DANA
Complete cinema hall sound amplification solution

DANA (short for Direct AES and Network Amplifiers) is a complete set of hardware, software, setup and tuning procedures for complete cinema sound system design, designed for straighforward setup, ease of use, and smooth maintenance.

The foundation of the DANA is proprietary amplifier and processing platform providing speaker crossover, equalization, alignment delays, and limiting with built-in DSP, and power amplification.

Furthermore, DANA amplifiers are equipped with digital AES/EBU inputs and necessary processing to receive 5.1 or 7.1 channels directly from the projector's media server, thus removing need for external cinema processor.

MAG Cinema speakers are easily connected to DANA compatible amplifiers using built-in presets. Dedicated Theater Control software suite provides user-friendly interface while setting up, tuning, and monitoring complete system.

DANA amplifiers are equipped with networking adapters to assist with integration into cinema TMS.
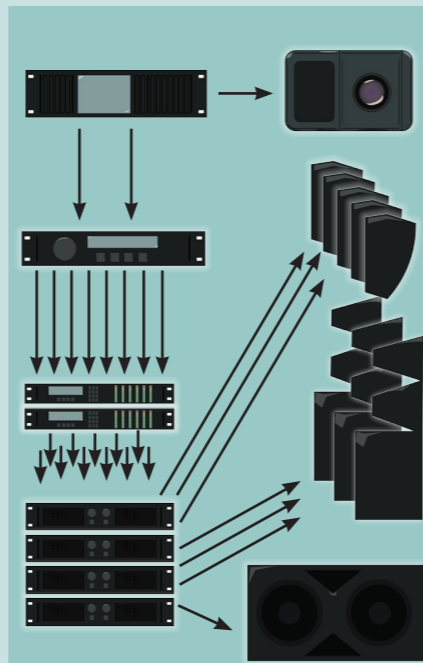
Complete with accessories, including IO Box for additional inputs/outputs, and Power Distributor for mains and signal routing, DANA is a state-of-the-art tool for the cinema engineer for building a modern easily automated cinema hall.

Conventional cinema system solution

Classical design for cinema sound system involves using dedicated cinema processor to receive audio input from media server and additional sources. Then, signal is sent to speaker processors, which split it into ways, providing equalization, alignment delays, and limiting for speaker protection. Next, signal travels to amplifiers, which are connected to speaker systems in the hall.

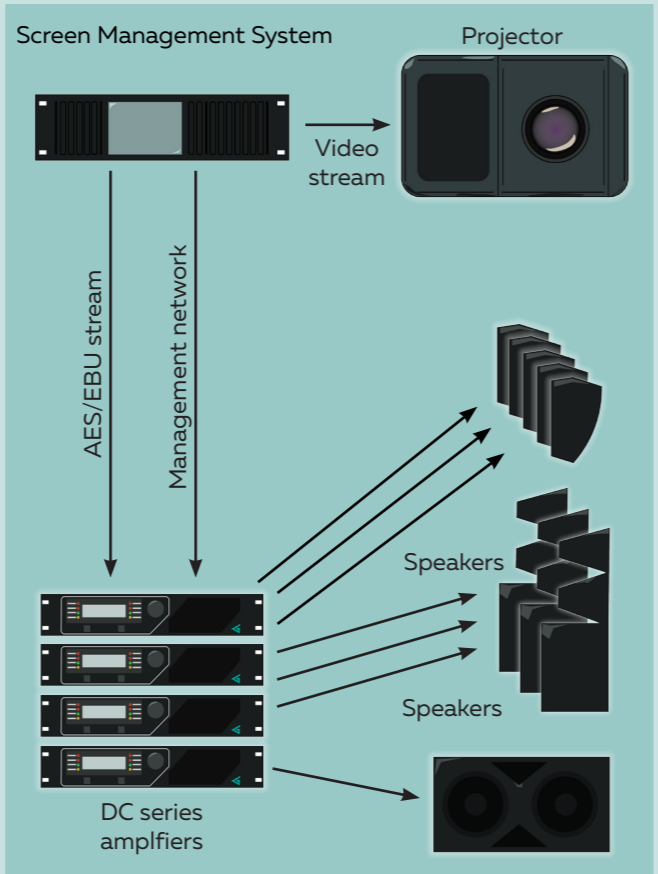This system design approach has many disadvantages and vulnerabilities, among them:

– Numerous D/A and A/D conversions, which deteriorate signal quality, creating muffed dirty sound experience with lots of distortion;

– Failure of cinema processor or speaker processor results in losing all or most of speaker channels, which disables the entire cinema hall;

– Great number of additional devices push up the initial, as well as operation costs of the cinema;

– Interface problems arise as numerous devices in signal chain require correct connections performed by experienced technicians.

DANA features

DANA involves innovative approach to complete cinema audio system design. DANA compatible amplifiers receive direct AES/EBU digital stream from media server. Each amplifier extracts only the required channels from the stream, and performs crossover, equalization, delay and limiting processing with an onboard DSP processor.

– Single device between cinema projector and speakers means only one D/A convertion, which brings the best possible listening experience;

– DANA architecture dictates using one of the amplifiers (the "Master" amplifier) as the control center for the entire rack. The "Master" amplifier has an Ethernet capability for connection with Theater Control suite, receiving control signals from media server, or external sources;

– Dedicated Theater Control suite provides for simple management over multiplex cinemas, as well as tools for monitoring amplifier and speaker states and TMS integration;

– Distributed architecture of signal routing means that in the unlikely event of single amplifier failure (even of the "Master" amplifier) the rest of the system keeps on running the show;

– Minimal number of devices used means lower budget for cinema hall;

– DANA amplifiers are supplied with ready presets for all MAG Cinema speakers, which provides for easy setup with minimum required connections;

– Additional DANA features include Power Distributor for control over mains connections, as well as IO BOX for additional input/output possibilities.

Screen Management System
Projector
Video stream
AES/EBU stream
Management network
Speakers
Speakers
DC series amplfiers

DANA
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DIGITAL CINEMA AMPLIFIER PLATFORM

DC series amplifiers is a versatile cinema amplification platform featuring modern DSP and innovative integration options.

With capability of direct media server via the AES/EBU stream, DC series amplifiers are only devices necessary to run 5.1 or 7.1 system.

DC series includes ready presets for MAG Cinema speakers, and are ready for interaction with Theater Control suite.

	DC 600A DC 600AE	DC 1200A DC 1200AE	DC 1208A DC 1208AE	DC 3000A DC 3000AE
Channels	2	2	2	2
Nominal power, single channel 4 Ohm	300 W	600 W	–	1500 W
Nominal power, single channel 8 Ohm	200 W	400 W	700 W	1000 W
Nominal power, bridged 8 Ohm	600 W	1200 W	1200 W	3000 W
Connectors	3-pin Phoenix input, 3-pin Phoenix link, C14 mains input, RS-485 Ethernet input/link, 2x RJ45 AES/EBU digital input			
Network	IP protocol adapter (DC 600AE, DC 1200AE, DC 1208AE, DC 3000AE)			
Dimensions (W×H×D)	480 × 90 × 255 mm, 2U			
Net weight	5,25 kg	5,25 kg	5,25 kg	5,9 kg

THEATER CONTROL SUITE

Theater Control is a dedicated software for complete cinema system setup, control and monitoring.

It provides easy interface for amplifier discovery, tuning, speaker preset operations, as well as control over multiplex intallations.

IO BOX

With numerous input and output options, IO BOX is a complementary device allowing for connecting additional signal sources, routing special purpose outputs, and connecting a microphone.

Microphone input	XLR female	AES/EBU	2x RJ-45
Analog bal. input	2x XLR female	RS-485 / Ethernet	2x RJ-45
Analog unbal. input	2x RCA	Dimensions	490x45x220 mm
Analog unbal. 7.1 input	8x RCA	Rack height	1U
Analog H/I output	2x RCA	Net weight	3 kg
Analog unbal. output	8x Phoenix	Gross weight	4 kg
Monitoring ouput	L+C+R RCA		

POWER DISTRIBUTOR

PDC-1P and PDC-3P power distributors are the mains routing and protection device. Accepting 3-phase power input, power distributors include power outputs for projector, amplifiers and additional devices, as well as circuit breakes and indication.

Mains input	CEE32 5P	LPS conn. cable	2m, 3x2.5mm^2 / 5x2.5mm^2
UPS input	C14 male	Dimensions	490x132x440mm
D16-1P circuit br.	7 pcs / 5 pcs	Rack height	3U
D25-3P/D25-1P circuit br.	1 pcs	Net weight	6 kg
Phase indicator 3P		Gross weight	7 kg
Front panel outputs	2x Schuko		
Rear panel outputs	8x Schuko		