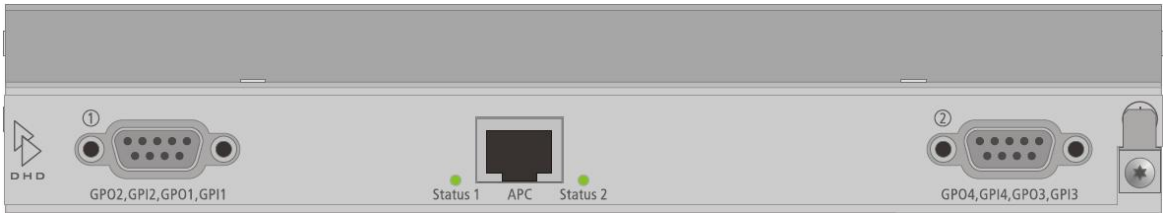
Rear View 52-7111

The connectors on the rear site of the 52-7111 are D-sub type (9 pins) and provide all GPIOs for this module.

Weblink

Please find a PDF file with pin assignments in the 52/DX List of Modules on www.dhd-audio.com.

7.3 D-Sub Pin assignment of 52-7222 / 52-7223



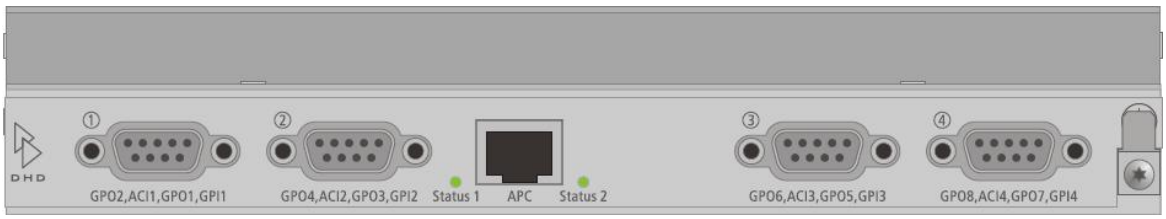
Rear View 52-7222 / 52-7223

The connectors on the rear site of the 52-7222 and 52-7223 are D-sub type (9 pins) and provide all GPIOs for this module.

Weblink

Please find a PDF file with pin assignments in the 52/DX List of Modules on www.dhd-audio.com.

7.4 D-Sub Pin assignment of 52-7230



Rear View 52-7230

The connectors on the rear site of the 52-7230 are D-sub type (9 pins) and provide all GPIOs and analog control inputs (ACI) for this module.

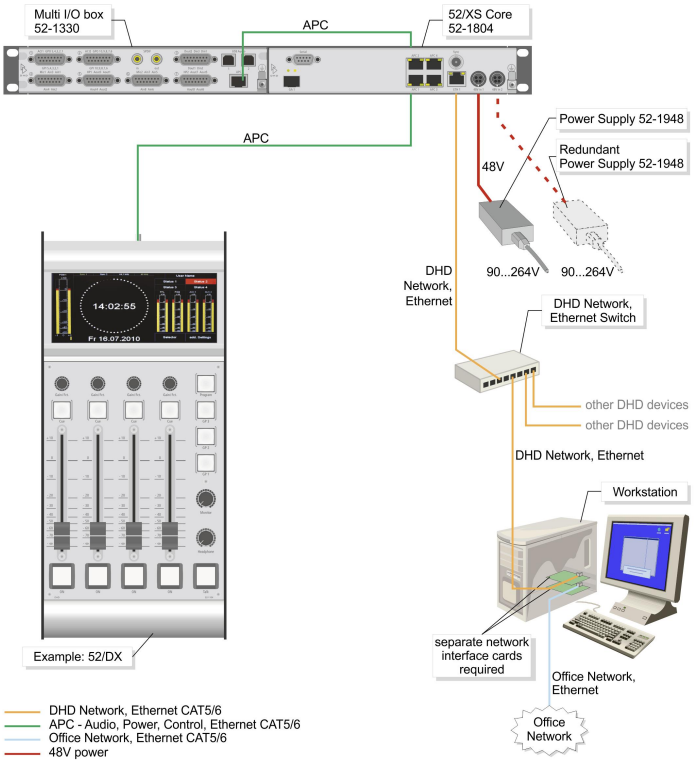
Weblink

Please find a PDF file with pin assignments in the 52/DX List of Modules on www.dhd-audio.com.

7.5 Network connection

To connect a PC for maintenance and configuration or the usage of DHD software together with a 52/SX console, please create a DHD exclusive network.

The following drawing shows a possible 52/SX installation and it should explain the Ethernet wiring of this application.



Example of a 52/DX installation.

Connect the `ETH 1` port of the 52/XS Core to the configuration PC or to the DHD Ethernet network, where the PC with the configuration software is located. To establish the connection to the office network, you should use a server PC with a second network interface card to avoid slowing down the communication in the DHD network and to block non-authorised access to the connected DHD systems. Please use shielded CAT5 cables continuous for wiring. But DHD recommends to use shielded CAT6 cables for longer distances.

Use only switches in the DHD network, which are shipped and/or recommended by DHD for the usage in this network. Especially the switches must be **unmanaged switches** working with a speed of **100 Mbit/s**.

The following non-PoE switches are tested by DHD and are recommended for the usage in DHD Ethernet networks:

Manufacturer	**Type**
3com	Superstack 3, Baseline Switch 16 Port 10/100 Ref. 3C16470
3com	Superstack 3, Baseline Switch 24 Port 10/100 Ref. 3C16471
Allied Telesyn	AT-FS713FC/SC 12x RJ45 1x SC http://www.alliedtelesyn.de
Allied Telesyn	AT-FS708 8x RJ45 http://www.alliedtelesyn.de

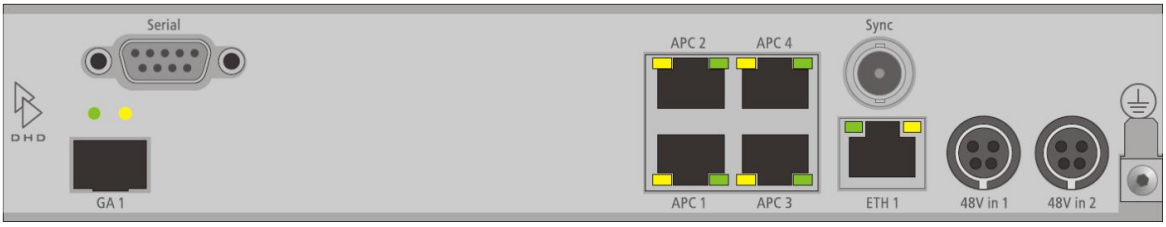
The control modules and I/O boxes have to be connected to the `APC` ports of the 52/XS Core (see Connecting modules to the XS Core)

8 Connecting modules to the XS Core

The control module and I/O boxes have to be connected to the APC ports of the 52/XS Core 52-1804. It is important to connect the peripheral modules to the correct APC port.

Important

Use always shielded CAT5 or CAT6 ethernet cables (at least S/UTP, F/UTP or SF/UTP) to connect these modules to the XS core.



Rear view of 52-1804

In the following table you can find the assignment of the control module, I/O boxes and DeviceLinks to the APC ports.

Name of the APC port	**52-1804**
APC 1	52-1104 52/DX control module
APC 2	I/O box 3 / DeviceLink 3
APC 3	I/O box 2 / DeviceLink 2
APC 4	I/O box 1 / DeviceLink 1

9 Usage of USB audio on 52-1330

The 52-1330 has two USB audio ports. Each port can be used to connect a personal computer with the Multi-I/O Box of the 52/DX for input and output of a stereo signal.

Connected to a PC, each USB audio port is recognised as an USB audio device, which can be used for playback and recording in every audio software. You don't need any device driver for the device, standard windows audio driver are used.

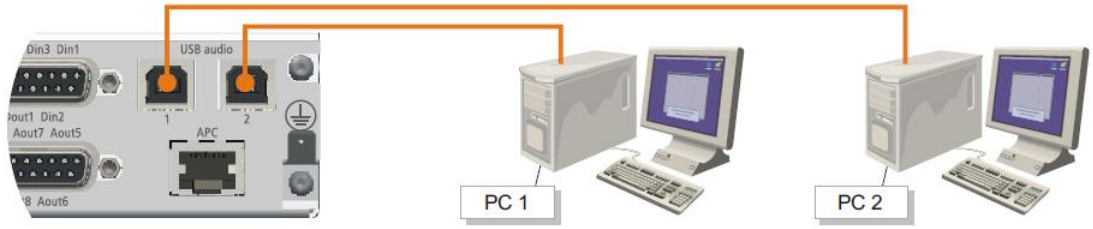
Important

These USB audio ports can not be used for maintenance or control purposes.

There are two options to use the USB audio port. Option 1 - Each USB audio port is connected to a separate PC and option 2 - both USB audio ports are connected to a single PC. You can find more information about these two options in the following sections.

9.1 Option 1 - Each USB connected to a seperate PC

In this case, each USB audio port is connected to a separate PC.



Two PCs, each connected to an USB audio port of the 52-1330.

The following operation systems are supported for this option:

- Microsoft™ Windows™ 98SE/Windows Me (For Windows 98SE and Windows Me, the HID function is not fully functional with the default class driver.)
- Microsoft Windows 2000 Professional
- Microsoft Windows XP Home/Professional (For Windows XP, use the latest version of the USB audio driver available from the Windows Internet site, or apply Service Pack 1 or later.
- Microsoft Windows Vista™ Business
- Microsoft Windows 7™ Professional

To use the USB audio input or output, just connect one of the USB audio ports of the 52-1330 with an empty USB port on your PC. Please use a standard USB cable for this connection. The USB audio port will be identified as an "USB Audio CODEC" in windows.

9.2 Option 2 - Both USB connected to single PC

In this case, the two USB audio ports are connected to a single PC.

Important

For the proper use of the both 52-1330 USB audio ports on one PC, Microsoft Windows Vista (32 Bit) or Windows 7 (32/64 Bit) is essential.

A single PC connected to the 2 USB audio ports of the 52-1330.

Each USB port will be identified as an "USB Audio CODEC". To use these two USB audio ports properly you should rename these two USB Audio Devices. To connect the 52-1330 to your PC and rename the USB audio devices, follow these steps:

1. Connect USB port 1 on 52-1330 with an unused USB port on your PC with an standard USB cable.

2. In the Notification area next to the windows clock, right-click on the  icon.

3. In the context menu select `Playback devices`. The `Sound` window opens.

4. On the `Playback` tab, select `Speakers-USB Audio CODEC` and click `Properties`. The `Speakers Properties` window opens.

5. On the General tab, in the text box next to the speaker symbol, enter a distinctive name for the USB audio device, for example 1330-1. Click OK.

6. Unplug the USB connection from USB port 1 on the 52-1330.

7. Connect the USB port 2 with a second USB cable to another USB port on your PC.

8. In the `Sound` window, on the `Playback` tab, select `Speakers-USB Audio CODEC` and click `Properties`. The `Speakers Properties` window opens.

9. On the `General` tab, in the text box next to the speaker symbol, enter a distinctive name for the USB audio device, for example 1330-2. Click OK.

10. Reconnect the first USB cable to the USB port 1 of the 52-1330. In the `Sound` window both devices are available now.

As long as the USB audio devices are connected to the same USB port on the PC, they can be identified unambiguously in windows.

9.3 Internal sample rate converter

By default, the input and output sample rate converter of the USB audio ports are set to `ON`. Because of that, the sample rate of the PC can be chosen absolutely independent from the sample rate of the 52/DX.

Example:

The PC is using a sample rate of 44.1 kHz, while the 52/DX is running with a sample rate of 48 kHz. With default SRC values the input signal from the PC to the 52-1330 will be converted from 44.1 kHz to 48 kHz. The output signal from the 52-1330 to the PC will be converted from 48 kHz to 44.1 kHz.

10 Configuration

In general, the 52/DX is preconfigured with a default configuration and will work with default values.

To customise the configuration of your 52/DX mixing console, DXConfig software is required. You'll find this software on the CD, delivered with your mixing console.

The DXConfig software is a Windows program that does not require any additional dynamic libraries (DLL files) or other files. For installation, simply copy the program file to the hard drive. To load the software, double-click on the `DXConfig.exe`. To remove the program, delete the `DXConfig.exe`.

When opening DXConfig, another software application is loaded automatically: DHD Communication Server (DHDCS). DHDCS filters TCP/IP and UDP packets from the network that are transferred to and from DHD devices and prepares them for several software applications. Please find detailed information on DHDCS in the Application Software Manual of the RM4200D.

You can use DXConfig without any hardware connected, for example for changing or checking configurations offline. Normally, the configuration PC is connected with the corresponding DHD system using the TCP/IP protocol via Ethernet.

To configure your 52/DX device double-click on the `DXConfig.exe.` After customizing the default values, you have to load your configuration into the 52/DX device (see Transfer Menu). Now the new configuration is available in the device and can be used.

In the following sections all configurable options are explained.

10.1 Program Menus

In this section of the manual, the menus and the commands of the DXConfig software are described.

10.1.1 File Menu

10.1.1.1 New Device

A new device is created. The device contains only the default values.

This command can also be executed by clicking  in the toolbar.

If a device file is already open, it can be saved before creating the new file.

Note

In DXConfig, only one device file can be shown at the same time. It is possible to open the DXConfig software several times on a PC to be able to edit several devices at the same time.

10.1.1.2 Open Device

An already existing device file is opened.

You can execute this command also by clicking  in the toolbar or by pressing `Ctrl+O`.

If a device file is open already, it can be saved before opening the new file.

10.1.1.3 Save Device

The current device is saved.

The command can also be executed by clicking  in the toolbar or by pressing `Ctrl+S` on the keyboard.

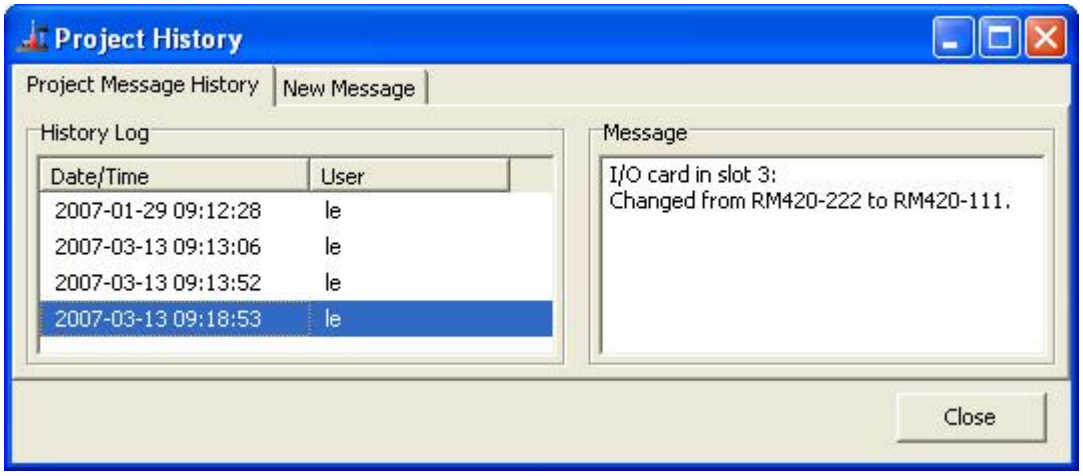
10.1.1.4 Save Device as

The current device file is saved with a different name. The program suggests the current name in the `Save` dialog box. The new device file is available for further configuration directly after saving, the original file is closed.

You are automatically working with the new created file after saving.

10.1.1.5 History

Using the `History` function in the `File` menu of DXConfig, you can log modifications of the configuration. This way, you can later reproduce, which user made which modifications of the system at which time.



Project History, logging modifications during configuration.

In the `File` menu click `History`; the `Project History` window opens. On the `Project Message History` tab, in the `History Log` area, the single entries are shown with date and time, as well as the login name of the user (Microsoft Windows Login) who created the entry. DXConfig itself logs some processes, for example when and by who a configuration was originally created. Other changes that seem important to you can be inserted manually.

To do this, select the `New Message` tab, type the new message and click `Save` to log the text in the history. Click `Clear` to delete the **whole** text that is entered in the `Enter Message` box.

To show a message, on the `Project Message History` tab, select an entry in the `History Log` list. The text is then shown in the `Message` box.

Note

A history entry can **not** be changed or deleted, once the entry was saved.

10.1.1.6 Exit

This command quits the DXConfig software. A message prompting you to save an open device file is shown if its current state is not saved yet.

10.1.2 View Menu

10.1.2.1 Maintenance Window

Using this command, you open the maintenance window. In this window, you have direct access to the modules of DHD systems, important settings and services. These functions are of a great variety and are therefore dealt with in an own chapter. (See Maintenance Window — Servicing Modules)

Note

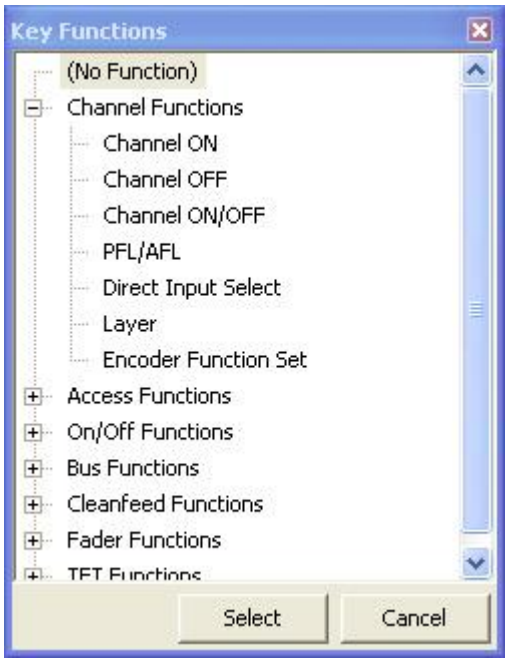
The functions that can be triggered from the maintenance window do not affect an open device file. If you want to access maintenance functions in SXConfig only, it is not necessary to load a device file.

You can also open or enable the maintenance window by pressing `F7`.

10.1.2.2 Key Functions

This window shows all `Key Functions` that are available for configuring the keys or TFT buttons of the device. A key must be selected on the `Console` tab. The key functions are divided into groups according to their characteristics.

You can open or enable the window also by pressing `F8`.

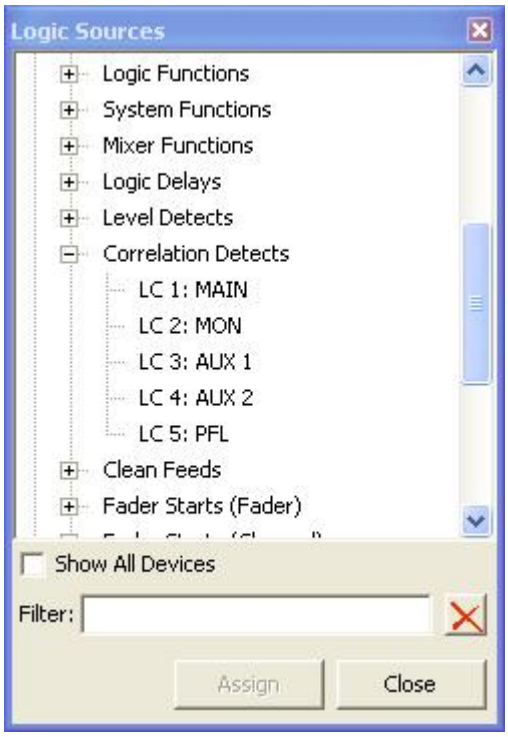


Window Key Functions, selecting key functions.

10.1.2.3 Logic Sources

This window shows all internal logic signals that are available for configuring the device. The logic sources are grouped according to their characteristics.

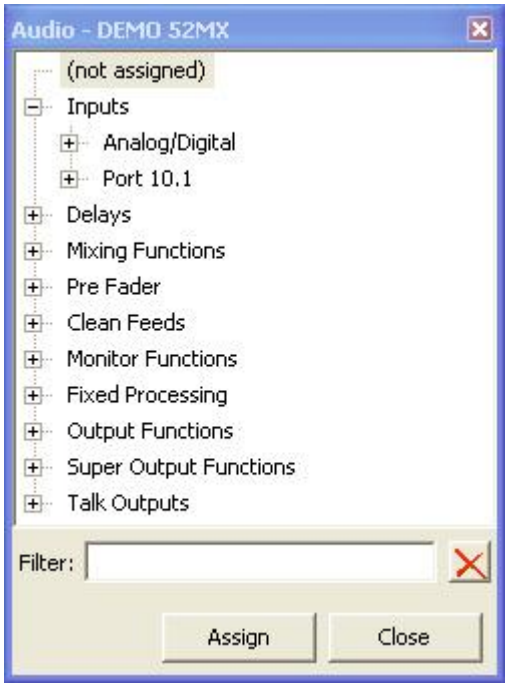
You can also open this window by pressing `F5`.



Window Logic Sources, selecting logic sources.

10.1.2.4 Audio Sources

This window shows all internal audio signals that are available for configuring the device. The audio signals are grouped according to their characteristics.



Audio, selecting audio sources.

On the internal TDM bus, the following audio channels are available: inputs, delays, mixing functions (sums, groups, Aux busses) pre-fader signals (fader channel after input processing), clean feeds (n-1 busses), monitor functions, fixed

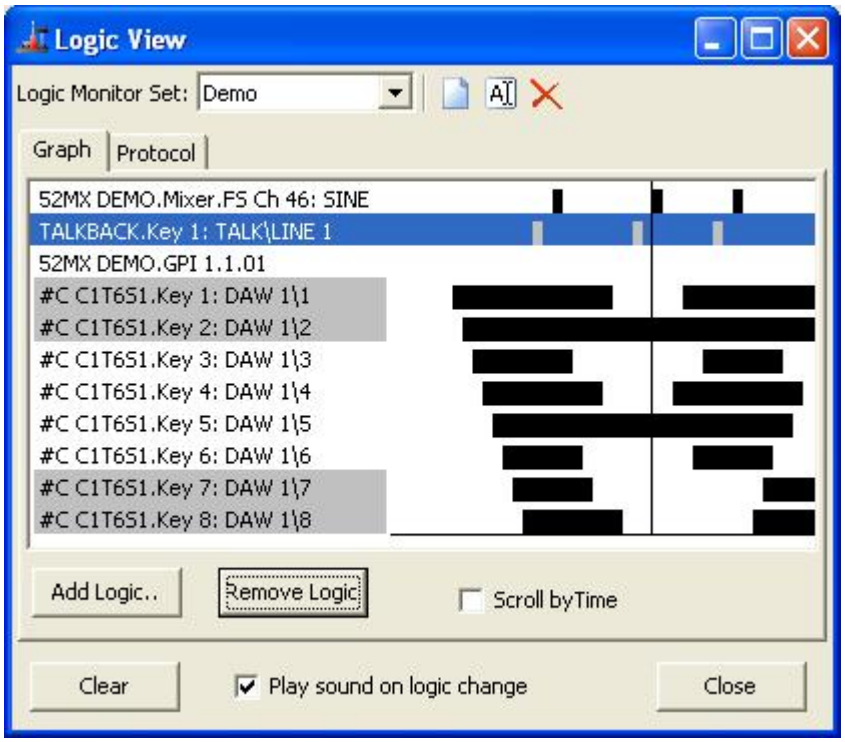
processing, output functions, super output functions and talk outputs.

You can also open this window by pressing `F6`.

10.1.2.5 Watches - Logic Monitor

With the `Logic View` window you can monitor all logics of the currently loaded DXConfig device.

For clearness, you can create several views including logics. Click to generate a new view, deletes a view and with you can rename it. All views are available in the `Logic Monitor Set` list.

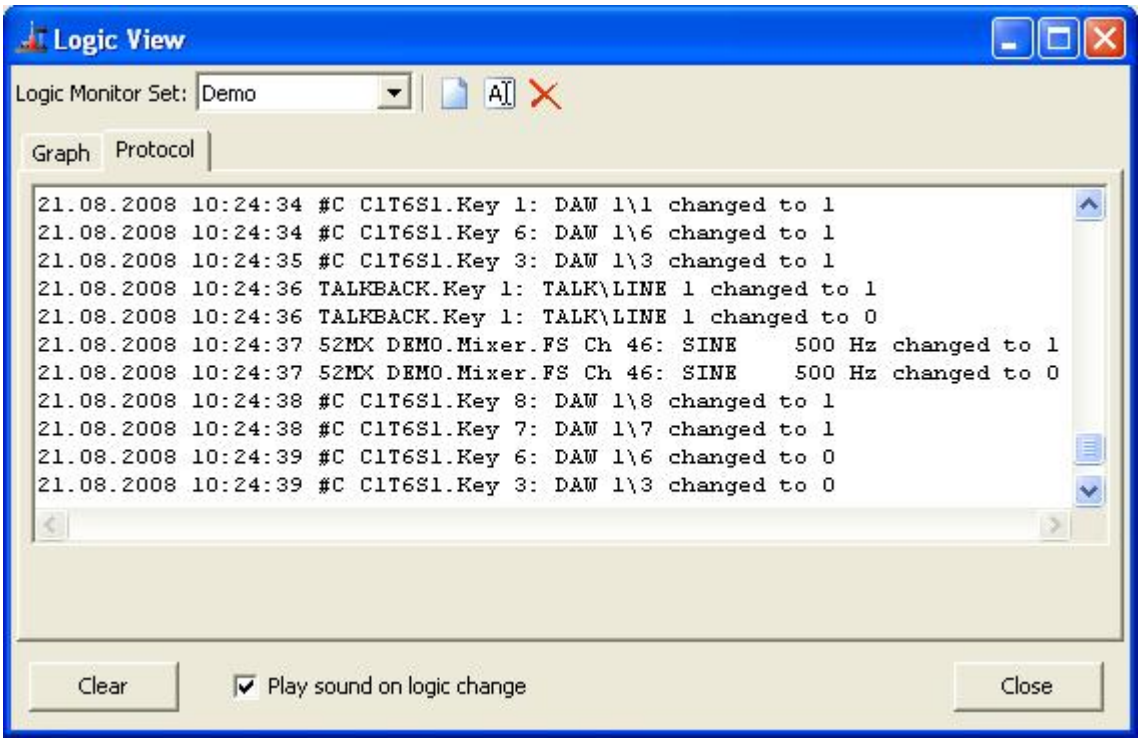


Logic states, shown in a timeline.

The `Graph` tab shows all logics in a time line. Click `Add Logic` to open the `Logic Sources` window and to add a new logic to the view. `Remove Logic` deletes the selected logic from the list. On the left hand side of the window you can find the labels of all inserted logics. The graphical view next to these labels shows the state of the logics at different times. The intervals of the on/off periods are not related to the time, but to each other. For example you can see that `DAW 1\1` was activated first, afterwards `DAW 1\2` was activated and so on. All labels with a grey background are currently active.

If you select the `Scroll by Time` check box, the history is not shown and you will only see, which logics are currently active. Moreover, it is possible to clear the history and to activate a sound that signalises the change of logic states.

Instead of the graphical view, you can choose the `Protocol` tab. Here, you can find the changes of the logic states and the absolute time the changes did occur.



Logic states, shown in a list.

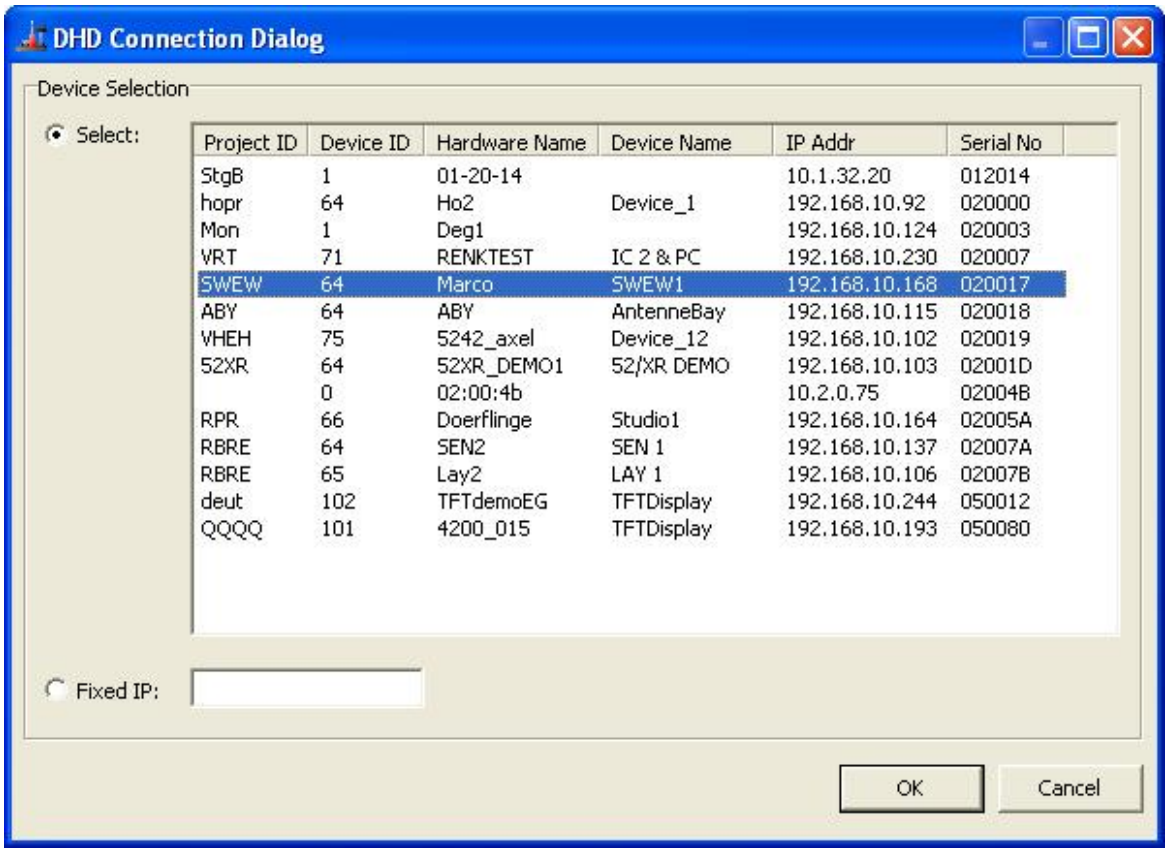
10.1.3 Transfer Menu

Connecting the Configuration PC and the Device

To load a Config from a device to the DXConfig software or write it back to the device after modifying it, the configuration data has to be exchanged between the configuration PC and the devices. This is done by an Ethernet connection using TCP/IP.

The commands `Load to Device` and `Load from Device` load and store a Config to and from the device respectively. In the DXConfig software, you can choose between different options, how the configuration PC can exchange data with the device.

Select the command for up- or download. After that, the `DHD Connection Dialog` window opens that is identical for both commands:



DHD Connection Dialog window for connections with the device.

The devices use the UDP protocol to announce their availability in the network. This requires that UDP packets can be transferred between the DSP frames and the configuration PC. This is not always possible in all networks.

Note

If no UDP packets are transferred between the DXConfig software and the devices, the list of all available DHD systems is not shown in the `DHD Connection Dialog`. In this case, you have to know exactly, which IP addresses belong to which device, and enter them manually in the `Fixed IP` box.

If the configuration PC and the devices can communicate via the UDP protocol, the list in the `DHD Connection Dialog` window shows all available systems. You can now select the desired destination from the list.

After transferring a Config to a device, in the status bar of the DXConfig window the message `Project modified` is shown. During the transfer, a time stamp is set in the file that is also transferred to the device. According to this time stamp, the DXConfig software can recognize, whether the Config in the device differs from the one in the file. The data stamp of the file or the time of the last transfer are shown under `<Device>/Options` in the `Last changed` box. If the Config has never been transferred to a device, `no timestamp` is shown.

There are the following options for setting up a connection:

- `Select`: In the list, all devices connected to the IP network segment are listed. This list is created automatically via UDP broadcast messages that are received from the devices. For each device, the appropriate project ID, device ID and the hardware and device name are shown, as well as the IP address. The `Serial No` column shows the serial number of the device which is identical with the company-specific bytes of the Ethernet MAC address of the device. Select the desired device by mouse clicking.

- `Fixed IP`: Here, you can enter the IP address of the device directly. This may be necessary if no UDP packets can be received, if the configuration PC and the device are located in different network segments. For remote servicing of systems this option might be helpful as well.

If you want to connect the device directly to the configuration PC with an ethernet cable, a twisted ethernet patch cable (X-cable, cross cable) has to be used. Assign static IP addresses on both sides (no DHCP). The first 3 bytes of the address must be identical, the last byte must differ, like the following example:

IP address of DXConfig-PC	192.168.010.057
IP address of device	192.168.010.058
Subnet mask	255.255.255.0

Note on the Configuration of IP addresses

Each device needs an unambiguous IP address that is either set statically or assigned by a DHCP server. The appropriate setting can be found under `Network Configuration` in `the Maintenance Window`. (See also Maintenance Window - Servicing Modules)

If the devices are not constantly connected to an IP network, you should use static IP addresses. Do not assign any of the IP addresses twice. Don't operate devices with DHCP enabled if no DHCP server is available on the network.

10.1.3.1 Load to Device

This command copies the current Config from the DXConfig software to the selected device. To do this, use the command `Load to Device`. The `DHD Connection Dialog` window opens, in which you can select the desired device. (See figure DHD Connection Dialog window for connections with the device) After confirming the selection, the new Config is transferred. If the name of the device in the project and the one of the device selected in the network should not be identical, the following message is shown:

Confirmation window if the project IDs in the DXConfig software and the device are not identical when uploading a Config.

Warning

Loading a new Config overwrites a Config already existing in the device. Therefore, if in doubt, save the current Config before making any changes using the `Load from Device` command and save it to a file.

The command `Load to Device` can also be executed by clicking in the toolbar.

10.1.3.2 Load from Device

This command loads a Config from a device to the DXConfig software. In the `DHD Connection Dialog` window you must select the corresponding device. (See figure DHD Connection Dialog window for connections with the device)

Note

If the device you are downloading a Config from is already included in the project, it is automatically selected in the `DHD Connection Dialog`. This requires identical values for project ID and device ID both in the project and the device itself.

Alternatively, you can create an new device. Then, load the Config into this empty device.

Warning

Be aware that changes of device caused by downloads can not be undone, as soon as the device file is saved. Therefore, for safety reasons, always work with copies of the original device files.

In general, it is always better to save the current Config of a device as device file. If other changes become necessary, load the device file again and modify it. After that, load the new Config to the corresponding devices. This way, the device file is always up to date and is available as a backup for the configuration data in the devices at the same time.

You can execute the command `Load from Device` also by clicking in the toolbar.

10.1.4 Options Menu

With the settings in the `Options` menu, only options are set that affect the operation of the DXConfig software. They have no effect on the configuration of the devices.

10.1.4.1 Configuration

After selecting `Configuration`, the `Toolbox Configuration` window opens. The options are explained in detail in the following table.

You can select this option also by clicking in the toolbar.

tab	area	option	description
Files	Project Files Save	Backup Levels	• Define here, how many backup generations shall be created. (min. =0, max.=100)
		Auto Save each	• If this check box is selected, the software creates backups of the project file automatically. • The number of backup files can be set in the `Backup Levels` box. If the last file is written, the first is overwritten when saving the next time. This way, it is lost! • The desired interval between two backups can be entered in the `Auto Save each` (min.=0 minutes, max.=100 minutes) box. • The created backup files have the number of the backup in their extensions, for example `.sxc.1`. The higher this number is, the newer is this file. If you want to use such a file in the DXConfig software again, previously you have to change its extension to `.dxc` again.
	File Menu	Show recently used files list	• If this check box is selected, only the defined number of recently opened projects is offered as a quick start option in the `File` menu. • The desired number of entries can be defined in the `Show recently used files list` box. (min.=0 entries, max.=100 entries)
View	Navigator	View follows selected object automatically	• By selecting this check box, the content of the navigator automatically adapts to the options and functions that are currently edited.
Audio and Logic Sources	Audio and Logic Tree	Hide sources without label	• This option influences the `Audio sources` window. (See also Audio Sources) If it is enabled, audio sources with deleted labels on the `I/O Settings` tab, are deactivated in the `Audio Sources` window.
	Assignment	Automatically select next item	• Select this check box to work quicker when defining the Output Routing on the `I/O Settings` tab. In this case, the DXConfig software selects the following output automatically when assigning audio signals to the outputs - in the output list as well as in the list of audio signals in the `Audio Sources` window.

10.1.5 Help Menu

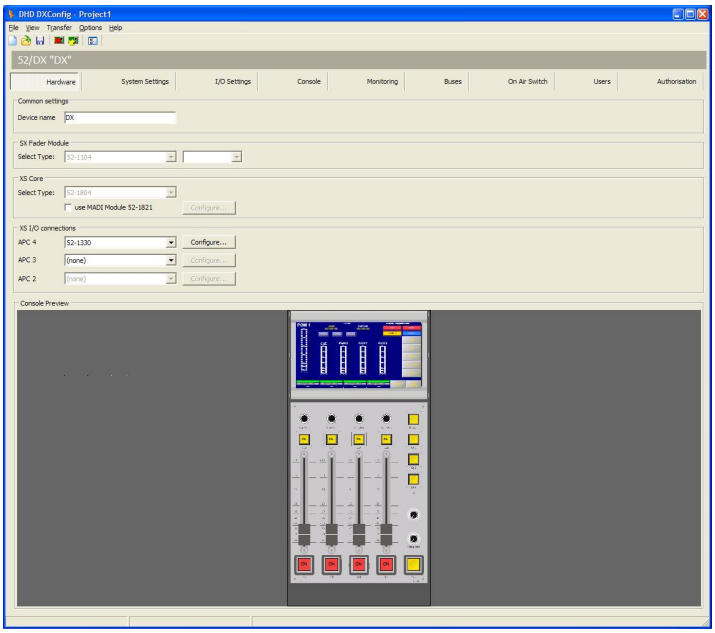
10.1.5.1 About

If you select `About`, the `Information` window opens.

Here, the date of creation of the software and the version of the used DXConfig are shown, for example `Version 7.1.4.0` Please always mention the complete version name when asking for servicing.

The version number of the DHDCS that is included in DXConfig is also shown in this window.

10.2 Hardware



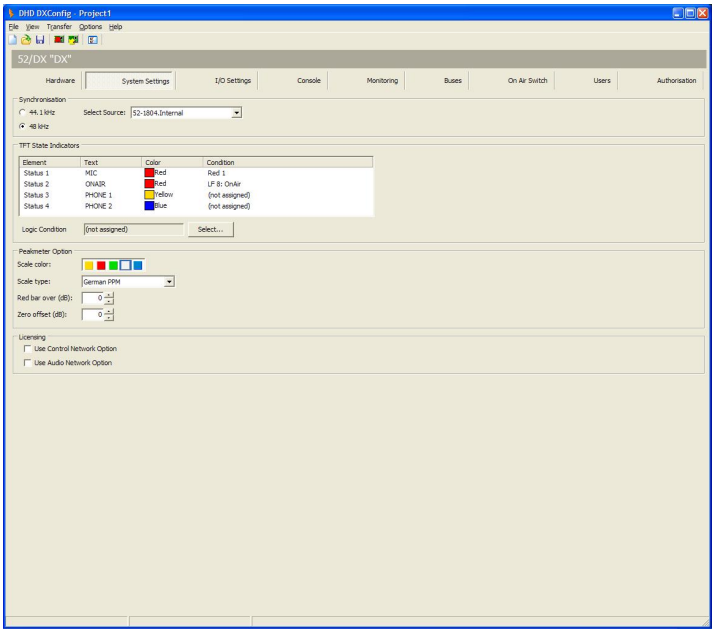
DXConfig Software - Hardware

On the `Hardware` page you can set, which 52/DX modules are connected to your system.

area	option	description
Common settings	Device name	Please enter a distinctive device name for this 52/DX mixing console.
SX Fader Modules	Select Type	Not available for 52/DX devices.
XS Core	Select Type	52-1804 is preselected and can not be changed.
	use MADI Module 52-1821	If your XS core is equipped with a MADI module 52-1821, please select this check box to enable the inputs and outputs for the `I/O Settings` tab.
XS I/O connections	APC 4	Select an I/O type or set the value to `(none)`. Default is `52-1330`.
	APC 3	Select an I/O type or set the value to `(none)`. Default is `(none)`.
	APC 2	Select an I/O type or set the value to `(none)`. Default is `(none)`.
Console Preview	Shows a preview of the configured control module	

10.3 System Settings

On the `System Settings` page, you can configure general options for your 52/DX.



DXConfig Software - System Settings

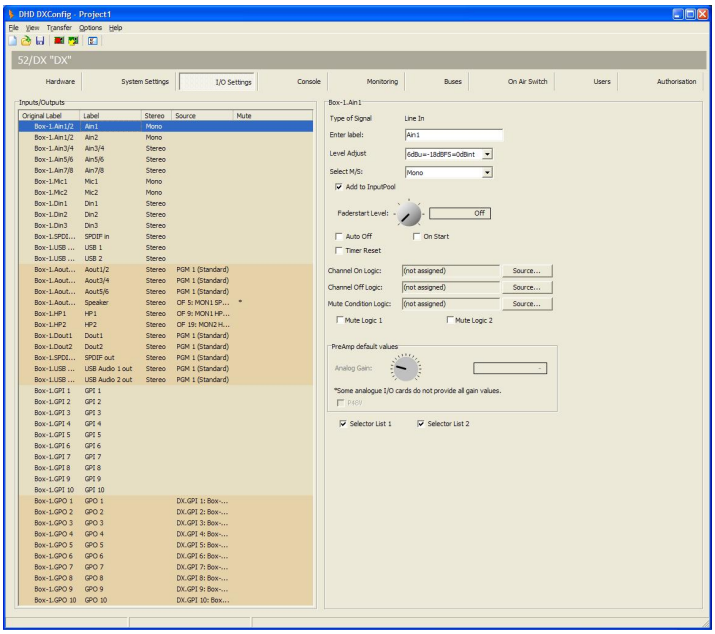
In the following table you can find the descriptions for these options.

area	option	description
Synchronisation	44.1 kHz / 48 kHz	Select here, which sample rate should be set for internal synchronisation.
	Select Source	Select in this list, which sync source should be used: • 52-180X.Internal - internal clock • 52-180X.GA1 - Gigabit Audio-signal (optional) • 52-180X.BNC Wordclock (rising edge) (optional) • 52-180X.BNC Wordclock (falling edge) (optional) • 52-180X.BNC AES/EBU (optional)
TFT State Indicators	Element	All four available status transparents are shown in this list.
	Text	Double-click on the default text to change it.
	Color	Double-click on the default color to change it.
	Condition	Double-click on the default logic condition, the Logic sources window opens. Select the desired logic and click assign.
	Logic Condition	Select a State indicator from the list and click `Select` to assign an other logic source from the logic sources window.

area	option	description
Peakmeter Option	Scale Color	Select the colour of the peak program meter on the TFT display. The selected colour is used for all peak program meters of the 52/DX.
	Scale Type	Select your preferred type of peak meter scale.
	Red Bar Over (dB)	Select the decibel value at which the level bar turns red for signaling a critical level area. (-20 dB to +20 dB)
	Zero Offset (dB)	Select the decibel value, which will be added to the level bar to adjust the shown signal level.
Licensing	Use Control Network Option	To enable the features of the XC/XS Core Control Networking licence select this check box. **Important** The configuration can only be loaded into the device, if the corresponding licence key is assigned to this device.
	Use Audio Network Option	To enable the features of the XC/XS Core Audio Network licence select this check box. **Important** The configuration can only be loaded into the device, if the corresponding licence key is assigned to this device.

10.4 I/O Settings

On the `I/O Settings` page, you can configure different options for each input and output. Not all options are available for any input or output.



DXConfig Software - I/O Settings

In the following table you can find the descriptions for these options.

area	option	description
Inputs/ Outputs	Original Label	This column shows the internal label which is generated in that scheme: <module type->. <port label>
	Label	Individual Label, double-click on the label and change the current name.
	Stereo	Indicates if the signal is mono or stereo.
	Source	Shows the assigned audio/logic source for input and output.
	Mute	Shows, that a Mute Logic is assigned to an output.

area	option	description
IOModule-X.<port> Audio Inputs	Type of Signal	Shows the general signal type of the port.
	Enter Label	Enter a distinctive name for the selected input.
	Level Adjust	Choose the headroom for each input from the corresponding drop-down menu. The shown values always refer to the devices internal default level of **0 dBint**.
	Select M/S	Select, if the signal is mono or stereo.
	Sample Rate Converter	Select from the drop down menu, if the sample rate converter is activated (`On`) or deactivated (`Off`) for this input.
	Add to Input Pool	Select this check box to make this signal available for a channel on the console
	Fader Start Level	Select a level, which sets the fader start logic to on.
	Auto Off	By closing the fader, the channel is automatically switched `OFF` (`ON` key is deactivated).
	On Start	The faderstart is only activated and deactivated by pushing the On/Off key, not by moving the fader.
	Timer Reset	If this check box is selected, opening this fader will reset and start the `Auto` timer of the stopwatch.
	Channel On Logic	Select a Logic Function from the `Logic Sources` window, which sets the channel to ON. You can choose, for example a GPI to open a channel.
	Channel Off Logic	Select a Logic Function from the `Logic Sources` window, which sets the channel to OFF. You can choose, for example a GPI to close a channel.

area	option	description
… IOModule-X. <port> Audio Inputs	Mute Condition Logic	Click `Source` to select a Logic source, that mutes the input, if the logic source becomes true.
	Mute Logic 1,2	Here, you can define which mute logics are enabled when opening a fader. Mostly, this assignment is used to mute speakers when opening microphone channels. You can control up to two mute logics. To do this, select the corresponding check boxes. To assign a mute logic to an output select the mute logic check box at a selected output on this tab.
	Selector List 1	Select this check box to add this audio source to source list 1. This Source will be available for monitoring in the `Selector` list, which is available in the `Selector` view of the TFT/ Touch Display.
	Selector List 2	Select this check box to add this audio source to source list 2. This Source will be available for monitoring in the `Monitor 2` list, which is available in the `Selector` view of the TFT/ Touch Display.
IOModule-X. <port> Audio Outputs	Type of Signal	Shows the general signal type of the port.
	Enter Label	Enter a distinctive name for the selected output.
	Headroom	Choose the headroom for each output from the corresponding drop-down menu. The shown values always refer to the devices internal default level of **0 dBint**.
	Select M/S	Chose, if the signal is mono or stereo.
	Sample Rate Converter	Select from the drop down menu, if the sample rate converter is activated (`On`) or deactivated (`Off`) for this output.
	Dithering	If you connect devices with a lower resolution of the digital signals to a DHD device, here you can define how the internal audio signal is to be dithered before leaving the digital output. With this function, the quality of the output signal can be improved. You can select `16 bit`, `20 bit`, or `Off` (no dithering, preset value).

<table>
<tr><th>area</th><th>option</th><th>description</th></tr>
<tr><td rowspan="7">...
IOModule-X.
<port>

Audio Outputs</td><td>Digital Out Mode</td><td>This option can adopt the values <code>Pro</code> (default value) or <code>Consumer</code>. The following parameters are changed accordingly:

<table>
<tr><th>Mode</th><th>Pro (Default)</th><th>Consumer</th></tr>
<tr><td>Terminator</td><td>110 Ohm</td><td>75 Ohm</td></tr>
<tr><td>Output voltage</td><td>5 V</td><td>0,5 V</td></tr>
<tr><td>Data stream</td><td>Professional Bit set</td><td>Consumer Bit set</td></tr>
</table>

Note

Especially for consumer and semiprofessional DAT or MiniDisc devices, you should use the <code>Consumer</code> option, because they might not synchronise properly in which case they display <code>No Lock</code>, for example.</td></tr>
<tr><td>Source</td><td>You can assign an audio signal to a mono output.

Click the <code>Source</code> button, the <code>Audio sources</code> window opens. Select an audio source, and click <code>Assign</code>.</td></tr>
<tr><td>Left Source</td><td>You can assign an audio signal to the left channel of the selected output.

Click the <code>Source</code> button, the <code>Audio sources</code> window opens. Select an audio source, and click <code>Assign</code>.</td></tr>
<tr><td>Right Source</td><td>You can assign an audio signal to the right channel of the selected output.

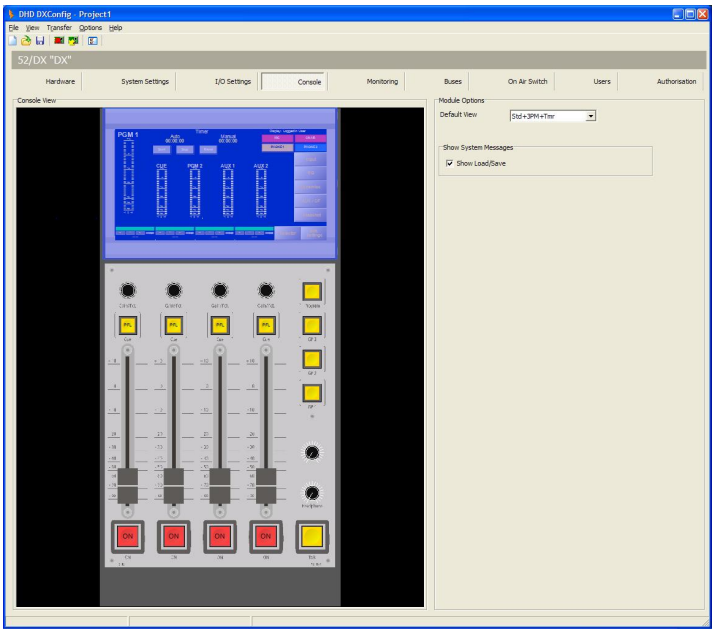
Click the <code>Source</code> button, the <code>Audio sources</code> window opens. Select an audio source, and click <code>Assign</code>.</td></tr>
<tr><td>Direct ACI</td><td>Select this check box to enable volume control for the headphones via a potentiometer which is connected to an ACI.

This option is only available for headphone outputs. The ACI on D-sub port 1 is assigned to headphone 1 (HP1) and the ACI on D-sub port 2 is assigned to headphone 2 (HP2).</td></tr>
<tr><td>Mute Logic 1</td><td>Select this check box to mute this output, if a fader with one of the inputs with selected <code>Mute Logic 1</code> check box is opened.</td></tr>
<tr><td>Mute Logic 2</td><td>Select this check box to mute this output, if a fader with one of the inputs with selected <code>Mute Logic 2</code> check box is opened.</td></tr>
</table>

area	option	description
IOModule-X.<port> General Purpose Inputs (GPI)	Type of Signal	Shows the general signal type of the port.
	Enter Label	Enter a distinctive name for the selected input.
IOModule-X.<port> General Purpose Inputs (GPO)	Type of Signal	Shows the general signal type of the port.
	Enter Label	Enter a distinctive name for the selected input.
	Select Source	You can assign a logic sources to the selected GPO. Click the `Source` button, the `Logic sources` window opens. Select a logic source, and click `Assign`.

10.5 Console

On the `Console` page you can configure keys, TFT views and the OLED display on the central module.



DXConfig Software - Console

To configure an element, select it in the `Console View` area. Its options are shown in the area to the right of the `Console View` area.

Element	option	description
TFT/Touch Display	Default View	In this list, all available default TFT views are shown. Select a default view from the list. (For differences between the default views see Default views table)
	Show System Messages	Select the check box in front of the system message to enable it on the TFT/Touch Display.
key	Number	Shows the generated number of the selected key: <name of fader module>.Key<key number on this module>
	Function	Shows the assigned key function. To change the default key function of a key, follow these steps: 1. Select a key on the console view. 2. In the `View` menu, select `Key Functions`. The `Key Functions` window opens. 3. In the `Key Functions` window select a Key Function from the list and click `Select`.
… key	Label	Enter a name for the key. This name will be shown in the Console View and will be available for the label print feature.
	Colors	Depending on the selected key function, you can define here, with which color the key shall light up according to the lamp source. `On` is the color if the function is enabled, `Off` if the function is in inactive condition. For the last case, mostly the `Off` option is used, for example the key does not light up. Depending on the selected key function, you find also different names in the `Lamp Source` column, for example `Standby`, `Available`, `Busy`, `Owned`, `Layer A`, `Layer B` or the name of the selected `lamp source`. You can define the colors red and yellow. You can define flashing colors for the keys. Select the check box, in the `Colors` area. To change the logic source for a color, select an entry in the `Lamp Source` column and click `Source`. The `Logic Sources` window opens. In the `Logic Sources` window, select a logic source from the list and click `Assign`.
	Toggle Mode	`Momentary` - The function is enabled as long as the key is pressed. `Toggle` - This key is stay put. `Timed Toggle` - This key is stay put (short press) or spring return (long press).

Monitoring key - Program:

Press the `Program` key, to send the PGM 1 bus audio signal to the Mon1 bus. When the `Program` key is not active, the audio sources which is selected in the `Selector` view on the TFT is sent to the `Mon1` bus. To set the audio source for this `Mon1` bus, follow these steps:

1. On the TFT Touch display tap on the `Selector` button. The `Selector` view is shown.
2. At the bottom of the TFT Touch display, tap on `Selector`.
3. In the `Selector Sources` area, tap on the audio source that should be routed to the `Mon1` bus.

General Purpose keys - GP1, GP2, GP3:

You can configure these keys as User Defined Key.

User defined:
- By right-clicking `(not assigned)` in the `Lamp Source` column, you can either select the key itself as a source or select any source from the `logic sources` window.
- You can use the key as a logic source in many ways, for example for the On-Air Switch or routing to GPOs.
- You can change the sequence of the three rows in the Colors area. Drag a row in the `Lamp Source` column to its new priority place.
- The LED with higher priority lights up if its lamp source is active; two colors can't light up at the same time!
- The LEDs of the keys can also be used to show a condition without having assigned a key function. This is useful for signalisation via GPIs.

Key - Talk:

You can configure this key only as User Defined Key.

User defined:
- By right-clicking `(not assigned)` in the `Lamp Source` column, you can either select the key itself as a source or select any source from the `logic sources` window.
- You can use the key as a logic source in many ways, for example for the On-Air Switch or Talkback.
- You can change the sequence of the three rows in the `Colors` area. Drag a row in the `Lamp Source` column to its new priority place.
- The LED with higher priority lights up if its lamp source is active; two colors can't light up at the same time!
- The LEDs of the keys can also be used to show a condition without having assigned a key function. This is useful for signalisation via GPIs.

Default views:

In the following table, the differences between the default TFT views are shown.

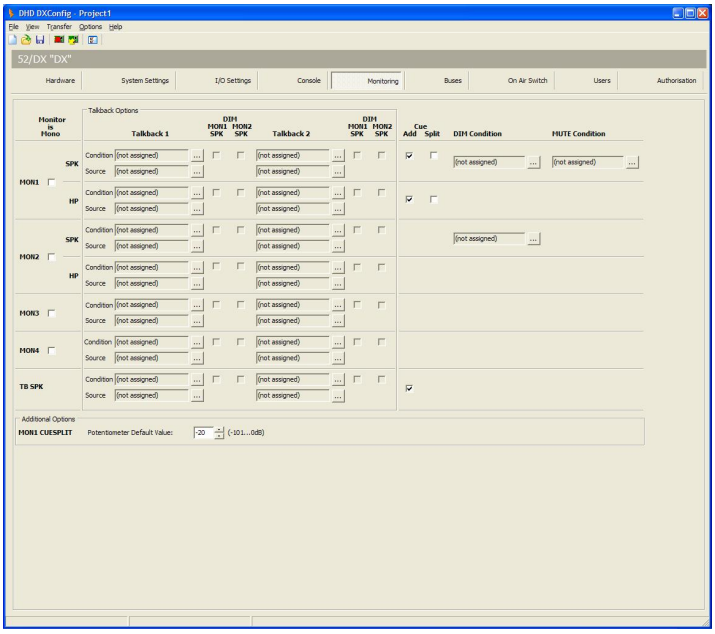
view name	**standard elements (Std)** (PGM peak meter, CUE peak meter, 4 state indicators, navigation buttons, access buttons for faders)	**clock (Clk)**	**three additional peak meter for PGM 2, Aux 1, Aux 2 (3PM)**	**timer (Tmr)**	**sync status indicators**
Std+Clk	X	X			X
Std+Clk+3PM	X	X	X		X
Std+Clk+3PM +Tmr	X	X	X	X	

Std-CUE+Clk	X (without CUE peak meter)	X			X
Std+Tmr	X			X	
Std+3PM+Tmr	X		X	X	
Std	X				
Std+Clk+Tmr	X	X		X	

X...the element is available in this view

10.6 Monitoring

On the Monitoring page you can configure the monitoring features of the 52/DX and set up a simple talkback, for example between the control room and the studio.



DXConfig Software - Monitoring

Each row on this page is an output function and available as an audio signal source for any output from the `Audio Sources` window.

These output functions belong to the monitoring signals on this page:

name on Monitoring page	output function
MON1 SPK	MON1 SPK Vol L MON1 SPK Vol R
MON1 HP	MON1 HP Vol L MON1 HP Vol R
MON2 SPK	MON2 SPK Vol L MON2 SPK Vol R
MON2 HP	MON2 HP Vol L MON2 HP Vol R
MON3	MON3 Vol L MON3 Vol R
MON4	MON4 Vol L MON4 Vol R
TB SPK	TB SPK

For the monitoring signals 1 to 4, you can select the `Monitor is Mono` check box, if the monitoring signal is mono. The `TB SPK` signal is always mono.

For the monitoring signal 1 (Speaker and Headphone), you can decide what happens when a CUE signal (PFL) is available. If nothing is selected, no PFL signal will be available on this monitoring signal. Select the `Cue Add` check box to mix the CUE signal with the monitoring signal. Select the `Cue Split` check box to assign the CUE signal to the left channel and the monitoring signal to the right channel. You can also adjust the ratio between the PFL signal and the monitoring signal with one of the encoders next to the central OLED display. To do this, follow these steps:

1. On the `Console` tab, on the central module, select one of the keys 9 to 12, the `Key Functions` window opens.
2. In the `Key Functions` window, double-click on `Monitor Functions`.
3. Drag the `Potentiometer` function to the `Function` entry in the `Key Options` area.
4. In the `Potentiometer` list, select `CUESPLIT`.
5. In the `Encoder` list, select one of the encoders - `F1`-upper encoder, `F2`-lower encoder.

If you press the configured key on the 52-1010 central module, you can use the encoder to change the attenuation of the monitoring signal. Default value is set to -20 dB, this can be increased to off.In the `Additional Options` area, you can change the `MON1 CUESPLIT Potentiometer Default Value` to values between -101 dB and 0 dB.

To dim the volume (-20 dB) of the monitoring signals 1 or 2, you can assign a logic source. Click the  button, next to the `DIM Condition` box. The `Logic Sources` window opens. Select a logic source from the list and click assign.

To mute the monitoring signals 1, you can assign a logic source. Click the  button, next to the `MUTE Condition` box. The `Logic Sources` window opens. Select a logic source from the list and click assign.

Note

To select the main input source for the monitoring busses, you have to assign a audio signal. To do this, follow these steps:

1. On the main page, on the TFT/Touch Display of the 52/DX, tap on `Selector`.
2. On the bottom of the TFT/Touch Display, select the monitoring bus.
3. In the `Selector Sources` area, on the TFT/Touch Display, tap on the signal source to assign it to the monitoring bus.

10.6.1 Talkback

On the `Monitoring` page a talkback area with talkback specific settings is available. For each monitoring signal, you can assign 2 talkback signals. These could be microphone inputs or other audio sources. You can switch on these talkback signals by a logic source.

In the `Talkback 1/2` columns, in the `Source` boxes, you can insert an audio source which is activated by the logic sources inserted in the `Condition` boxes.

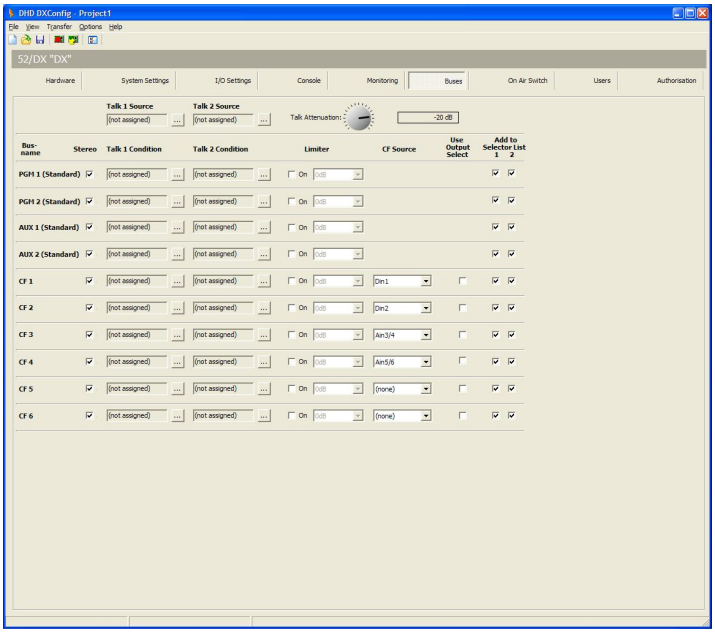
To assign an audio source, as talkback into a monitoring signal, click the  button, next to the `Source` box. The `Audio Sources` window opens. Select a audio source from the list and click assign.

To assign an logic source as talkback condition, click the  button, next to the `Condition` box. The `Logic Sources` window opens. Select a logic source from the list and click assign.

You can dim the monitor speaker signals, if a talk condition becomes true. To do this, select the corresponding `DIM MON1/2 SPK` check box.

10.7 Buses

On the `Buses` page you can configure the settings for all buses that are available in the 52/DX system.



DXConfig Software - Buses

In the following tables all options on this page are explained.

element	description

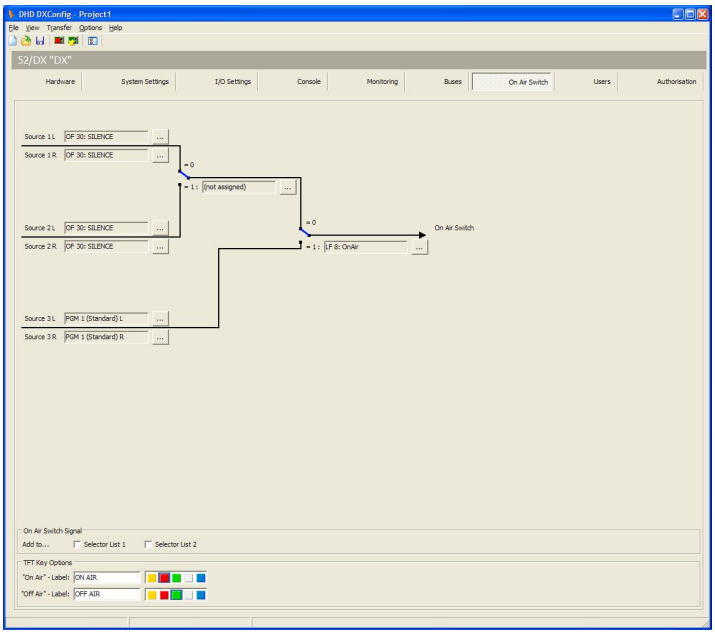
Talk 1 Source	Click the ... button, next to the `Talk 1 Source` box. The `Audio Sources` window opens. Select a audio source from the list and click assign. When the `Talk 1 Condition` logic becomes true, the `Talk 1 Source` is active on the corresponding bus.
Talk 2 Source	Click the ... button, next to the `Talk 2 Source` box. The `Audio Sources` window opens. Select a audio source from the list and click assign. When the `Talk 2 Condition` logic becomes true, the `Talk 2 Source` is active on the corresponding bus.
Talk Attenuation	When a Talk Source is active, the busses can be attenuated between `0 dB` and `Off` in steps of 1 dB. Use the `Talk Attenuation` selector to change the attenuation value.

column	description
Bus name	Here you can find the name of the bus for which you configure the following settings.
Stereo	Select this check box, if the bus is stereo. Clear the check box to configure the bus as mono.
Talk 1 Condition	Click the ... button, next to the `Talk 1 Condition` box. The `Logic Sources` window opens. Select a logic source from the list and click assign. When this logic source becomes true, the `Talk 1 Source` is active on the corresponding bus.
Talk 2 Condition	Click the ... button, next to the `Talk 2 Condition` box. The `Logic Sources` window opens. Select a logic source from the list and click assign. When this logic source becomes true, the `Talk 2 Source` is active on the corresponding bus.
Limiter	Select the `On` check box to activate the limiter for this bus. Select a threshold value from the drop-down menu (-30 dB to 20 dB).
CF Source	Select from the drop down menu an audio source for your clean feed signal
Use Output select	Select this check box to enable source selection for the alternative clean feed signal.
Add to Selector List 1	Select this check box to add a bus to source list 1. This bus will be available for monitoring in the `Selector` list, which is available in the `Selector` view of the TFT/Touch Display.

column	description
Add to Selector List 2	Select this check box to add a bus to source list 2. This bus will be available for monitoring in the `Monitor 2` list, which is available in the `Selector` view of the TFT/Touch Display.

10.8 On-Air Switch

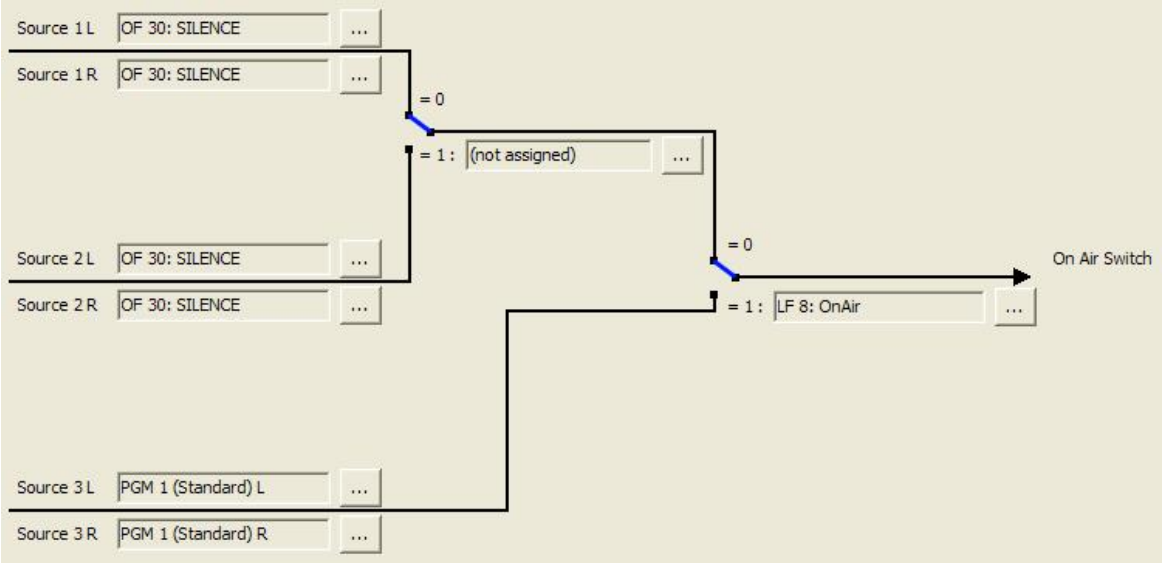
The `On-Air Switch` page gives you the possibility to change sources for an output controlled by logic sources.



DXConfig Software - On Air Switch

You can select three stereo audio sources, which can be switched by two logic sources.

On the left-hand side you can see the audio sources of the On-Air switch. The black lines symbolise audio signal paths. There are two blue-coloured signal switches, each with an associated logic sources (see figure On-Air Switch configuration).



On-Air Switch configuration

To configure the On-Air switch, follow these steps:

1. Click the ...-button next to the `Source 1L` box, the `Audio Sources` window opens.
2. In the `Audio Sources` window, select a source and click `Assign`. Alternatively you can double-click on the source or drag it to the `Source` box. The source is now assigned to the On-Air switch.
3. Repeat steps 1 and 2 for the `Sources 1R, 2L, 2R, 3L` and `3R`.
4. The main switch on the right-hand side is assigned by default to the `OnAir` Logic Function. To change the logic source, click ... and select another logic source from the `Logic Sources` window.
5. The switch between `Source 1` and `Source 2` has no default logic source and you have to select a logic source if `Source 2` will be used. Click ... and select another logic source from the `Logic Sources` window.

The main switch with its default logic source OnAir is already preconfigured in the 52/DX-System. To switch between `Source 3` and `Source 1` (or `Source 2`) follow these steps:

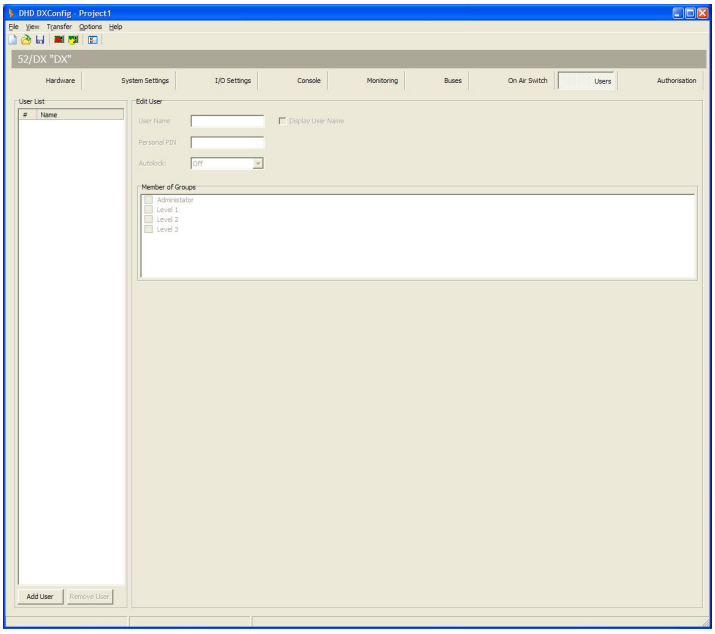
1. On the TFT/Touch Display, on the main page, tap on `add. Settings`.
2. Tap on the `Unlock` button, the button turns orange. Now it is possible to change the `Signal Switch` state.
3. Tap on the `ON AIR` button. The `ON AIR` button turns red. `Source 3` is now selected.

In the `On Air Switch Signal` area, you can assign the On Air Switch Signal to the `Selector List 1` and `Selector List 2`. You can find these lists on the `Selector` view of the TFT/Touch Display.

The Label and color for the corresponding TFT buttons can be changed in the `TFT Keyoptions` area.

10.9 Users

On the `Users` page you can you can create users with different access rights.



DXConfig Software - Users

You can create users with different access rights by assigning them to the preconfigured user groups. To do this, follow these steps:

1. In the `User List` area, click `Add User` to create a new user.
2. In the `Edit User` area, in the User Name box, type a distinctive user name, for example "technician".
3. In the `Personal PIN` box, enter a four-digit PIN code, which identifies the user at the log in process on the console.
4. In the `Member of Groups` area, select one or more user groups to assign the selected user to these groups.

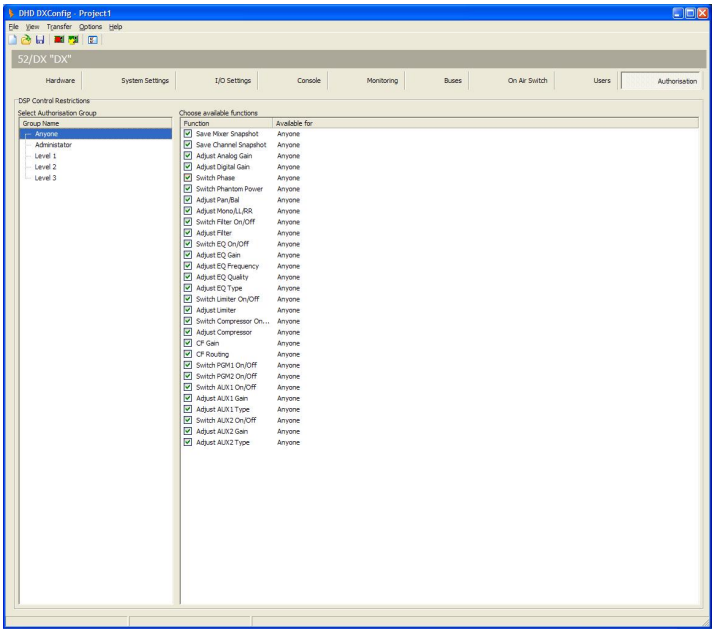
You can log out the users automatically after a defined duration. After this duration the user has to log in again. Choose this duration from the `Autolock` drop-down menu. You can select `2, 5, 10, 15, 20` or `30` minutes or select `Off` to disable this feature.

Note

The `Display User Name` check box has no function for 52/DX devices.

10.10 Authorisation

On the `Authorisation` page you can assign access rights for different preconfigured user groups.



DXConfig Software - Authorisation

To assign access rights to authorisation groups, follow these steps:

1. In the `Group Name` list, select a authorisation group.
2. In the `Function` column, select the check boxes in front of the functions, to enable the access for this group.

In the `Available for` column, you can see for every function, which authorisation groups have access this function.

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