

52/XC - 52/XS I/O Modules

Specifications

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Technical Specifications

52-7111A - XC Digital In/Out/GPIO Module, 8 ch.



52-7111 front view and rear view

- 4 AES3/EBU/SPDIF inputs, XLR3 female, input sample rate converters, 24 bit
- 4 AES3/EBU/SPDIF outputs, XLR3 male, output sample rate converters, 24 bit
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated
- 2 DSub-9 connectors for GPIOs

Digital Inputs

input impedance:	110 Ohm (AES3/EBU) or 75 Ohm (S/PDIF)
input sensitivity:	> 200mV
input sample rate converters (SRC):	yes, with bypass mode (switchable by configuration software)
SRC input sampling frequency range:	28 kHz ... 195 kHz
frequency response	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
max. input jitter:	> 40 ns (at 48 kHz), > 0.25 UI
supported standards:	AES3/EBU or S/PDIF (switchable by configuration software)

Digital Outputs

output impedance:	110 Ohm (AES/EBU) or 75 Ohm (S/PDIF)
output level:	3.4 V (into 110 Ohm load)
dynamic range (24 bit, dither off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
dither:	off, 16, 20 bit (switchable by configuration software)
jitter:	< 2 ns (peak)
supported standards:	AES3/EBU or S/PDIF (switchable by configuration software)

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	3 W
connector style:	audio input: XLR-3 female audio output: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

52-7112A - XC Digital In/Out/GPIO Module, 8 ch.



52-7112 front view and rear view

- 4 AES3/EBU/SPDIF inputs, XLR3 female, input sample rate converters, 24 bit
- 4 AES3/EBU/SPDIF outputs, XLR3 male, output sample rate converters, 24 bit
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated
- 2 DSub-9 connectors for GPIOs

Digital Inputs

input impedance:	110 Ohm (AES3/EBU) or 75 Ohm (S/PDIF)
input sensitivity:	> 200mV
input sample rate converters (SRC):	yes, with bypass mode (switchable by configuration software)
SRC input sampling frequency range:	28 kHz ... 108 kHz
frequency response	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
max. input jitter:	> 40 ns (at 48 kHz), > 0.25 UI
supported standards:	AES3/EBU or S/PDIF (switchable by configuration software)

Digital Outputs

output impedance:	110 Ohm (AES/EBU) or 75 Ohm (S/PDIF)
output level:	3.4 V (into 110 Ohm load)
output sample rate converters (SRC):	yes (slaved to related input), with bypass mode (switchable by configuration software)
SRC output sampling frequency range:	28 kHz ... 54 kHz
dynamic range (24 bit, dither off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
dither:	off, 16, 20 bit (switchable by configuration software)
jitter:	< 2 ns (peak)
supported standards:	AES3/EBU or S/PDIF (switchable by configuration software)

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	3 W
connector style:	audio input: XLR-3 female audio output: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

52-7170A - XC Quad 3G/HD/SD-SDI De-embedder



52-7170 front view and rear view

- 4 x 3G/HD/SD SDI De-embedders, each:
- Input and loop through BNC connector
 - De-embedder for 2 audio groups, 8 ch.
 - Sample rate converters, 8 channels
 - Selectable audio groups 1/2 or 3/4
 - 4 general purpose inputs, isolated
 - 4 general purpose outputs, isolated

Digital Video Input

cable type:	coaxial cable, Serial Digital Interface (adaptive cable equalizer included)
rate:	operation at 2.97 Gb/s, 2.97/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s and 270 Mb/s
supported standards:	SMPTE 425M (Level A and Level B), 424M, 260M, 259M-C, 274M, 296M, 125M, 292M, ITU-R BT.656



Download

You can find a detailed overview of supported video formats in the following document:

http://dhd-audio.de/dhd_files/52xc/manual/html/52xc_modules_en/52-7170_product-information.pdf

function:	Audio de-embedder for 8 channels of 48 kHz audio
sample rate converter of de-embedder:	yes, with bypass mode (switchable by configuration software)
frequency response:	< 0.01 dB

Digital Video Input

dynamic range (SRC off): > 144 dB (unweighted, 24 bit embedded audio data)

signal to noise ratio (SRC off): > 144 dB (unweighted)

THD+N (SRC on, 48 kHz to 48 kHz): < -130 dB / 0.00003% (-1 dBFS test signal)

Loop-Through Digital Video Output

output signal: reclocked digital video input

cable type: coaxial cable, Serial Digital Interface

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated): external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V

4 GPOs (electronic relay, isolated): maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption: 5.8 W

connector style: BNC

printed circuit board (PCB) revision for this specifications: 1

**Note**

All values are typical values.

52-7172A - XC Dual Embedder/De-embedder



52-7172 front view and rear view

2 x 3G/HD/SD SDI De-embedders and 2 x HD/SD SDI Embedders, each:

- In, 2x loop through, Out BNC connectors – for 2 audio groups, 8 ch., SRCs
- Selectable audio groups 1/2 or 3/4
- minimum firmware 7.4.10
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated

Digital Video Input

cable type:	coaxial cable, Serial Digital Interface (adaptive cable equalizer included)
rate:	operation at 2.97 Gb/s, 2.97/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s and 270 Mb/s
supported standards:	SMPTE 425M (Level A and Level B), 424M, 260M, 259M-C, 274M, 296M, 125M, 292M, ITU-R BT.656; 272M; 299M
function:	Up to eight channels (two audio groups) of serial digital audio may be extracted from the video data stream, in accordance with SMPTE 272M-C and SMPTE 299M.
sample rate converter of de-embedder:	yes, with bypass mode (switchable by configuration software)
frequency response:	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted, 24 bit embedded audio data)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 48 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)

Digital Video Output

cable type:	coaxial cable, Serial Digital Interface (adaptive cable equalizer included)
rate:	operation at 2.97 Gb/s, 2.97/1.001 Gb/s, 1.485 Gb/s, 1.485/1.001 Gb/s and 270 Mb/s
supported standards:	SMPTE 425M (Level A and Level B), 424M, 260M, 259M-C, 274M, 296M, 125M, 292M, ITU-R BT.656; 272M; 299M
function:	In accordance with SMPTE ST 272 and SMPTE ST 299, up to eight channels (two audio groups) of serial digital audio may be embedded into the video data stream. 16, 20 and 24-bit audio formats are supported at 48kHz synchronous for SD modes and 48kHz synchronous or asynchronous in HD, 3Gb/s modes.
sample rate converter of embedder:	yes, with bypass mode (switchable by configuration software)
frequency response:	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted, 24 bit embedded audio data)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 48 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)

Loop-Through Digital Video Output

output signal:	reclocked digital video input
cable type:	coaxial cable, Serial Digital Interface

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption: 5.8 W

connector style: BNC

printed circuit board (PCB) revision for this specifications: 1

**Note**

All values are typical values.

52-7222A - XC Analog In/Out/GPIO Module, 4 ch.



52-7222 front view and rear view

- 4 analog line inputs, 18dBu max., XLR3 female, el. balanced, 24 bit
- 4 analog line outputs, 18dBu max., XLR3 male, el. balanced, 24 bit
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated
- 2 DSub-9 connectors for GPIOs

A/D Converter

max. input level:	18 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.03 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +17 dBu)
crosstalk:	< -100 dB
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
common mode rejection:	> 60 dB
converter technology:	24 bit, oversampling sigma-delta

D/A Converter

max. output level (phones, single ended):	18 dBu (balanced)
output impedance:	25 Ohm

D/A Converter

minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.05 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +17 dBu)
crosstalk:	< -90 dB
dynamic range:	> 109 dB (A-weighted)
signal to noise ratio:	> 107 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	4.2 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: XLR-3 female audio output: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

52-7223A - XC Analog In/Out/GPIO Module, 4 ch.



52-7223 front view and rear view

- 4 analog line inputs, 24dBu max., XLR3 female, el. balanced, 24 bit
- 4 analog line outputs, 24dBu max., XLR3 male, el. balanced, 24 bit
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated
- 2 DSub-9 connectors for GPIOs

A/D Converter

max. input level:	24 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.03 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +23 dBu)
crosstalk:	< -100 dB
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
common mode rejection:	> 60 dB
converter technology:	24 bit, oversampling sigma-delta

D/A Converter

max. output level (phones, single ended):	24 dBu (balanced)
output impedance:	25 Ohm

D/A Converter

minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.05 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +23 dBu)
crosstalk:	< -90 dB
dynamic range:	> 109 dB (A-weighted)
signal to noise ratio:	> 107 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	6.1 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: XLR-3 female audio output: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

52-7224A - XC Analog In/Out/GPIO Module, 4 ch.



52-7224 front view and rear view

- 4 analog line inputs, 18 or 24dBu max., XLR3 female, el. balanced, 24 bit
- 4 analog line outputs, 18 or 24dBu max., XLR3 male, el. balanced, 24 bit
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated
- 2 DSub-9 connectors for GPIOs

A/D Converter, 18 dBu mode

max. input level:	18 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.03 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +17 dBu)
crosstalk:	< -100 dB
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
common mode rejection:	> 60 dB
converter technology:	24 bit, oversampling sigma-delta

D/A Converter, 18 dBu mode

max. output level (phones, single ended):	18 dBu (balanced)
output impedance:	25 Ohm

D/A Converter, 18 dBu mode

minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.05 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +17 dBu)
crosstalk:	< -90 dB
dynamic range:	> 109 dB (A-weighted)
signal to noise ratio:	> 107 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

A/D Converter, 24 dBu mode

max. input level:	24 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.03 dB
THD+N:	< -90 dB / 0.003% (-1 dBFS, +23 dBu)
crosstalk:	< -100 dB
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
common mode rejection:	> 60 dB

converter technology: 24 bit, oversampling sigma-delta

D/A Converter, 24 dBu mode

max. output level (phones, single ended): 24 dBu (balanced)

output impedance: 25 Ohm

minimum load (outputs short circuit protected): 600 Ohm

frequency response: < 0.05 dB

THD+N: < -90 dB / 0.003% (-1 dBFS, +23 dBu)

crosstalk: < -90 dB

dynamic range: > 109 dB (A-weighted)

signal to noise ratio: > 107 dB (unweighted)

DC offset voltage: < 10 mV

common mode rejection (output impedance): > 60 dB

common mode rejection (output voltage): > 40 dB

converter technology: 24 bit, oversampling sigma-delta

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated): external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V

4 GPOs (electronic relay, isolated): maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption, 18 dBu mode: 4.8 W

power consumption, 24 dBu mode: 6.8 W

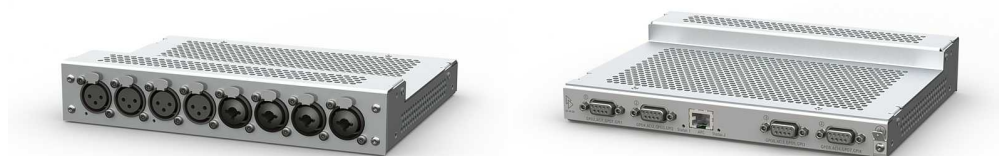
sample frequency: 48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)

connector style: audio input: XLR-3 female
audio output: XLR-3 male
GPIO: SubD-9 female

**Note**

All values are typical values.

52-7230A/52-7235A - XC Mic/Headphone/GPIO Module, 4 ch.



52-7235 front view and rear view

4 mic/line inputs with remote preamp, XLR3 female, 18dBu max., 48V phantom

- 4 stereo headphone outputs, Neutrik Combicon connectors
- 4 general purpose inputs, isolated
- 8 general purpose outputs, isolated
- 4 analog control inputs, 4 DSub-9

A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 8 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -87 dB / 0.004% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)

A/D Converter

common mode rejection:	> 60 dB
converter technology:	24 bit, oversampling sigma-delta

D/A Converter

max. output level (headphones, single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -82 dB / 0.008% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

General Purpose Inputs / Outputs (GPI/GPO)

4 not isolated analog control inputs to connect external potentiometers for level controlling:	Do not use any of the ACI signals for other purposes than wiring to the potentiometer! ACI_VLO must not be connected to chassis, housing, earth, shield or other common signals! The potentiometer must have a resistance value of 10 kOhms (linear)
4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
8 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	11.6 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: XLR-3 female audio output: combined XLR-3 female/ 1/4" TRS jack GPIO: SubD-9 female

**Note**

All values are typical values.

**Warning**

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of the pre-amplifier or phantom power generator.

52-7255A/52-7258A - XC Mic/Line Module, 8 ch., iso.



52-7255 front view and rear view

8 mic/line inputs with remote preamp, 0...65 dB, 26 dBu max. input level

- isolated input stages
- phantom power 48V indiv. switchable
- 4 general purpose inputs, isolated
- 4 general purpose outputs, isolated

A/D Converter

input sensitivity:	-79 dBu (at Toolbox settings: "Headroom 20dB", "Level Adjust 6dBu = -20dBFS = 0dBint", maximum analog gain +70 dB)
maximum input level:	+26 dBu
analog gain setting:	-20 dB...+70 dB in 1 dB steps



Note

The Analog Gain setting for the 52-7255A/52-7258A at the mixers control surface, controls the analog preamp and the analog pad according to the Headroom and reference Level Adjustment settings of the Toolbox. It uses an additional digital gain adjustment for simple control with just one encoder, instead of 2 encoders (1 for analog gain and 1 for digital gain) plus pad key.

The Analog Gain setting on the console of the 52-7255A/52-7258A is different to the 52-7230A/52-7235A. This has a 0 dB to 63 dB adjustment range of the analog gain.

frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 112 dB (A-weighted)

A/D Converter

signal to noise ratio:	> 110 dB (unweighted)
THD+N:	< -85 dB / 0.006% (-1 dBFS, +14 dBu)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -120 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
common mode rejection:	> 60 dB
converter technology:	24 bit, oversampling sigma-delta

General Purpose Inputs / Outputs (GPI/GPO)

4 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	11.7 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: XLR-3 female GPIO: SubD-9 female

**Note**

All values are typical values.

**Warning**

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

52-1330B - XS Multi-I/O Box



52-1330 front view and rear view

2 Mic/Line inputs, preamp, 48V
 2 stereo headphone outputs
 8 analog line inputs, el. bal., 24dBu
 8 analog line outputs, el. bal., 24dBu
 3 AES3/EBU inputs, 1 SPDIF input
 2 AES3/EBU outputs, 1 SPDIF output
 2 USB Audio IF, 10 GPI, 10 GPO, 2 ACI

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)

Mic/Line - A/D Converter

common mode rejection:	> 45 dB
converter technology:	24 bit, oversampling sigma-delta

Headphones - D/A Converter

max. output level (single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 107 dB (A-weighted)
signal to noise ratio:	> 105 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Line - A/D Converter

max. input level:	24 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.05 dB
THD+N:	< -85 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -100 dB

Line - A/D Converter

dynamic range:	> 98 dB (A-weighted)
common mode rejection:	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Line - D/A Converter

max. output level:	24 dBu (balanced)
output impedance:	25 Ohm
minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -90 dB
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Digital Inputs

input impedance:	110 Ohm (AES3/EBU) or 75 Ohm (S/PDIF)
input sensitivity:	> 200mV
input sample rate converters (SRC):	yes, with bypass mode (switchable by configuration software)
SRC input sampling frequency range:	28 kHz ... 195 kHz
frequency response:	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
max. input jitter:	> 40 ns (at 48 kHz), > 0.25 UI

Digital Outputs

output impedance (AES3/EBU):	110 Ohm
output impedance (S/PDIF):	75 Ohm
output level (AES3/EBU):	3.4 V (into 110 Ohm load)
output level (S/PDIF):	0.5 V (into 75 Ohm load)
dynamic range (24 bit, dither off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
dither:	off, 16, 20 bit (switchable by configuration software)
jitter:	< 2 ns (peak)

USB audio port

- 1 stereo input, sample rate converter, 16 bit
- 1 stereo output, sample rate converter (linked to associated input if activated in Toolbox), 16 bit
- USB full-speed transceivers
- compliant with USB 2.0 specification
- bus-powered USB circuit (the Windows or Mac driver still works when 52-1330 is powered off)
- default Windows or Mac USB audio device driver is used, no additional driver required

General Purpose Inputs / Outputs (GPI/GPO)

2 not isolated analog control inputs to connect external potentiometers for level controlling:	Do not use any of the ACI signals for other purposes than wiring to the potentiometer! ACI_VLO must not be connected to chassis, housing, earth, shield or other common signals! The potentiometer must have a resistance value of 10 kOhms (linear)
10 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
10 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	11 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: SubD-15 female audio output: SubD-15 female S/PDIF input: RCA connector, female S/PDIF output: RCA connector, female GPIO: SubD-15 female



Note

All values are typical values.



Warning

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

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



52-1335 front view and rear view

2 Mic/Line inputs, preamp, 48V
 2 stereo headphone outputs
 8 analog line inputs, el. bal., 24dBu
 8 analog line outputs, el. bal., 24dBu
 3 AES3/EBU inputs, 1 SPDIF input
 2 AES3/EBU outputs, 1 SPDIF output
 2 USB Audio IF, 10 GPI, 10 GPO, 2 ACI

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)

Mic/Line - A/D Converter

common mode rejection:	> 45 dB
converter technology:	24 bit, oversampling sigma-delta

Headphone - D/A Converter

max. output level (single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 107 dB (A-weighted)
signal to noise ratio:	> 105 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Line - A/D Converter

max. input level:	24 dBu (balanced)
input impedance:	15 kOhm
frequency response:	< 0.05 dB
THD+N:	< -85 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -100 dB

Line - A/D Converter

dynamic range:	> 98 dB (A-weighted)
common mode rejection:	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Line - D/A Converter

max. output level:	24 dBu (balanced)
output impedance:	25 Ohm
minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -90 dB
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Digital Inputs

input impedance:	110 Ohm (AES3/EBU) or 75 Ohm (S/PDIF)
input sensitivity:	> 200mV
input sample rate converters (SRC):	yes, with bypass mode (switchable by configuration software)
SRC input sampling frequency range:	28 kHz ... 108 kHz
frequency response:	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
max. input jitter:	> 40 ns (at 48 kHz), > 0.25 UI

Digital Outputs

output impedance (AES3/EBU):	110 Ohm
output impedance (S/PDIF):	75 Ohm
output level (AES3/EBU):	3.4 V (into 110 Ohm load)
output level (S/PDIF):	0.5 V (into 75 Ohm load)
output sample rate converters (SRC):	yes (slaved to related input), with bypass mode (switchable by configuration software)
SRC output sampling frequency range:	28 kHz ... 54 kHz
dynamic range (24 bit, dither off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
dither:	off, 16, 20 bit (switchable by configuration software)

jitter: < 2 ns (peak)

USB audio port

- 1 stereo input, sample rate converter, 16 bit
- 1 stereo output, sample rate converter (linked to associated input if activated in Toolbox), 16 bit
- USB full-speed transceivers
- compliant with USB 2.0 specification
- bus-powered USB circuit (the Windows or Mac driver still works when 52-1335 is powered off)
- default Windows or Mac USB audio device driver is used, no additional driver required

General Purpose Inputs / Outputs (GPI/GPO)

2 not isolated analog control inputs to connect external potentiometers for level controlling:	Do not use any of the ACI signals for other purposes than wiring to the potentiometer! ACI_VLO must not be connected to chassis, housing, earth, shield or other common signals! The potentiometer must have a resistance value of 10 kOhms (linear)
10 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
10 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	11 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	audio input: SubD-15 female audio output: SubD-15 female S/PDIF input: RCA connector, female S/PDIF output: RCA connector, female GPIO: SubD-15 female



Note

All values are typical values.



Warning

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

52-1830A/B - XS2 I/O Core



52-1830 front view and rear view

2 Mic/Line inputs, preamp, 48V
 1 stereo headphone output
 2 analog line inputs, el. bal., 24dBu
 2 analog line inputs, unbal.
 4 analog line outputs, el. bal., 24dBu
 2 analog line outputs, unbal.
 3 AES3/EBU inputs,
 3 AES3/EBU outputs,
 1 SPDIF or ADAT input
 1 SPDIF or ADAT output
 1 USB Audio IF, 2 GPI, 4 GPO

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)

Mic/Line - A/D Converter

crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)
common mode rejection:	> 45 dB
converter technology:	24 bit, oversampling sigma-delta

Headphones - D/A Converter

max. output level (single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 107 dB (A-weighted)
signal to noise ratio:	> 105 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Line, balanced - A/D Converter

max. input level:	24 dBu (balanced)
input impedance:	15 kOhm

Line, balanced - A/D Converter

frequency response:	< 0.05 dB
THD+N:	< -85 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -100 dB
dynamic range:	> 98 dB (A-weighted)
common mode rejection:	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Line, un-balanced - A/D Converter

max. input level:	13 dBu (un-balanced)
input impedance:	> 40 kOhm
frequency response:	< 0.05 dB
THD+N:	< -85 dB / 0.006% (-1 dBFS, +12 dBu)
crosstalk:	< -80 dB
dynamic range:	> 98 dB (A-weighted)
converter technology:	24 bit, oversampling sigma-delta

Line, balanced - D/A Converter

max. output level:	24 dBu (balanced)
output impedance:	25 Ohm
minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.1 dB

Line, balanced - D/A Converter

THD+N:	< -84 dB / 0.006% (-1 dBFS, +23 dBu)
crosstalk:	< -90 dB
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Line, un-balanced - D/A Converter

max. output level:	8 dBu (balanced)
output impedance:	ca. 250 Ohm
frequency response:	< 0.1 dB
THD+N:	< -84 dB / 0.006% (-1 dBFS, +7 dBu)
crosstalk:	< -80 dB
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Digital Inputs

input impedance:	110 Ohm (AES3/EBU)
input sensitivity:	> 200mV
input sample rate converters (SRC):	yes, with bypass mode (switchable by configuration software)
SRC input sampling frequency range:	28 kHz ... 108 kHz
frequency response:	< 0.01 dB
dynamic range (SRC off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
max. input jitter:	> 40 ns (at 48 kHz), > 0.25 UI

Digital Outputs

output impedance (AES3/EBU):	110 Ohm
output level (AES3/EBU):	3.4 V (into 110 Ohm load)
output sample rate converters (SRC):	yes (slaved to related input), with bypass mode (switchable by configuration software)
SRC output sampling frequency range:	28 kHz ... 54 kHz
dynamic range (24 bit, dither off):	> 144 dB (unweighted)
signal to noise ratio (SRC off):	> 144 dB (unweighted)
THD+N (SRC on, 44.1 kHz to 48 kHz):	< -130 dB / 0.00003% (-1 dBFS test signal)
dither:	off, 16, 20 bit (switchable by configuration software)
jitter:	< 2 ns (peak)

USB audio port

- 1 stereo input, sample rate converter
- 1 stereo output, sample rate converter (linked to associated input if activated in Toolbox)
- full-speed transceivers
- compliant with USB 2.0 specification
- self-powered USB circuit
- default Windows or Mac USB audio device driver is used, no additional driver required
- iOS devices with version 7.0 or higher can be connected via a camera connection kit for playback and recording

General Purpose Inputs / Outputs (GPI/GPO)

2 GPIs (optocoupler, isolated):	external ON voltage 5 V ... 24 V (DC) without external resistor, internal current limiter to 4 mA current for ON, OFF voltage: 0 V ... + 1.5 V
4 GPOs (electronic relay, isolated):	maximum rated current: 0.2 A (resettable fuse), maximum peak switched voltage: 30 V DC

Further Information

power consumption:	30 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	<p>Line and Mic inputs, balanced: XLR-3 female Line outputs 1 and 2, balanced: XLR-3 male Line inputs, un-balanced: RCA connector Line outputs, un-balanced: RCA connector Line outputs 5 and 6, balanced: SubD-15 female Headphones: combined XLR-3 female/ 1/4" TRS jack and same signal output on SubD-15 female AES3 input 1: XLR-3 female AES3 output 1: XLR-3 male AES3 input 2 and 3: SubD-15 female AES3 output 2 and 3: SubD-15 female GPIO: SubD-9 female S/PDIF / ADAT input: TOSLINK, optical S/PDIF / ADAT output: TOSLINK, optical GPIO: SubD-15 female</p>



Note

All values are typical values.



Warning

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

52-1156A/B/C - TX Multitouch Mixer



52-1156 front view and rear view

1 Mic/Line inputs, preamp, 48V
1 stereo headphone outputs

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)
common mode rejection:	> 45 dB

Mic/Line - A/D Converter

converter technology: 24 bit, oversampling sigma-delta

Headphones - D/A Converter

max. output level (single ended): 18 dBu

output impedance: 100 Ohm

load impedance (outputs short circuit protected): > 32 Ohm

frequency response: < 0.1 dB

THD+N: < -84 dB / 0.006% (-1 dBFS, 100 Ohm load)

crosstalk: < -80 dB (unbalanced)

dynamic range: > 107 dB (A-weighted)

signal to noise ratio: > 105 dB (unweighted)

DC offset voltage: < 10 mV

converter technology: 24 bit, oversampling sigma-delta

Further Information

power consumption: 15 W

sample frequency: 48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)

connector style: audio input: XLR-3 female
audio output: combined XLR-3 female/ 1/4" TRS jack

**Note**

All values are typical values.

**Warning**

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

52-5614A - SX2 Central & Fader Module



52-5614 front view and rear view

1 Mic/Line inputs, preamp, 48V
 1 stereo headphones output
 2 analog line outputs, 18dBu max., XLR3 male, el. balanced, 24 bit
 2 general purpose inputs, isolated
 2 general purpose outputs, isolated
 1 DSub-9 connectors for GPIOs

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)

Mic/Line - A/D Converter

common mode rejection:	> 45 dB
converter technology:	24 bit, oversampling sigma-delta

Headphones - D/A Converter

max. output level (single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -81 dB / 0.009% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Line - D/A Converter

max. output level:	18 dBu (balanced)
output impedance:	25 Ohm
minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.1 dB
THD+N:	< -89 dB / 0.0035% (-1 dBFS, +17 dBu)
crosstalk:	< -90 dB
dynamic range:	> 106 dB (A-weighted)
signal to noise ratio:	> 104 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Further Information

power consumption:	25 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	mic input: XLR-3 female headphones output: combined XLR-3 female/ 1/4" TRS jack analogue line outputs: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

**Warning**

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

52-5810A - RX2 Central Module



52-5810 front view and rear view

1 Mic/Line inputs, preamp, 48V
 1 stereo headphones output
 2 analog line outputs, 18dBu max., XLR3 male, el. balanced, 24 bit
 2 general purpose inputs, isolated
 2 general purpose outputs, isolated
 1 DSub-9 connectors for GPIOs

Mic/Line - A/D Converter

input sensitivity:	-77 dBu (at 0 dBFS = 18 dBu, max. analog gain= +63 dB, max. digital gain = +20 dB, reference level = +6 dBu)
maximum input level:	+18 dBu
gain setting:	analog gain: 0 dB, 10 dB ... 63 dB in 1 dB-steps, digital gain -20 dB ... +20 dB in 1 dB-steps
frequency response:	< 0.03 dB
input impedance:	5 kOhm
dynamic range:	> 111 dB (A-weighted)
signal to noise ratio:	> 109 dB (unweighted)
THD+N:	< -82 dB / 0.008% (-1 dBFS, +17 dBu, 0 dB analog / digital gain)
equivalent input noise:	< -127 dBu (150 Ohm source), < -126 dBu (200 Ohm source)
crosstalk:	< -110 dB (1 kHz)
phantom power 48V:	switchable per input channel, unloaded input: 48V +/- 10%
max. input level:	18 dBu (balanced)

Mic/Line - A/D Converter

common mode rejection:	> 45 dB
converter technology:	24 bit, oversampling sigma-delta

Headphones - D/A Converter

max. output level (single ended):	18 dBu
output impedance:	100 Ohm
load impedance (outputs short circuit protected):	> 32 Ohm
frequency response:	< 0.1 dB
THD+N:	< -81 dB / 0.009% (-1 dBFS, 100 Ohm load)
crosstalk:	< -80 dB (unbalanced)
dynamic range:	> 104 dB (A-weighted)
signal to noise ratio:	> 102 dB (unweighted)
DC offset voltage:	< 10 mV
converter technology:	24 bit, oversampling sigma-delta

Line - D/A Converter

max. output level:	18 dBu (balanced)
output impedance:	25 Ohm
minimum load (outputs short circuit protected):	600 Ohm
frequency response:	< 0.1 dB
THD+N:	< -89 dB / 0.0035% (-1 dBFS, +17 dBu)
crosstalk:	< -90 dB
dynamic range:	> 106 dB (A-weighted)
signal to noise ratio:	> 104 dB (unweighted)
DC offset voltage:	< 10 mV
common mode rejection (output impedance):	> 60 dB
common mode rejection (output voltage):	> 40 dB
converter technology:	24 bit, oversampling sigma-delta

Further Information

power consumption:	25 W
sample frequency:	48 kHz or 44.1 kHz (automatically synchronised to the configured device system sample frequency)
connector style:	mic input: XLR-3 female headphones output: combined XLR-3 female/ 1/4" TRS jack analogue line outputs: XLR-3 male GPIO: SubD-9 female

**Note**

All values are typical values.

**Warning**

The wiring of microphone inputs of DHD microphone input modules is not designed to support operation with parallel external phantom power. Using it might result in damages of pre-amplifier or phantom power generator.

Any Input to Any Output

measured from any analogue or digital input to any analogue or digital output

frequency response: < 0.2 dB

THD+N < -80 dB / 0.01% (@ -1 dBFS)

signal to noise ratio: > 95 dB



Note

All values are typical values. Measured between modules 52-7111, 52-7112, 52-7230, 52-7235, 52-7255, 52-7258, 52-7222, 52-7223, 52-7224.

Audio Latency

Audio Signal Delays of XS Cores & XS I/O Module



Download

You can find an overview of audio signal delays in XS systems in the following document:

https://support.dhd.audio/lib/exe/fetch.php?media=installation:xs_audio-signal-delays_1.pdf

Audio Signal Delays of XC/XD Cores & XC I/O Modules



Download

You can find an overview of audio signal delays in XC and XD systems in the following document:

https://support.dhd.audio/lib/exe/fetch.php?media=installation:xc-xd_audio-signal-delays_1.pdf