

Bel Canto Design

Player White Paper

Overview:

Quality Audio and Video for All Sources

The PLayer (PL-1) is designed to provide a very high level of playback quality from all of today's digital audio and video sources. This sophisticated platform provides the foundation for a high-resolution Cinema and Sound system. The unequalled performance starts with the overall architecture, defined to provide the best of both the audio and video experience.

Audio Quality:

Isolated Internal DAC Reference Clocks

The PLayer uses separate proprietary low jitter oscillators for the SACD, DVD-A, CD and Video Dac's. These insure minimal clock jitter and optimum conversion for the audio and video signals. These oscillators become the master clocks for the DVD and transport portions of the system. The digital data is then processed and corrected for errors in timing, buffered, re-clocked and realigned before the Digital to Analog conversion process is performed. This insures that the analog audio and video signals are free of unwanted artifacts caused by random or data-related clock jitter.

Additionally, the audio and video circuits are completely separated from each other. This separation keeps video noise out of the audio circuits. The reproduced quality benefits from this separation, producing a dramatic sound stage, video depth and quality of sound that enhances the realistic reproduction of any digital source.

Six Differential High-End DAC's, Filter and Output Buffer Stages

The implementation of the PCM (24/44.1-192) and DSD (SACD) PCM1738 E Advanced Segment DACs and analog output stages are defined by bel canto's years of high-end audio experience. The PLayer uses our proprietary *True Differential* current to voltage conversion and minimal analog filtering as pioneered in the acclaimed DAC2. The PLayer goes even further with higher spec parts and multi-stage low noise regulated power supplies. All of this care insures the best performance from all digital sources from

CD through to the latest high resolution DVD-A and SACD material. Linear group delay digital filters and minimal analog filtering on the output stages insure that the phase and frequency response of the analog outputs are optimum for CD, SACD and DVD-A sources. This insures the best dynamic and spatial performance with these audio sources.

Specific attention has been paid to the selection of key analog parts, such as the current to voltage conversion resistors and output stage amplifier, filter capacitors and resistor tolerance. The True Differential current to voltage converter uses an ultra-high speed, low distortion differential amplifier stage which produces subjective audio quality that goes well beyond traditional 'cookbook' I/V circuits.

There are multiple power supplies, for optimum isolation between circuits. The audio section alone has six highly filtered and regulated supplies, each one independently powering specific circuits. In addition, integral RF suppression reduces interaction between stages of each independent circuit and between the audio and video sections. This further enhances the audio and video reproduction, allowing the finest detail to be seen on DVD and the smallest nuances to be heard in the audio. The digital audio outputs, RCA, BNC, AES/EBU are independently driven by ultra high-speed amplifiers and coupled by high-speed pulse transformers. The digital audio can output PCM, MPEG, DTS, and Dolby Digital.

Dolby Digital 5.1, DTS, MP3 Decoder and True SACD Processing

The internal Dolby Digital and DTS decoder with bass management for all formats, including DVD-A, and SACD processing using a Sony DSD processor, allows the PLayer to be the core of a complete Cinema and Sound experience. The remarkable quality from DVD-A and SACD can be experienced through an analog multi-channel preamp (Bel Canto PRe6) or through the analog pass-through of a preamp-processor (Bel Canto PRePro). The sonic quality of Dolby Digital, DTS and even MP3 sources decoded by the PLayer is quite stunning and will surprise many lovers of DVD music and movies, causing some to re-evaluate the potential of these compressed audio formats.

Video Quality to Match the Audio Performance

The Progressive Scan (480P) system, incorporates the best technology available today. Incorporated in the design are 108 MHz-12 bit video DAC's, Bel Canto designed discrete video filters, high speed video amplifiers and Faroudja Laboratories acclaimed DCDi* deinterlacing technology, assuring picture quality that is free of motion artifacts. Add to this, the innovative design of Bel Canto's low jitter video re-clocking circuits and video correction software and the result is stunning clarity, vivid colors and image depth.

The drive mechanism uses twin laser diodes and automatically selects the proper laser for the type of disc being played. This design enhances readout precision and keeps errors at an absolute minimum. In addition, special low jitter digital servo circuits control the motor speed, laser tracking and focus. Additional circuits use sophisticated parametric statistical analysis to correct errors caused by fingerprints, dust and warping. The

Graphical User Interface is simple to use and allows a completely custom setup for the user's needs.

An optional professional SDI (Serial Digital Interface) output allows the digital video stream to go directly to an SDI equipped projector or video-scaler for conversion to the native digital display format and conversion to RGB H/V, Component or DVI/HDCP digital formats.

480P Progressive Scan on 15pin "D sub" RGB connector

Formats:

Component Video with Sync on Green (H/V Sync. can be added to Sync. on green)

RGB with either Sync. on Green or H/V Sync.

Front Controls for, Motion (DCDi* by Faroudja), Film, Animation, RGB/Component, H/V Sync.

Other:

RS-232 control port (single direction)

Rear IR input connector (Pin Jack)