Series 52
Compact Mixing Console

SX2

www.dhd-audio.com

DHD.audio

Digital Broadcast Technology

Made in Germany

SX2 Overview

Smart Modules for all Applications

The SX2 is a modular mixing console for radio and other broadcast applications. The price-optimised mixer is ideal for on-air studios, audio workstations and smaller OB vans.

Console sizes are adaptive and range from 4 to 16 faders. The central module (52-5614) has four faders and a central section for monitoring, talkback and central controls. The fader modules (52-5620) feature 6 faders. All faders are motorised and allow a second layer for up to 16 channels.

Both modules feature a 10.1" multi-touch display for faders and central control. All SX2 units are separate table-top devices and can be chained for a single mixing desk.

The central control module provides the most important audio I/Os. Not only a microphone input and a headphones output are included, you can also connect your loudspeakers directly to this unit, thus reducing required rack space and cabling work.

rear view SX2 central module

The SX2 is based on the same Series 52 firmware as MX or RX2 consoles. It can be configured with the SX2Config software, a simplified version of Toolbox9.

The SX2 features can be extended simply by adding optional license codes to the DSP core. This allows not only to increase the number of faders, busses and clean feeds, but also to use functions like Loudness Metering, Profanity Delay, Talkback to other DHD mixers and our browser-based Views App.

Studio CBS Daegu, Korea

High-performance 40-bit floating-point DSP for:
- 16 channels, mono or stereo, each with 3-band EQ (fully parametric), subsonic filter, dynamics, limiter, delay
- 16 stereo PGM busses, Aux busses, clean feeds and PFL
- 6 clean feeds (mix-minus, mono or stereo)
- 4 monitoring busses for control room and studio
- flexible talkback, logic and GPIO system
- integrated routing matrix
- internal tone generator
- internal or external 48 kHz or 44.1 kHz sync

Fader Module 52-5620

TFT controls for each channel
- channel name, UTF8-supported
- PGM and off-air selection
- channel input meter
- gain settings

Flexible fader encoders
- function according to TFT content
- control of gain settings

Professional high-grade 100-mm motor faders

Flexible pushbuttons in each channel
- silent, multicolour (RGB)
- individual button functions for channel e.g., ON, OFF, PFL, Access, Layer or Talk
- buttons below fader have a label area for clear function naming

Central Module 52-5614

TFT controls for central functions
- main control
- metering
- EQ and dynamics
- input channel settings
- snapshots

Flexible central encoders
- function according to TFT content
- volume control of guest headphones
- monitor selectors

Ambient-light sensor for automatic console brightness control

Pre-listening & talkback speaker with built-in amp

Silent, multicolour (RGB) push buttons
- monitoring section, expanded by touch-display selector
- GPIO push buttons
- talkback push buttons

Professional high-grade volume potentiometers

Talkback microphone with built-in preamp

259 mm

98 mm

22 mm

472 mm

All modules are separate table-top devices. Each fader module comes with a chaining kit for optional physical connection of modules.

The SX2 modules are designed for easy maintenance and low power consumption (max. 25 W per module).
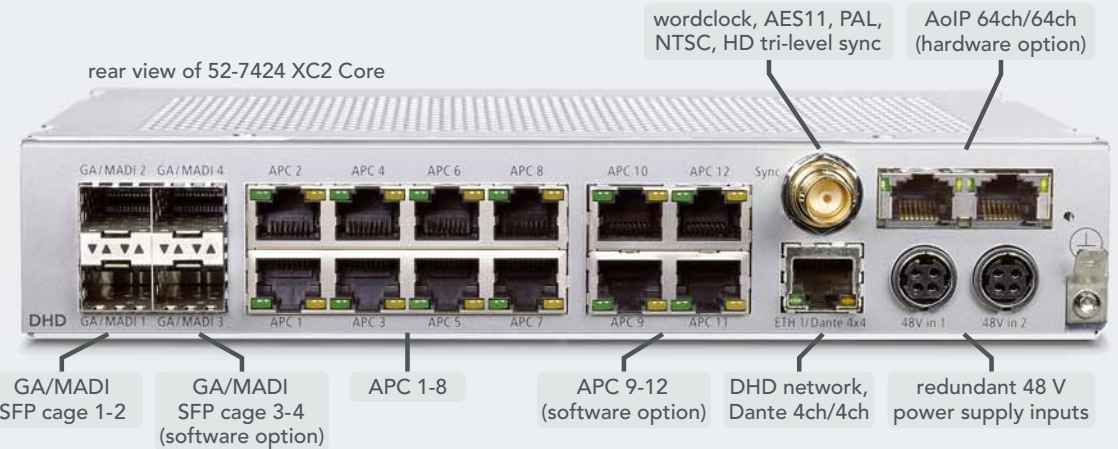
Core Options

52/XC2 Core

The 10-fader SX2 bundles include an 52-7424 XC2 Core. These are the bundles with the greatest possible expandability. With 8 APC ports to connect I/O boxes and control modules a vast number of combinations is available. The built-in 4-channel Dante interface opens up the possibility for monitoring applications and talkback to another studio via your IP network.
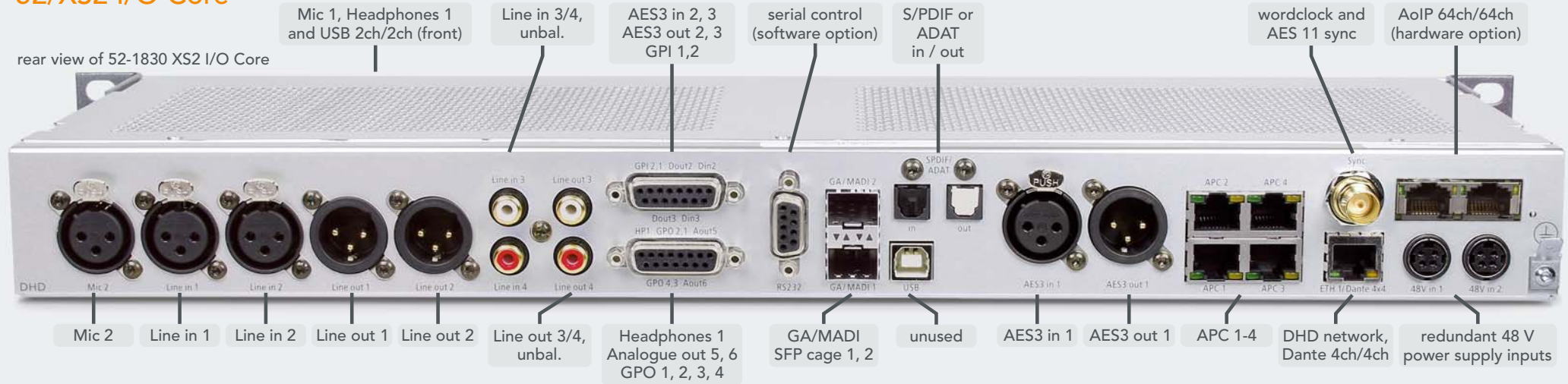
You can expand your bundle to 16 faders and still connect 5 I/O modules, a Dante interface and MADI. Our wide range of I/O options allows you to build your mixer exactly according to your studio requirements.

With the the 52-1950 Extended Feature Upgrade license, the optional APC and GA/MADI ports can be activated for even more I/O module options.

rear view of 52-7424 XC2 Core

wordclock, AES11, PAL, NTSC, HD tri-level sync

AoIP 64ch/64ch (hardware option)

GA/MADI SFP cage 1-2

GA/MADI SFP cage 3-4 (software option)

APC 1-8

APC 9-12 (software option)

DHD network, Dante 4ch/4ch

redundant 48 V power supply inputs

52/XS2 I/O Core

rear view of 52-1830 XS2 I/O Core

Mic 1, Headphones 1 and USB 2ch/2ch (front)

Line in 3/4, unbal.

AES3 in 2, 3 AES3 out 2, 3 GPI 1,2

serial control (software option)

S/PDIF or ADAT in / out

wordclock and AES 11 sync

AoIP 64ch/64ch (hardware option)

Mic 2

Line in 1

Line in 2

Line out 1

Line out 2

Line out 3/4, unbal.

Headphones 1 Analogue out 5, 6 GPO 1, 2, 3, 4

GA/MADI SFP cage 1, 2

unused

AES3 in 1

AES3 out 1

APC 1-4

DHD network, Dante 4ch/4ch

redundant 48 V power supply inputs

The 52/XS2 I/O Core (52-1830) combines I/O interfaces and DSP processing for up to 16 faders in one housing. It has all the audio interfaces that are required for journalist desks or edit booths. You can mount it underneath your desk or into a rack, using only 1 rack unit.

Easy connectivity is the strong point of the 52/XS2 I/O Core. Microphones, headphones, line and AES3 signals can be connected to XLR ports. Also USB audio, Toslink connectors for ADAT or S/PDIF and a 4ch/4ch Dante™ interface are included. Multi-channel options for MADI, Gigabit Audio and AES67 are available.

Our smallest SX2 bundle (52-1988) is a budget-friendly package and includes this versatile I/O core and the SX2 central module with 4 faders (52-5614). It is perfect for a small radio production studio or as starting point for adding more modules from our product range for a bigger and more customised system.

SX2 Bundles

All of our SX2 Bundles are complete mixing desks including a control interface with faders a DSP core, a power supply and all necessary cables.

The most compact mixing system is our 52-1988 Bundle. It features the SX2 central module with 4 faders and XS2 I/O Core with a height of only 1 rack-unit. This core has all the I/Os that are required in small production studios or at a journalist desk. With its 4 APC ports you can add more fader modules or additional audio I/O modules to expand this bundle.

Our SX2 Bundle (52-1989 and 52-1999) are equipped with 10 faders, an XC2 DSP Core (52-7424) and a Multi I/O Box (52-1335).

The 52-1989 Bundle has an additional mic/headphone module (52-7235) to connect a total of 7 microphones and 7 headphones. It has also a built-in 64ch/64ch Dante interface to integrate the mixing desk into an Audio-over-IP network.

The 52-1999 Bundle includes a second Multi-I/O Box to be able to connect any peripheral equipment in a conventional studio.

The bundles will be delivered with a default system configuration. It can be adapted with a simplified version of the Toolbox9 software called "SX2Config".

The 52-1950 Extended Feature Upgrade license allows to use the Toolbox9 for detailed configuration and creation of specialised TFT views.

SX2 Bundle (52-1999)

52-1988	52-1989	52-1999
4 Fader SX2	**10 Fader SX2**	**10 Fader SX2**
SX2 Config Tool	SX2 Config Tool	SX2 Config Tool
XS2 I/O Core (52-1830)	**XC2 Core** (52-7424)	**XC2 Core** (52-7424)
Power Supply (52-7498)	Power Supply (52-7498)	Power Supply (52-7498)
✓	✓	✓
only 1 rack unit	XS Multi I/O Box (52-1335) XC Mic/Headphone Module (52-7235) XC2 Dante IP Audio Interface (52-7080)	2x XS Multi I/O Box (52-1335)
for journalist desks	**for on-air-studios with AoIP**	**for on-air-studios with conventional I/O**

SX2 Bundles – I/O Overview

Type	52-1988 input	52-1988 output	52-1989 input	52-1989 output	52-1999 input	52-1999 output
Microphone/Line	3	-	7	-	5	-
Headphones	-	2	-	7	-	5
Analogue Line balanced	2	6	8	8	16	16
Analogue Line unbalanced	2	2	-	-	-	-
AES3/EBU (stereo)	3	3	3	2	6	4
S/PDIF (stereo)	1[1]	1[1]	1	1	2	2
USB (stereo)	1	1	2	2	4	4
Dante™ (4 ch)	1	1	1	1	1	1
Dante™ (64 ch)	1[2]	1[2]	1	1	1[2]	1[2]
AES67/RAVENNA (64 ch)	1[3]	1[3]	-	-	1[3]	1[3]
GPIO	4	6	16	20	22	22
ACI	-	-	6	-	4	-

[1] switchable to 8 channels ADAT
[2] optional hardware module 52-7080
[3] optional hardware module 52-7067

I/O Options and SX2 Specifications

52/XC Mic/Headphone Module

front view 52-7235

- 4 mic/line inputs with remote preamp 0...63 dB, 18 dBu maximum
- 48 V phantom power, switchable
- 4 stereo headphone amp outputs
- 4 general-purpose inputs, isolated
- 8 general-purpose outputs, isolated
- 4 analogue control inputs

52/XC Digital I/O Module

front view 52-7112

- 4 AES3/EBU/SPDIF inputs, 24 bit, input sample rate converters
- 4 AES3/EBU/SPDIF outputs, 24 bit, output sample rate converters
- 4 general-purpose inputs, isolated
- 4 general-purpose outputs, isolated

52/XC Embedder/De-Embedder

front view 52-7172

- 2x 3G/HD/SD SDI de-embedders and 2x 3G/HD/SD SDI embedders, each with:
  - in, 2x loop through, out (BNC connectors)
  - 2 selectable audio groups (1/2 or 3/4), 8 channels, SRCs
- 4 general-purpose inputs, isolated
- 4 general-purpose outputs, isolated

52/XS Multi I/O Module

rear view 52-1335

- 2 mic/line inputs, preamp, 48 V
- 2 stereo headphone outputs
- 8 analogue line inputs, 24 dBu maximum, electronically balanced
- 8 analogue line outputs, 24 dBu maximum, electronically balanced
- 3 AES3/EBU inputs, 1 SPDIF input
- 2 AES3/EBU outputs, 1 SPDIF output
- 2 USB audio IF, 10 GPI, 10 GPO, 2 ACI

More modules on **www.dhd-audio.com**

Mic/Line Input Specifications

Input sensitivity:	-77 dBu ... 18 dBu
Gain setting:	analogue preamp 0 dB, 10 dB ... 63 dB in steps of 1 dB, -20 ... +20 dB digital gain in steps of 1 dB
Frequency response:	< 0.03 dB (20 Hz ... 20 kHz)
Dynamic range:	> 111 dB (A-weighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analogue / digital gain)
Equivalent input noise:	< -127 dBu (150 ohm source), < -126 dBu (200 ohm source)
Phantom power 48 V:	switchable per input channel, unloaded input: 48 V ±10%
Max. input level:	18 dBu (balanced)
Converter technology:	24 bit, oversampling sigma-delta

Analogue Line Input Specifications

Max. input level:	24 dBu (balanced)
Frequency response:	< 0.05 dB (20 Hz ... 20 kHz)
THD+N:	< -85 dB / 0.006% (-1 dBFS, +23 dBu)
Dynamic range:	> 98 dB (A-weighted)
Converter technology:	24 bit, oversampling sigma-delta

Analogue Line Output Specifications

Max. output level (phones, single-ended):	24 dBu (balanced)
Minimum load (outputs short-circuit protected):	600 ohm
Frequency response:	< 0.1 dB (20 Hz ... 20 kHz)
THD+N:	< -84 dB / 0.006% (-1 dBFS, +23 dBu)
Dynamic range:	> 104 dB (A-weighted)
Converter technology:	24 bit, oversampling sigma-delta

Digital Input/Output Specifications

Input/output impedance:	110 ohm (AES3/EBU) or 75 ohm (S/PDIF)
Input sensitivity:	> 200 mV
Sample rate converters (SRC):	inputs and outputs (switchable, slaved to related input)
Input SRC sampling frequency range:	28 kHz ... 108 kHz
Output SRC sampling frequency range:	28 kHz ... 54 kHz
Dynamic range (SRC off):	144 dB (24-bit digital audio)
Output level:	3.4 V (into 110 ohm load)
Output dither:	off, 16, 20 bit (switchable by configuration software)

- Mixing
- Routing
- Controlling
- Networking
- Switching