CODA

CODA AUDIO

LINUS DSP &
Amplification


LINUS14D
STORE
UP
DOWN
SEL
LIMIT
SIGNAL
SENSOR
PROTECT

LINUS Loudspeaker Management Amplifiers

More power, more control, more efficiency: CODA Audio's LINUS loudspeaker management amplifiers are designed to control all CODA Audio loudspeakers. They are perfectly at home in any role, in both touring and installed sound applications. The platform provides intelligent processing, amplification and monitoring in demanding environments; from the smallest of corporate FOH applications, to the largest of stadium installations (and all those in between). Their powerful DSP includes factory presets utilising advanced proprietary DS-FIR and IIR filtering techniques, which obtain maximum performance from CODA Audio loudspeaker systems.

LINUS features

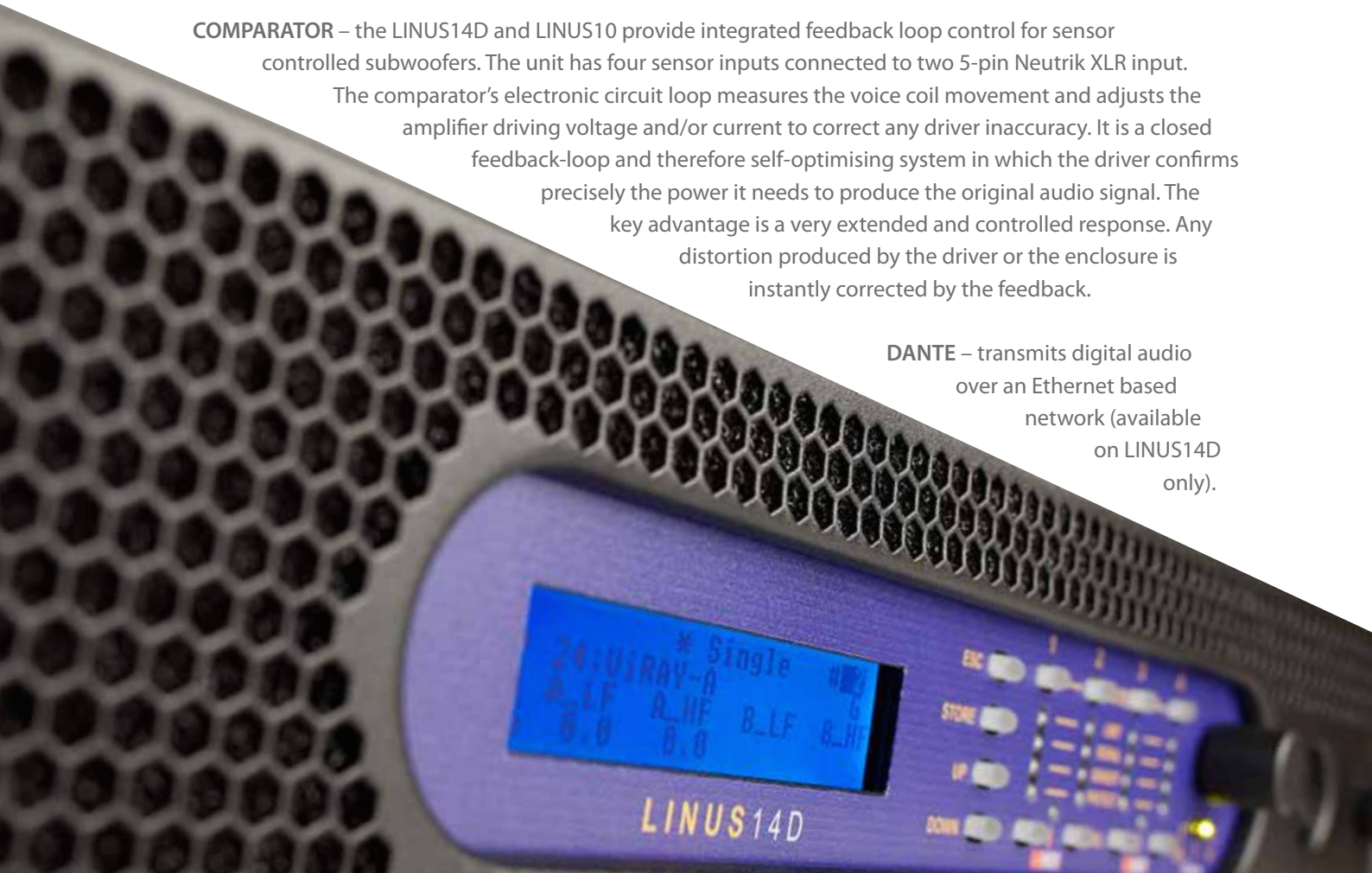
LINUS CORE – an integral SHARC floating point DSP processor ensures tremendous processing power enabling the integration of sophisticated audio algorithms. The advanced signal processing includes IIR and phase linear DS-FIR filters for perfect linearity and superior sound performance as well as advanced look-ahead limiters for increased system headroom and sonic fidelity under heavy use.

LiNET – a robust, redundant audio transport solution that transmits digital audio over shielded CAT5e cable. Up to 8 digital audio signals can be sent to each amplifier via LiNET, buffered and sent to the next unit via the LiNET link out for daisy chaining. The signal routing inside the LINUS14D can be done remotely or using the pushbuttons on the front panel.

LINUS Control – Ethernet based graphical user interface for fast and flexible system configuration, tuning and control, intuitive and straight forward system design.

COMPARATOR – the LINUS14D and LINUS10 provide integrated feedback loop control for sensor controlled subwoofers. The unit has four sensor inputs connected to two 5-pin Neutrik XLR input. The comparator's electronic circuit loop measures the voice coil movement and adjusts the amplifier driving voltage and/or current to correct any driver inaccuracy. It is a closed feedback-loop and therefore self-optimising system in which the driver confirms precisely the power it needs to produce the original audio signal. The key advantage is a very extended and controlled response. Any distortion produced by the driver or the enclosure is instantly corrected by the feedback.

DANTE – transmits digital audio over an Ethernet based network (available on LINUS14D only).



LINUS14D

The LINUS14D is a four channel DSP, network, comparator and amplifier delivering 4x 3500 W of clean power in a light weight 19"/2U package. The 4 audio inputs are selectable from analog, LiNET digital audio or DANTE audio network and are routable to any of the 4 outputs via the input matrix.

The LINUS14D engine is a class D-IC output stage topology delivering audiophile sonic accuracy with enormous headroom providing significant improvement of the system performance in dynamics and transparency with the added connectivity of DANTE.

4 Channel Loudspeaker Management Amplifier

Main Features

- Integrated DSP, network, comparator and amplifier solution
- 4x 3500 W @ 4 Ohm
- Class D-IC amplifiers for superior sound performance
- SMPS with automatic selection for 115 V or 230 V
- SHARC floating point DSP @ 96 kHz
- 4 balanced analogue inputs
- LiNET 8x freely configurable digital audio signals over CAT5e
- DANTE – audio network
- 4 dynamic comparators for use with CODA Audio sensor controlled subwoofers
- Advanced IIR and linear phase FIR filters
- LINUS Control – network control and monitoring of amplifiers over Ethernet
- Factory presets for all CODA Audio loudspeaker systems
- 5 year warranty

LINUS10

The LINUS10 is a dual channel DSP, network, comparator and amplifier delivering 10000 W of clean power in a light weight 19"/2U package. The exceptional power of the LINUS10 ensures maximum headroom and optimal system performance for all CODA Audio touring systems.

The LINUS10 engine is a hybrid class H output stage topology delivering audiophile sonic accuracy with enormous headroom providing significant improvement of the system performance in dynamics and transparency.

2 Channel Loudspeaker Management Amplifier

Main Features

- Integrated DSP, network, comparator and amplifier solution
- 2 x 5100 W @ 2 Ohms High output voltage (200 V peak) provides plenty of headroom
- True Class H design for superior sound performance
- SMPS with automatic selection for 115 V or 230 V
- SHARC floating point DSP @ 96 kHz
- 2 balanced analogue inputs
- LiNET – 8x freely configurable digital audio signals over CAT5e
- 2 dynamic comparators for use with CODA Audio sensor controlled subwoofers
- Advanced IIR and linear phase FIR filters
- LINUS Control – network control and monitoring of amplifiers over Ethernet
- Factory presets for all CODA Audio loudspeaker systems
- 5 year warranty

LINUS10-C

The LINUS10-C is a 4 channel loudspeaker management amplifier providing 10000 W total RMS power output. Aimed at both installation and mobile applications the light 19”/2U package incorporates 4-in, 4-out DSP, network and amplification to deliver maximum flexibility, reduced rack space, less weight and reduced system cost.

The LINUS-C engine is class D output stage topology delivering high power with enormous headroom providing significant improvement of the system performance in dynamics and transparency.

4 Channel Loudspeaker Management Amplifier

Main Features

- Integrated DSP, network and amplifier solution
- High efficiency Class D amplifier engine
- Light weight SMPS power supply
- SHARC floating point DSP @ 96 kHz
- 4 balanced analogue inputs
- LiNET-C: 4 x freely configurable digital audio signals over CAT5e
- LINUS Control– network control and monitoring of amplifiers over Ethernet
- CODA Audio factory presets using advanced linear phase FIR filters
- 5 year warranty

LINUS5-C

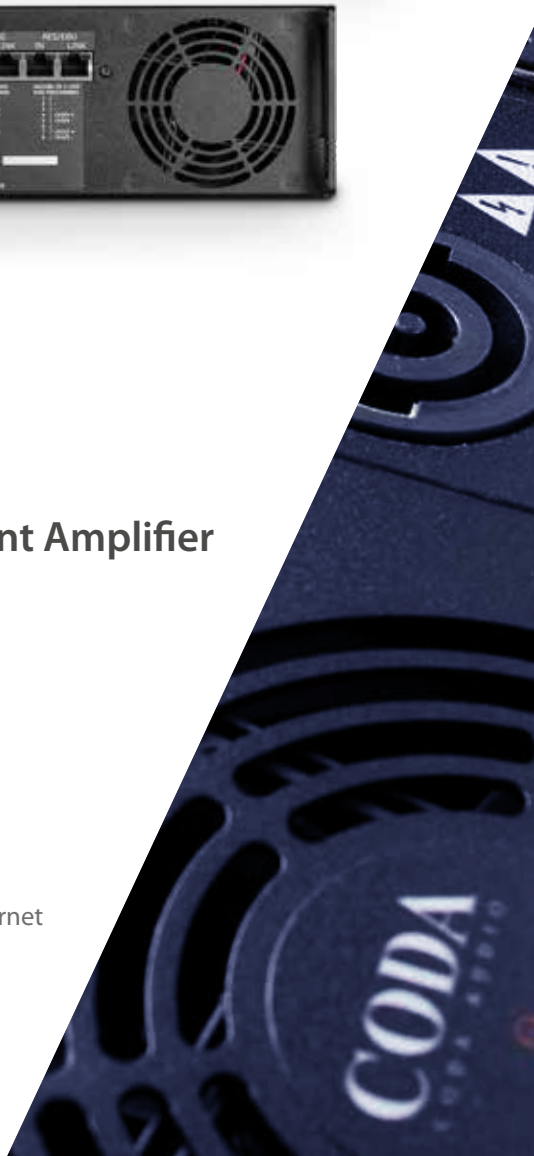
The LINUS5-C is a 4 channel loudspeaker management amplifier providing 5000 W total RMS power output. Aimed at both installation and mobile applications the light 19”/2U package incorporates 4-in, 4-out DSP, network and amplification to deliver maximum flexibility, reduced rack space, less weight and reduced system cost.

The LINUS-C engine is class D output stage topology delivering high power with enormous headroom providing significant improvement of the system performance in dynamics and transparency.

4 Channel Loudspeaker Management Amplifier

Main Features

- Integrated DSP, network and amplifier solution
- High efficiency Class D amplifier engine
- Light weight SMPS power supply
- SHARC floating point DSP @ 96 kHz
- 4 balanced analogue inputs
- LiNET-C: 4 x freely configurable digital audio signals over CAT5e
- LINUS Control – network control and monitoring of amplifiers over Ethernet
- CODA Audio factory presets using advanced linear phase FIR filters
- 5 year warranty



DATAD

At the heart of any CODA Audio system is the transportation and distribution of digital audio signals. The DATAD family of products comprise several units designed to do this with ultimate flexibility. All are compatible with each other, and are fully compatible with our LINUS loudspeaker management amplifiers.

Redundant distribution weith lengths of 300 m are achievable with LiNET on shielded CAT5e cable, with longer runs possible on shielded CAT6A cabling, all with incredibly low latency.

Digital Audio Transport And Distribution

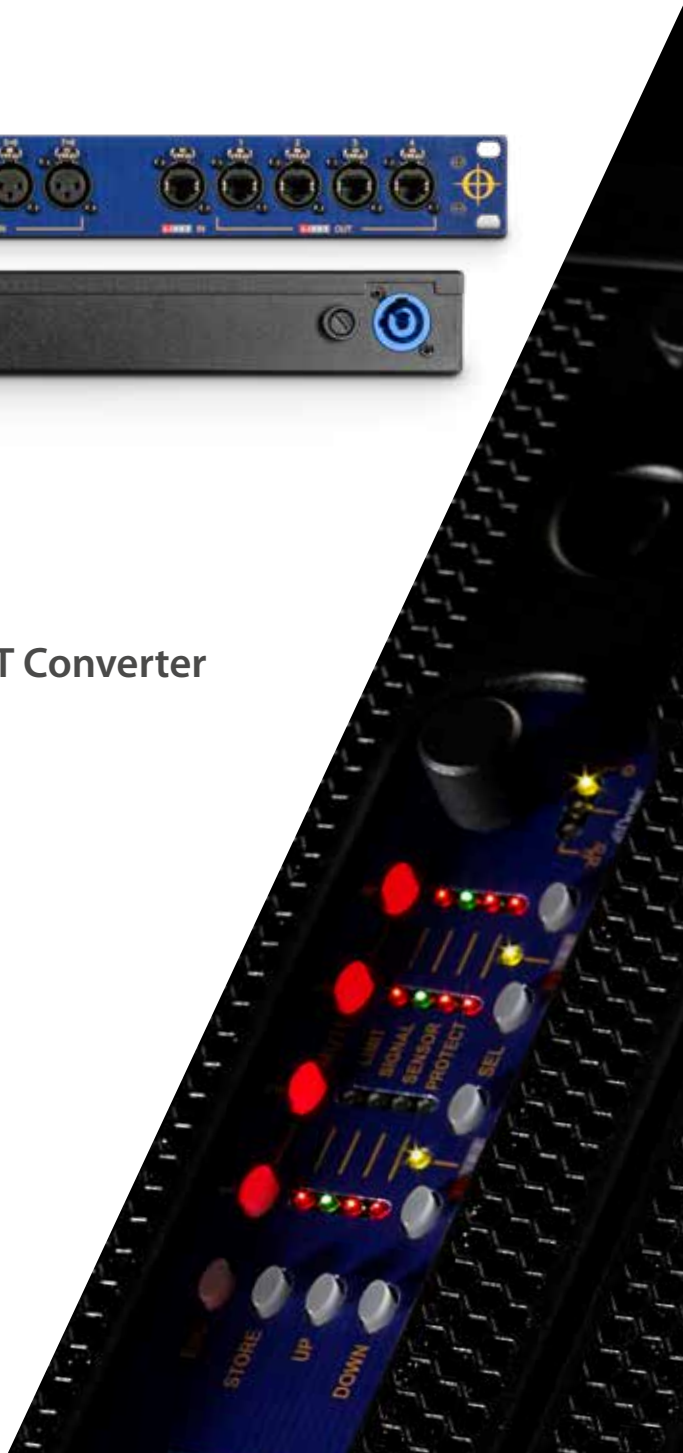
Main Features

- Simple and easy to use
- Extremely reliable
- Redundancy support
- Very long distances of 300 m or more
- 96 kHz sample rate
- Cost efficient
- Low latency
- Supported by all LINUS amplifiers and racks
- 5 year warranty

LiNET Master

The LiNET Master is the bridge between a mixing console and the CODA digital transport system. It serves as a perfect AES/EBU front-end, ensuring ultimate compatibility and redundancy to the entire audio chain.

High quality 44.1 – 192 kHz sample rate converters integrated seamlessly with a pristine word clock guarantee excellent audio transmission with perfect synchronisation at lengths of 300 m with shielded CAT5e cabling, or longer with shielded CAT6A.



Redundant 19" AES To LiNET Converter

Main Features

- 19" / 1U
- Converts AES/EBU to LiNET
- 4x AES/EBU inputs (8 channels)
- 1x LiNET input (8 channels)
- 4x LiNET outputs
- Sample rate 44.1 – 192 kHz
- Dual redundant power supply
- Compatible with all LINUS devices
- Redundant connection to LiNET Switch
- 5 year warranty

LiNET Switch

The LiNET Switch acts as an intelligent distribution amplifier within the CODA digital transport ecosystem. When used with the LiNET Master, fall-back functionality allows for seamless changeover in the event of upstream link failure.

Both LiNET inputs are clock recovered and regenerated with minimal latency, allowing for massive rugged topologies to be easily established.

As with all LiNET devices, extremely long cable runs of 300 m are achievable with LiNET on shielded CAT5e cable, with longer runs possible on shielded CAT6A cabling.

LiNET Switch

Main Features

- 19" / 1U
- 2x LiNET Inputs
- 4x LiNET Outputs
- Fall-back functionality
- Compatible with all LINUS devices
- Incredibly low latency
- 5 year warranty

ATEC

The ATEC is a device designed to combine ethernet control data with 2x AES/EBU streams (4x audio channels) together down one cable, up to a maximum of 100 m on shielded CAT5e cable.

Inheriting advanced LiNET technologies such as the high quality 44.1 – 192 kHz sample rate converters and the pristine world clock, excellent audio quality is guaranteed with perfect synchronisation.

The ATEC is a high quality, extremely reliable AES/EBU front-end for a smaller CODA Audio system.

AES to Ethernet Converter

Main Features

- 9.5”
- Combines ethernet with 2x AES/EBU streams to one cable
- Simple and easy to use
- Status LED’s
- Reliable
- Cable lengths up to 100 m (shielded CAT5e)
- Plug and play operation with LINUS-C amplifiers and LINUS Racks
- Incredibly low latency
- 44.1 to 192 kHz operation
- 5 year warranty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LINUS Racks

System Racks

CODA Audio's LINUS system racks provide complete housing and system connection solutions for all CODA Audio loudspeaker systems.

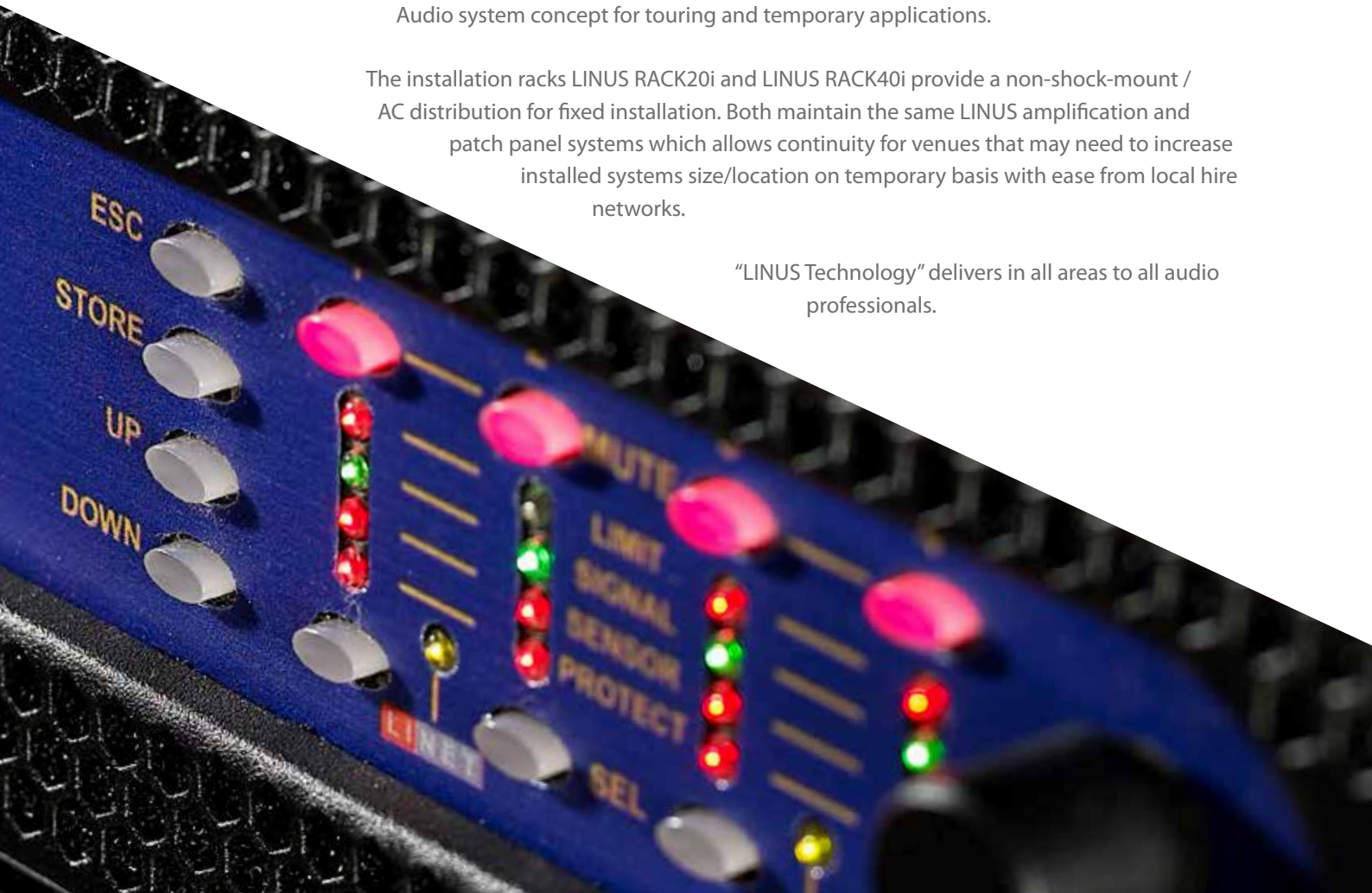
The touring variants feature an internal steel shock-mount suspension system, which ensures maximum protection for the LINUS amplifiers housed inside. The design includes a rack to rack connection system allowing for flown or ground stacked positioning and the connection point for the transport system.

The racks also provide an advanced front facing cable connection patch panel and rear mounted AC mains distribution system designed to facilitate quick and accurate set-up.

In addition, the LINUS DSP platform provides factory presets for all CODA Audio products. Therefore, along with providing FOH system control, these racks can be used for applications such as: monitor systems, delay systems, zoned systems, wherever you need power and processing for your CODA system.
Smart in its design and highly durable in construction, the rack completes the CODA Audio system concept for touring and temporary applications.

The installation racks LINUS RACK20i and LINUS RACK40i provide a non-shock-mount / AC distribution for fixed installation. Both maintain the same LINUS amplification and patch panel systems which allows continuity for venues that may need to increase installed systems size/location on temporary basis with ease from local hire networks.

"LINUS Technology" delivers in all areas to all audio professionals.



LINUS T-RACK

CODA Audio strives to provide complete solutions that allow for simple setup, integration and operation of CODA Audio systems. The LINUS T-RACK is an important part of this effort. The T-RACK houses three LINUS14D amplifiers in an efficient road ready package. This factory-made standard includes switchable rear mounted power distribution, shock mounted infrastructure and ready-to-fly integrated rigging hardware that allow it to be used almost anywhere. The T-RACK's simplified front mounted connectivity and effortless expandability make it easy to use.

12 Channel Touring Rack

19"/10U System Rack including 3x LINUS14D, LINUS PAN-T, Internal Cable set, PDU-T

Main Features

- 3x LINUS14D amplifiers in a 10U heavy-duty rack
- Delivers 12x 3500 W @ 4 Ohm
- Integrated shock-mount suspension system for maximum protection
- Integrated rigging hardware for flown or ground stacked deployment
- Rear mounted power distribution (optional switchable: US / EU)
- Selectable inputs: analog, AES over Ethernet, LiNET, DANTE
- Outputs on NL4, NL8 (Socapex optional available)
- 5-pin XLR comparator inputs for use with CODA Audio sensor controlled subwoofers
- All inputs and outputs are at the front for easy workflow
- Expandable – rack to rack internal cabling allows to join two or more racks together
- Sliding doors for quick access
- Protection grille on the rear
- Can drive all CODA loudspeaker systems

LINUS M-RACK

The LINUS M-RACK continues CODA Audio's comprehensive system-based approach by providing a single LINUS14D DSP/amplifier with a CODA PAN-M connector panel in a compact 3U rack package. As the LINUS14D can power every loudspeaker in the CODA catalogue, the M-RACK makes every smaller portable CODA system as clean and flawless in terms of aesthetics and connectivity as it is in terms of system performance.

Compact 4 Channel Rack

19"/3U Mobile Rack including 1x LINUS14D, LINUS PAN-M, Internal Cable set

Main Features

- One LINUS14D amplifier in a 3U case
- 4x 3500 W @ 4 Ohm
- Selectable inputs: Analog, AES over Ethernet, LiNET, DANTE
- Outputs on NL4, NL8
- 5-pin XLR comparator for use with CODA Audio sensor controlled subwoofers
- All connectors at the front for easy workflow
- Sliding door for quick access
- Protection grille on the rear for connectors protection
- Can drive all CODA loudspeaker systems

LINUS RACK40

In line with CODA's system approach the LINUS RACK40 houses all the necessary hardware for large scale sound systems. LINUS RACK40 is a 11U heavy-duty rack that houses four LINUS10 amplifiers in an efficient road ready package. As with the LINUS T-RACK, it is a factory-made standard including switchable rear mounted power distribution, shock mounted infrastructure and ready-to-fly integrated rigging hardware that allow it to be used almost anywhere.

8 Channel Touring Rack

Main Features

- 4x LINUS10 amplifiers
- 11U touring case
- PAN8 connector panel 2U
- PD32-6 power distribution
- Internal cable set

LINUS RACK20

The LINUS RACK20 is a smaller 7U Rack that houses all the necessary hardware for medium to large scale sound systems. LINUS RACK20 houses two LINUS10 amplifiers in an efficient road ready package. As with the LINUS RACK40, it is a factory-made standard including switchable rear mounted power distribution, shock mounted infrastructure and ready-to-fly integrated rigging hardware that allow it to be used almost anywhere.

4 Channel Touring Rack

Main Features

- 2x LINUS10 amplifiers
- 7U touring case
- PAN4 connector panel 2U
- PD32 power distribution
- Internal cable set

Amplifier Comparison

	LINUS14/14D	LINUS10	LINUS10-C	LINUS5-C
GENERAL				
Number of output channels	4	2	4	4
Signal-to-noise ratio *(22 Hz - 20 kHz, 4 Ω - anl. input)*	>108 dB (unweighted) >111 dB (A-weighted)	>107 dB (unweighted) >110 dB (A-weighted)	>112 dB (unweighted) >115 dB (A-weighted)	>112 dB (unweighted) >115 dB (A-weighted)
Signal-to-noise ratio *(22 Hz - 20 kHz, 4 Ω - dig. input)*	> 116 dB (unweighted) > 119 dB (A-weighted)	> 116 dB (unweighted) > 119 dB (A-weighted)	> 114 dB (unweighted) > 117 dB (A-weighted)	> 114 dB (unweighted) > 117 dB (A-weighted)
Frequency response *(8 Ω load, with CLEAR preset)*	20 Hz–20 kHz = (+0.0 dB / -1.0 dB)	20 Hz–20 kHz = (+0.0 dB / -1.0 dB)	20 Hz–20 kHz = (+0.5 dB / -1.0 dB)	20 Hz–20 kHz = (+0.5 dB / -1.0 dB)
THD+N	& IMD: 20 Hz–20 kHz = < 0.005% (4 Ω load @ 1/2 output power)	& SMPTE: 20 Hz–20 kHz = <0.01% (8 Ω load @ 1/2 output power)	20 Hz–17 kHz = < 0.1% (4 Ω load @ 120 W output power)	20 Hz–17 kHz = < 0.1% (4 Ω load @ 120 W output power)
Ethernet connection	2x 100 Mbps RJ45 Control 1x 100 Mbps RJ45 DanteTM	2x 100 Mbps RJ45 Control	1x 10 Mbps RJ45	1x 10 Mbps RJ45
AC MAINS				
AC mains input connector	Neutrik 32A powerCON®	Neutrik 32A powerCON®	Neutrik 32A powerCON®	Neutrik 32A powerCON®
Power consumption* *(power = W @ 4Ω to represent typical music signal)*	(1/4 power = 600 W @ 4Ω) Standby = 17.6 W Idle = 191 W 1/4 power = 3200 W	(1/8 power = 600 W @ 4Ω / 2Ω) Standby = 8 W Idle = 60 W 1/8 power = 1900 W @ 4 Ω 1/8 power = 2100 W @ 2 Ω	(1/4 power = 600 W @ 4Ω) Standby = 47 W Idle = 249 W 1/4 power = 3146 W	(1/4 power = 150 W @ 4Ω) Standby = 27 W Idle = 115 W 1/4 power = 851 W
INPUT				
Input sources	Analogue & AES/EBU & Dante™	Analogue & AES/EBU	Analogue & AES/EBU	Analogue & AES/EBU
Input connections	4x XLR3 Analogue IN 2x XLR5 Sensor IN 1x RJ45 LiNET IN (8x CH) 1x RJ45 LiNET LINK (8x CH) 1x RJ45 Dante IN (4x CH)	2x XLR3 Analogue IN 2x XLR3 Analogue LINK 1x RJ5 Sensor IN 1x RJ45 LiNET IN (8x CH) 1x RJ45 LiNET LINK (8x CH) 1x AUX RJ45 1x DAN RJ45 *(not used)*	4x XLR3 Analogue IN 1x RJ45 Analogue IN (4x CH) 1x RJ45 Analogue LINK (4x CH) 1x RJ45 Digital IN (4x CH) 1x RJ45 Digital Link (4x CH)	4x XLR3 Analogue IN 1x RJ45 Analogue IN (4x CH) 1x RJ45 Analogue LINK (4x CH) 1x RJ45 Digital IN (4x CH) 1x RJ45 Digital Link (4x CH)
OUTPUT				
RMS output power* *(20 Hz - 20 kHz, THD < 0.01%) (All channels driven except L10)*	1800 W @ 8 Ω 3500 W @ 4 Ω 4400 W @ 2.7 Ω 4500 W @ 2 Ω	1250 W @ 16 Ω 2300 W @ 8 Ω 4000 W @ 4 Ω 4700 W @ 2.7 Ω 5100 W @ 2 Ω *(both channels)*	1400 W @ 8 Ω 2500 W @ 4 Ω 3100 W @ 2.7 Ω 3700 W @ 2 Ω	400 W @ 8 Ω 700 W @ 4 Ω 900 W @ 2.7 Ω 1250 W @ 2 Ω
Peak output power* *(20 Hz - 20 kHz, 6 dB Crest Factor) (All channels driven except L10)*	3600 Wpk @ 8 Ω 7000 Wpk @ 4 Ω 6500 Wpk @ 2.7 Ω 5200 Wpk @ 2 Ω	1250 Wpk @ 8Ω 2500 Wpk @8Ω 4900 Wpk @ 4Ω 6000 Wpk @ 2.7 Ω 5300 Wpk @ 2Ω *(both channels)*	3200 Wpk @ 8 Ω 5200 Wpk @ 4 Ω 5800 Wpk @ 2.7 Ω 5000 Wpk @ 2 Ω	900 Wpk @ 8 Ω 1600 Wpk @ 4 Ω 1700 Wpk @ 2.7 Ω 1600 Wpk @ 2 Ω
Max. output voltage*	+/- 170 Vpk	+/- 200 Vpk	+/- 170 Vpk	+/- 85 Vpk
Max. output current*	+/- 52 Apk	+/- 72 Apk	+/- 52 Apk	+/- 38 Apk
Damping factor *(8Ω load, ≤1 kHz)*	> 2500	> 400	> 800	> 400
Min. output load	2 Ω nom 2.7 Ω - sensor control	2 Ω nom 2.7 Ω - sensor control	2 Ω nom	2 Ω nom
PHYSICAL				
Dimensions *(W x H x D)*	483.5 x 88 x 454 mm / 19 x 3.4 x 17.8"	483 x 88 x 452 mm / 19 x 3.5 x 17.2"	483.5 x 88 x 454 mm / 19 x 3.4 x 17.8"	483.5 x 88 x 454 mm / 19 x 3.4 x 17.8"
Shipping dimensions *(W x H x D)*	675 x 130 x 560 mm / 26.5 x 5.1 x 22"	615 x 130 x 540 mm / 21 x 5.1 x 21"	675 x 130 x 560 mm / 26.5 x 5.1 x 22"	675 x 130 x 560 mm / 26.5 x 5.1 x 22"
Net weight	14.75 kg / 32.5 lbs	13 kg / 28.7 lbs	14.3 kg / 31.5 lbs	10.7 kg / 23.6 lbs
Shipping weight	17.5 kg / 38.6 lbs	15.6 kg / 34.4 lbs	17.5 kg / 38.6 lbs	13.0 kg / 28.7 lbs

* Typical values - some variation may exist due to component tolerances. This table shows an overview of specifications. Full data can be found for each amplifier at www.codaaudio.com

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