

# Series 52 Compact Mixing Console

# 52/SX



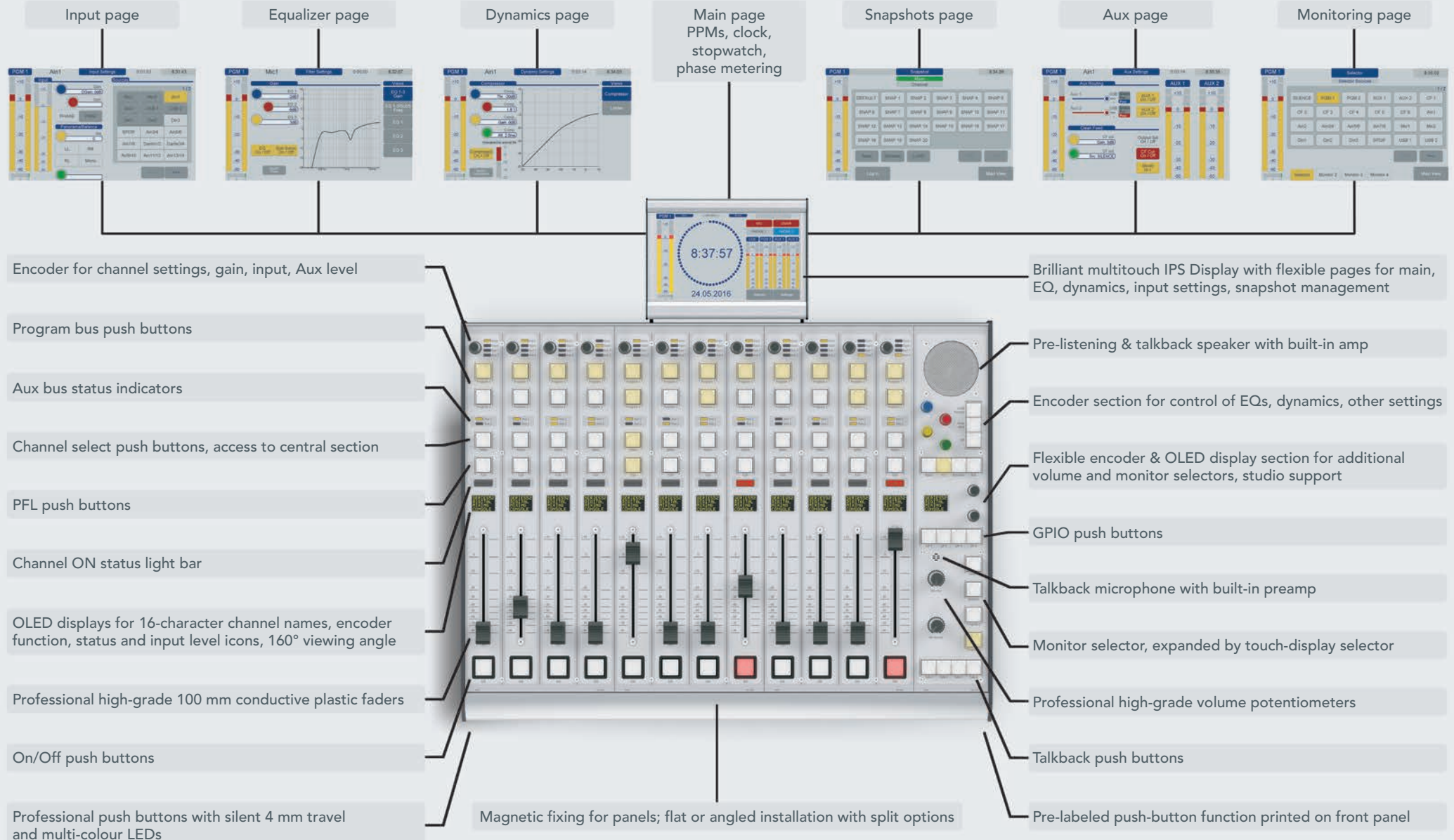
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Digital Broadcast Technology

Made in Germany

# 52/SX Features



# 52/SX Overview

## Compact Mixer - Powerful Features

The 52/SX is a modular compact mixing console for radio and TV. The price-optimised mixer is ideal for On-Air studios, audio workstations and smaller OB vans.

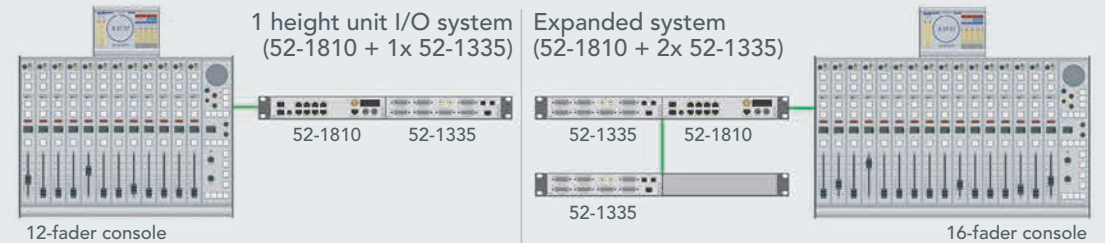
It complements DHD's 52/MX and 52/RX product lines. The 52/SX is based on the same Series 52 firmware platform. It can be configured with a simplified version of the Toolbox8 software called 'SXConfig'. The 52/SX can be extended to allow seamless networking with other Series 52 products, including DSP Control Software and Remote Control PC Software.

The console consists of 4, 8, 12, or 16 faders and a central control section including talkback microphone, loudspeaker, and a 7" TFT Touch Display. 52/SX consoles are available in flat or angled versions, with split options.

The modular 1-U core with I/O modules and DSP features microphone, headphone, analogue line, digital inputs and outputs (AES3, S/PDIF, USB audio), MADI, APC and Gigabit audio interfaces.

The cabling between fader units, central section, DSP units and I/O units is realised solely via Ethernet (DHD audio, PoE mains supply, DHD control IP), thus allowing the usage of the commonly used CAT cabling systems.

## Console & I/O System Sizes



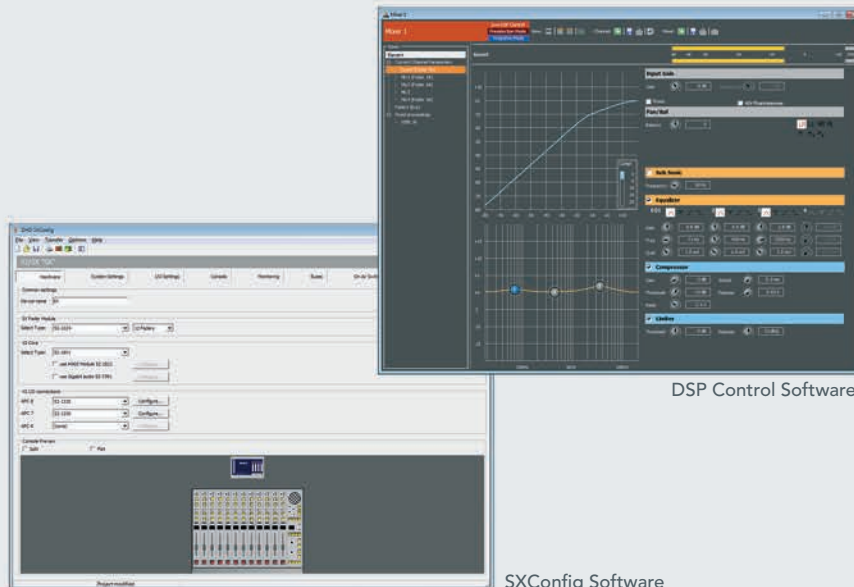
Inputs/outputs available:	1x 52-1335	2x 52-1335	
Microphone/line inputs	2	4	-77...+18 dBu sensitivity
Headphone outputs	2	4	stereo
Analogue line inputs	8	16	max. +24 dBu
Analogue line outputs	8	16	max. +24 dBu
Digital inputs, AES3/EBU	3	6	sample rate converter, stereo
Digital inputs, S/PDIF	1	2	sample rate converter, stereo
Digital inputs, USB	2	4	sample rate converter, stereo
Digital outputs, AES3/EBU	2	4	sample rate converter, stereo
Digital outputs, S/PDIF	1	2	sample rate converter, stereo
Digital outputs, USB	2	4	sample rate converter, stereo
Dante™ AoIP - inputs	4	4	sample rate converter, mono
Dante™ AoIP - outputs	4	4	sample rate converter, mono
General purpose inputs	10	20	opto coupler
General purpose outputs	10	20	photo mos relays
Analogue control inputs	2	4	for external potentiometers

Inputs/outputs available on central module 52-1011:		
Talkback microphone	1	built-in, connected via ethernet
PFL/Talkback speaker	1	built-in, connected via ethernet

MADI (hardware option) 52-7321:		
MADI input channels	up to 2x 64	AES10 format, licensed SFP module, LC duplex/fibre
MADI output channels	up to 2x 64	AES10 format, licensed SFP module, LC duplex/fibre

Gigabit audio networking (hardware option) 52-7391:		
Gigabit audio interface input channels	up to 2x 512	DHD format, licensed SFP module, LC duplex/fibre
Gigabit audio interface output channels	up to 2x 512	DHD format, licensed SFP module, LC duplex/fibre

Dante™ / AES67 (hardware option) 52-7080:		
Audio over IP input channels	64	sample rate converter, mono
Audio over IP output channels	64	sample rate converter, mono



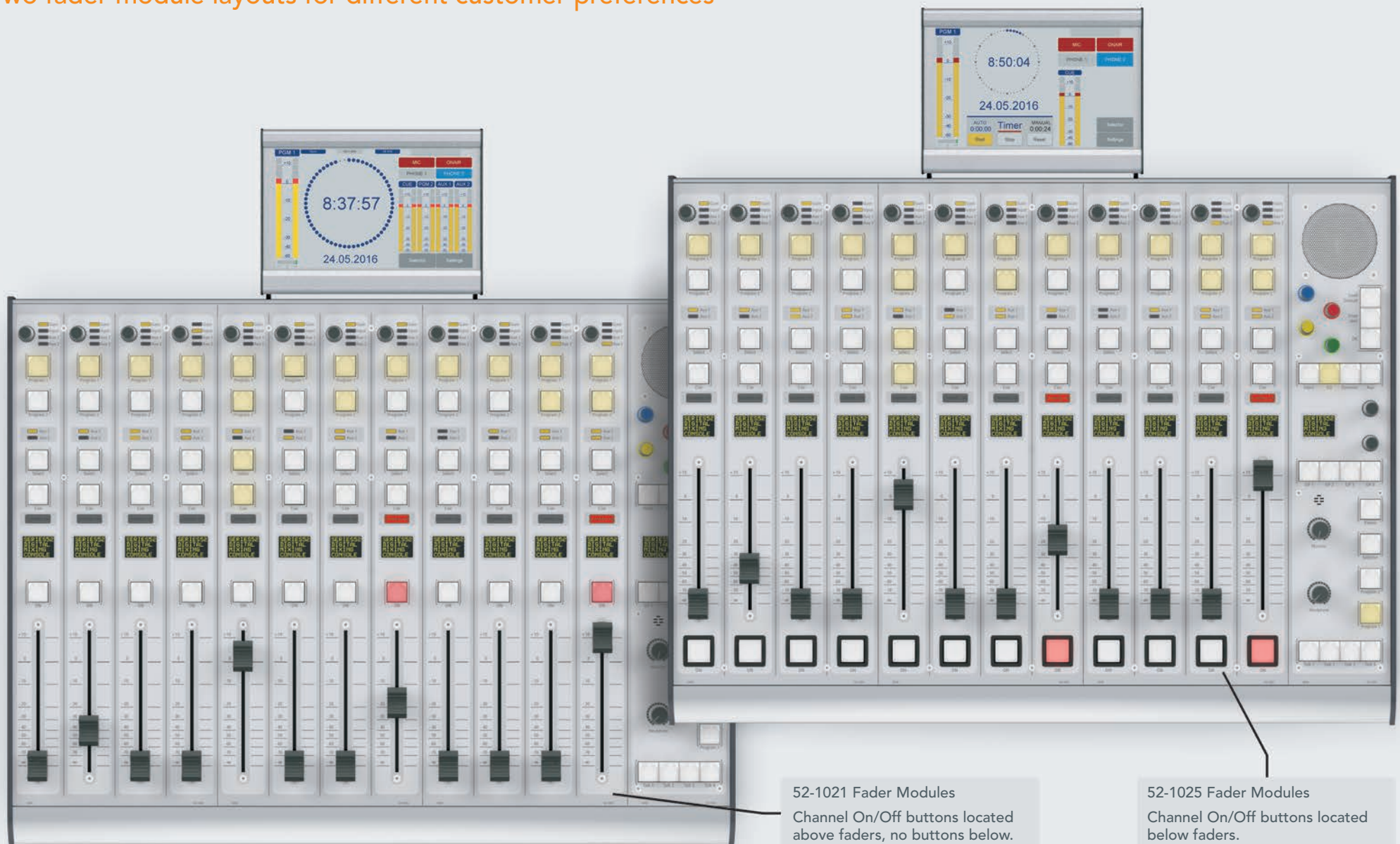
DSP Control Software

SXConfig Software



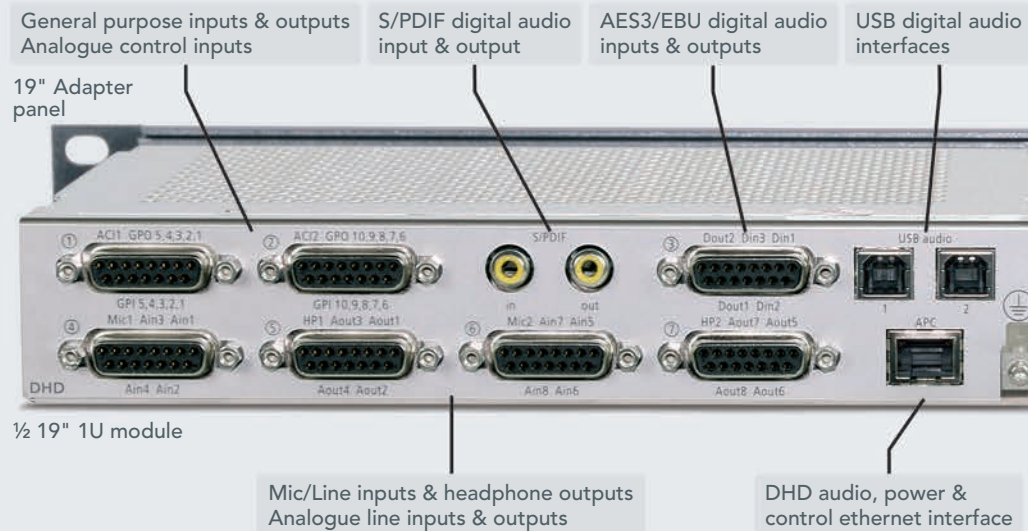
# 52/SX Console Layouts

Two fader module layouts for different customer preferences

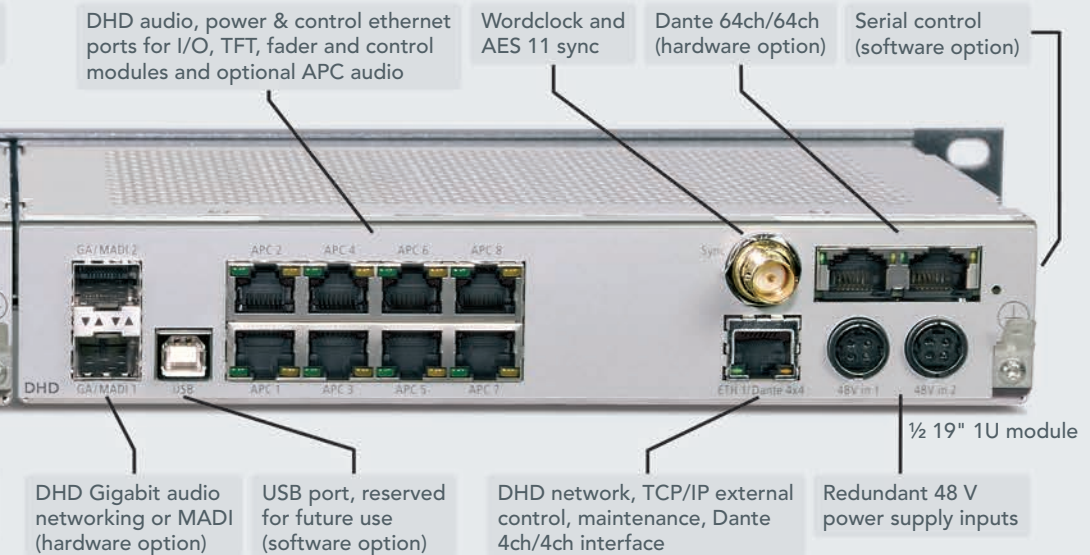


# 52/XS Core & Multi-I/O Box for 52/SX Console

## XS Multi-I/O Box 52-1335



## XS Core 52-1810



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

- 3-band full parametric equalizers, subsonic filter, dynamics, limiter, delay for all 16 fader channels, mono or stereo
- 16 stereo summing busses, 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
- low-latency interconnection between 52/XS2 cores or to other DHD products via Gigabit Audio (fibre, 512 input and 512 output channels) or APC (CAT 5/6, 48 input and 48 output channels)
- USB audio interface for direct connection to PC
- Dante interface with 4ch/4ch built-in, additional option for 64ch/64ch Dante AoIP
- internal or external 48 kHz or 44.1 kHz sync

## Rear view XS2 I/O Core 52-1830 (for up to 8 faders)



## Front view XS2 I/O Core 52-1830



- stand-alone system does not require a PC; no fan, no hard disc, no battery inside
- highly efficient external, wide-range power supply, Energy Star Level V, redundancy option
- minimal system power consumption
- expandable modular system allows optional integration with other DHD product lines
- TCP/IP or serial interface options to radio automation or other external control systems

# 52/SX Modules and Specifications

Specifications and design in this document are for information only and subject to change without notification.

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Product Number	Product Name	Description	Typical 12 fader mixer (52-1995)	Typical 16 fader mixer, split
52-1011A	SX Central Module	<ul style="list-style-type: none"> <li>19 push buttons, 2 volume controls</li> <li>6 rotary encoders</li> <li>32-character OLED display</li> <li>built-in loudspeaker/amp, mic/preamp</li> </ul>	1	1
52-1021A	SX Fader Module	<ul style="list-style-type: none"> <li>4 fader channels, each with:                             <ul style="list-style-type: none"> <li>5 push buttons above fader</li> <li>32-character OLED display</li> <li>100 mm conductive plastic faders</li> <li>1 rotary encoder</li> </ul> </li> </ul>		4
52-1025A	SX Fader Module	<ul style="list-style-type: none"> <li>4 fader channels, each with:                             <ul style="list-style-type: none"> <li>1 push button below, 4 above fader</li> <li>32-character OLED display</li> <li>100 mm conductive plastic faders</li> <li>1 rotary encoder</li> </ul> </li> </ul>	3	
52-1018A	SX Blank Module	<ul style="list-style-type: none"> <li>80 mm x 399 mm x 36 mm</li> </ul>		
52-1335A	XS Multi-I/O Box	<ul style="list-style-type: none"> <li>2 mic/line inputs, preamp, 48 V</li> <li>2 stereo headphone outputs</li> <li>8 analogue line inputs, el. bal., 24 dBu</li> <li>8 analogue line outputs, el. bal., 24 dBu</li> <li>3 AES3/EBU inputs, 1 S/PDIF input</li> <li>2 AES3/EBU outputs, 1 S/PDIF output</li> <li>2 USB audio IF, 10 GPI, 10 GPO, 2 ACI</li> <li>replaces 52-1330</li> </ul>	2	2
52-1810A	XS2 Core, 8 - 16 Fader Processing	<ul style="list-style-type: none"> <li>DSP &amp; Controller with Micro SD Card</li> <li>8 audio, power &amp; control ports</li> <li>supports SX console with up to 16 faders</li> <li>number of available functions limited by XS2 core hardware, see specifications</li> </ul>	1	1
52-1830A	XS2 I/O Core, 8 Fader Processing	<ul style="list-style-type: none"> <li>DSP &amp; Controller &amp; I/O Box</li> <li>4 audio, power &amp; control ports</li> <li>supports 8-fader SX console</li> <li>number of available functions limited by XS2 core hardware, see specifications</li> </ul>		
52-7321A	XC MADI port, multimode SFP	<ul style="list-style-type: none"> <li>56 or 64 in/out ch., multimode fibre, LC</li> <li>SFP module for 52-1810, 52-1830</li> </ul>		
52-1919A	XS 19" Adapter Panel	<ul style="list-style-type: none"> <li>for 2 housings 1/2 19" width</li> </ul>	1	2
52-1948B	XS Power Supply 48 V / 100 W	<ul style="list-style-type: none"> <li>input voltage 90-264 VAC</li> </ul>	1	1
52-1950	XS Core extended feature upgrade	<ul style="list-style-type: none"> <li>allows Toolbox5 configuration instead of configuration assistant with predefined function set</li> </ul>		
52-7391A	XS Core Gigabit Audio Port	<ul style="list-style-type: none"> <li>Gigabit audio interface to DHD routers or other DHD mixers</li> </ul>		
52-8583	XS Core Control Networking	<ul style="list-style-type: none"> <li>control interface for logic exchange between DHD devices</li> </ul>		
52-4018B	TFT/Touch Display, 7" IPS	<ul style="list-style-type: none"> <li>7" / 178 mm diagonal size</li> </ul>	1	1
52-2604A	SX Table-Installation Frame	<ul style="list-style-type: none"> <li>aluminium extrusion frames</li> <li>for flat installation</li> <li>magnetic fixing for panels</li> <li>table cutout required</li> </ul>		
52-2606A	SX Table-Installation Frame			
52-2608A	SX Table-Installation Frame			
52-2610A	SX Table-Installation Frame			
52-2614A	SX Table-Installation Frame			
52-2618A	SX Table-Installation Frame			
52-3017A	Table-Top Stand for 52-4018			
52-2804A	SX Console Frame	<ul style="list-style-type: none"> <li>angled console frame with metal sides</li> <li>rear height 52 mm</li> <li>magnetic fixing for panels</li> <li>simple table cutout required</li> </ul>		
52-2806A	SX Console Frame			
52-2808A	SX Console Frame			1
52-2810A	SX Console Frame			1
52-2814A	SX Console Frame		1	
52-2818A	SX Console Frame			
52-3010A	Console Mounting Kit for 52-4018		1	1

## 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)

## 52/SX Mounting Frames

Table-Installation Frames 52-26xx



Console Frames 52-28xx

- Mixing
- Routing
- Controlling
- Networking
- Switching