

## Technical Specifications:

### DIMENSIONS

Mainframe: (Rack mounting, 4 unit high)  
177mm high  
482mm wide, including rack mounting flanges  
445mm wide, case only  
289mm deep, including rear connectors  
Card size: 220mm x 144.5mm Eurocard

### WEIGHT

10kg

### POWER REQUIREMENTS

110-240 Vac, 50-60Hz, max 80W

### INPUTS

Super-balanced stereo solar cell inputs for two projectors. Zero input impedance virtual ground current to voltage converter input stage for ultra low cell distortion and noise. Input sensitivity 0.8 $\mu$ A for 0dBu output.

2 x Stereo Non-Sync inputs.  
Unbalanced inputs: 10k ohms.  
Max. input sensitivity: 100mV for 0dBu output .

1 x microphone input.  
Electronically balanced input for 200 ohm microphone.  
Max. input sensitivity: 1mV for 0dBu output  
(@ max 60dB gain).

2 x 6-track digital line inputs.  
1 x 6-track magnetic/auxiliary/digital line input.  
Unbalanced inputs: 10k ohms.  
Max. input sensitivity: 300mV for 0dBu output.

1 x stereo A/V input.  
Balanced input sensitivity: 120mV for 0dBu output.

### OUTPUTS

Ten outputs comprising - Left, Center, Right, Left Surround, Right Surround, Sub Woofer, Left Aux, Right Aux, Left Monitor, Right Monitor.  
Electronically balanced: 50 ohms.  
Nominal output level: 770mV (0dBu).  
Maximum output level: 9 volts (+20dBu).



**Direct connection for digital players on back.**

### FREQUENCY RESPONSE

Optical Pre-amplifier: Adjustable sin x/x slit loss compensation equalization to facilitate flat response to 16kHz-20kHz with appropriate slit lens.  
Audio processing signal path:  
20Hz to 20kHz  $\pm$ 0.5dB  
Academy filter (in optical mono mode):  
Within  $\pm$ 0.5dB of Academy A-chain curve  
Optical Surround channel:  
20Hz to 8.5kHz, +0, -3dB  
1/3 octave auditorium equalizers:  
30 constant-Q bandpass filters 25Hz - 20kHz,  
7.5dB boost and cut. HF & LF contour controls.  
12dB boost and cut.  
Stereo octave surround equalizers:  
10 constant-Q bandpass filters 31.5Hz - 16kHz,  
7.5dB boost and cut. HF & LF contour controls.  
12dB boost and cut.  
Sub-bass excavator:  
Selectable crossover frequency - 50Hz to 63Hz,  
80Hz, 100Hz @ 12dB/octave (increasing to 18dB/  
octave above 200Hz). 8 constant-Q bandpass fil-  
ters, 12dB boost and cut.

### NOISE AND DISTORTION PERFORMANCE

Typical values measured with respect to Dolby level. Volume controls set to "70" (10dB below maximum), outputs trimmers set to maximum.  
Optical Inputs (except surround channel):  
Noise -82dB (unweighted)  
-88dB (A weighted)  
Headroom 16dB  
THD .05% @ 1kHz, 0dBu  
Dynamic Range 104dB

Optical Surround Channel:  
Noise -80dB (unweighted)  
-86dB (A weighted)  
Headroom 16dB  
THD .02% @ 1kHz, 0dBu  
Dynamic Range 102dB

Digital and Non-Sync Inputs:  
Noise -82dB (unweighted)  
-88dB (A weighted)  
Headroom 20dB  
THD .005% @ 1kHz, 0dBu  
Dynamic Range 108dB

# The World's Best Performing and Best Sounding Cinema Stereo Processor!



**The new THX approved PANASTEREO CSP1200 carries on the tradition of the CSP4200 series with superior sound quality, enviable features, and the highest craftsmanship and best design in the industry. Even the more expensive CP-500 or the JSX1000 cannot meet the specifications or features of the PANASTEREO. For the first time another company has exceeded the specs and sound performance of the so-called industry "standard." The CSP1200 is a unique digitally controlled Cinema Stereo Processor.**

**Please examine the technical specification and long list of special capabilities of the CSP1200 in this brochure. Compare to other brands and your purchasing decision should be clear . . . PANASTEREO is out . . performing!**



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The PANASTEREO CSP1200 THX digitally controlled cinema sound processor embodies the perfect compromise for outstanding performance and total flexibility. In a world where the word "Digital" has become synonymous with leading edge performance in many areas of technology, the world's leading recording studio mixing consoles use full digital control but still use analog circuitry for most audio signal processing. Digital audio technology simply cannot match the sonic performance of high quality analogue. Therefore the PANASTEREO CSP1200 uses the same high performance circuit technologies found in the world's most exclusive studio consoles, where digital technology is only used when it provides real performance benefits over analog circuits.

PANASTEREO has been at the forefront in the development of digital control systems and many other innovative features for cinema processors that have since been incorporated into competing products. For example, in 1988 Panastereo was the world's first processor to offer optional built-in two-way crossovers for the screen channels, a valuable feature now recognized by other manufacturers.

The CSP1200 offers features and performance levels that the other brands of cinema processors simply cannot deliver. It is still the only processor to offer balanced outputs to eliminate the age old problem of interference resulting in clicks and pops in the theatre sound system due to unbalanced connections to amplifiers. It also offers the most flexible external automation interface ever designed which includes an RS232 serial interface port for unprecedented ease of interconnection.

The CSP1200 is totally compatible with all digital and optical film formats, offers the highest quality and performance of any product on the market and, as a result of our rigorous and sophisticated quality control, sets new standards for reliability.

## MAIN FEATURES

- APPROVED BY LUCASFILM FOR USE IN THX THEATRES.
- ADVANCED DIGITAL CONTROL SYSTEM WITH LIQUID CRYSTAL DISPLAY COMBINES THE WORLD'S MOST ADVANCED SOUND CONTROL AND AUTOMATION FACILITIES WITH EXCEPTIONAL EASE OF USE.
- HIGH PERFORMANCE LOGDACS PROVIDE DIGITALLY CONTROLLED VOLUME FOR ULTRA-LOW NOISE AND DISTORTION AND HIGHLY ACCURATE TRACKING BETWEEN CHANNELS.
- UNBEATABLE SONIC PERFORMANCE WITH NOISE AND DISTORTION LEVELS THAT APPROACH THE THEORETICAL LIMITS OF CURRENT TECHNOLOGY.
- THREE INPUTS FOR SIX TRACK DIGITAL AND MAGNETIC SYSTEMS. DIRECT CONNECTION FOR DIGITAL PLAYERS MANUFACTURED BY DOLBY LABS INC, AND DTS (DIGITAL THEATRE SYSTEMS, INC.)
- AUTOMATIC CROSS-FADE AND DIP-FADE BETWEEN FILM AND NON-SYNC FORMATS WITH USER SELECTABLE FADE RATES.
- SUPER-BALANCED VIRTUAL GROUND, HIGH PERFORMANCE OPTICAL PRE-AMPLIFIERS
- EXCLUSIVE NON-SYNC OUTPUT ROUTING SYSTEM - EACH NON-SYNC SOURCE CAN BE SENT TO A DIFFERENT COMBINATION OF OUTPUT CHANNELS.
- ALL OUTPUTS FULLY BALANCED & FLOATING FOR TROUBLE FREE INTERCONNECTION.
- OPTIONAL BUILT-IN TWO-WAY LINKWITZ-RILEY TIME ALIGNED CROSSOVERS ON FRONT CHANNELS FOR BI-AMPLIFIED INSTALLATIONS.
- ONE YEAR WARRANTY

1. High performance, transformerless super-balanced virtual ground optical pre-amplifiers with individual gain and sin x/x slit loss compensation equalization for two projectors.
2. A-type noise reduction decoding that is 100% compatible with Dolby A noise reduction encoded films (Optical Stereo). Easy alignment using LED bar graph calibration meters on each card.
3. High performance SR noise reduction decoding for accurate restoration of dynamic range and frequency characteristics of Dolby Stereo SR encoded soundtracks.
4. A-Chain control card with stereo balanced A/V input for video tape, laser disc or can be used for a third stereo non-sync input. A/V input is routed through the matrix decoder for 4-channel replay and can also be optionally routed through the A-type or SR noise reduction for replay of professional NR encoded video tapes. A-Chain card also provides 5-channel signal presence indication for the optical inputs.
5. Optical stereo four channel matrix decoding that is possibly the most advanced system available, using our exclusive two-stage dominance sense circuit which minimises the tendency for the stereo image to collapse to mono - a well known problem with the matrix used in the other brands or processor. Logic steering is rear panel switchable for 2, 3 or 4-channel installations.
6. Logic Control Card provides full digital control of the processor. Automatic crossfade or dip between Film, Non-sync and Mute, and between each of the Non-Sync inputs, with user selectable auto-fade rates. A full automation interface is provided which can be programmed to interconnect with any cinema automation system. A standard RS232 serial interface allows the complete system to be controlled from advanced computer based automation systems.

7. B-Chain Control Card provides digital control of volume, for ultra low noise and distortion performance, essential for the optimum reproduction of digital soundtracks. Inputs include two stereo non-sync sources, one balanced microphone input and three 6-track digital inputs (or two digital inputs and one magnetic input). All audio switching is via high performance, controlled ramp, click-free MOSFET digital switches.
8. Sub-bass Excavator card provides selective low frequency enhancement from a separate sub-woofer output. Downward expander circuit reduces thumps and low frequency "noise". User selectable cross-over frequencies from 50Hz to 250Hz. Eight band third octave equalizer provides optimum adjustment of sub-woofer frequency response from 25Hz to 125Hz.
9. Third octave 30 band constant-Q equalizer cards with  $\pm 7.5$ dB adjustment for auditorium speaker equalization on screen channels. High accuracy bandpass filters from 25Hz to 20kHz. High and low frequency contour controls with 12dB boost and cut. Optional 3 metre shielded extender cable available for easy alignment.
10. Stereo Digital Surround Delay offers 10mS to 160mS delay adjustable in 10mS steps for optimum surround channel synchronization from the smallest to the largest auditoriums. Left and right delay times separately adjustable for optimization of surround delay in off-center auditoriums. Modified B-type noise reduction provides 100% compatibility with Dolby, Ultra\*Stereo, DTS Optical Stereo and Dolby Stereo SR encoded soundtracks.
11. Stereo Surround Equalizer with 10 band constant-Q octave filters provides 7.5dB boost and cut. High accuracy bandpass filters from 25Hz to 20kHz. High and low frequency contour controls with 12dB boost and cut.

12. Audio Output card provides ten fully floating balanced outputs each capable of driving a 600 ohm load to +20dBm. Emergency switch routes stand-by mono pre-amplifier outputs directly to all three front output channels. Auxiliary outputs are switchable on Audio control card to provide full stereo mix or full mono mix for hearing impaired amplifiers or lobby speakers, etc. Optional two-way Linkwitz-Riley crossovers, with three selectable crossover frequencies and adjustable time alignment, available on any of the three front channels for installations using bi-amplified speaker systems.
13. High power, fan cooled, UL recognized linear power supply with 80 Watt toroidal power transformer. Built-in totally independent 10 Watt separately fused backup power supply for bypass operation.
14. High quality construction. Precision engineered fully enclosed aluminum chassis. Professional grade, low noise, close tolerance, low drift components used throughout. Printed circuit boards are computer designed and UL Approved. All PCB's are double sided or multi-layer, hot air levelled with liquid imageable solder mask on both sides, and full component code. All PCB's incorporate full ground planes. Optional remote control panels provide total digital remote control of all processor functions including selection of inputs, format and volume adjustment, plus additional functions including sound automation and monitor facilities. Separate rotary digital volume controls for Film, Non-sync and monitor levels with remote digital indication of all volume settings. Two or more remote control panels can be used simultaneously with the main control panel - no switching between volume pots! Sophisticated sound automation facilities provide programming of up to 6 shows each with up to 15 steps. Programming includes format, volume levels and even internal functions if desired, for unprecedented presentation quality.



The PANASTEREO CSP1200 Digitally Controlled Cinema Stereo Processor uses LOGDACS for ultra-low noise and distortion and highly accurate tracking between channels.