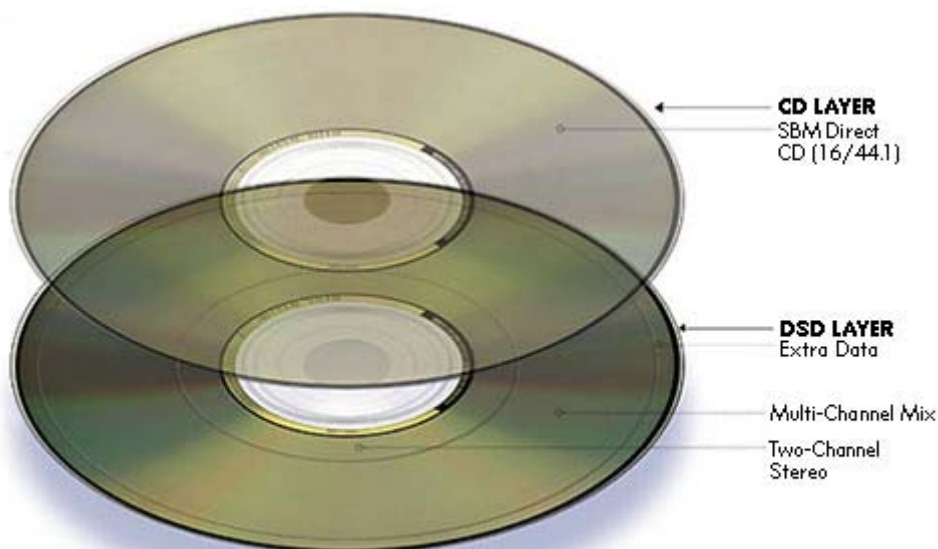


How A Hybrid Super Audio Compact Disc (SACD) Works

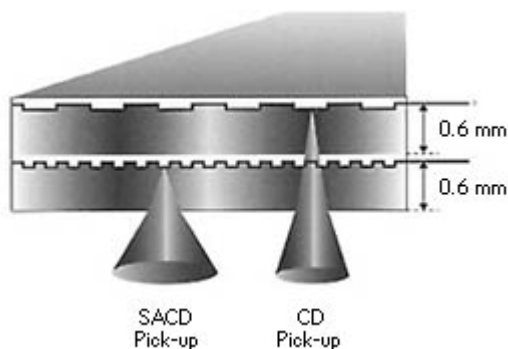


CD Layer

Even the conventional CD layer can sound better on a Hybrid SACD. Using a special process called "SBM Direct™," all Heads Up's original DSD recordings are directly down-converted to produce the CD master. The resulting quality is unprecedented in a 16-bit, 44.1kHz sampled Compact Disc.

DSD Layer

The DSD layer contains the two-channel stereo DSD recording. In the future, the same layer can also accommodate a multi-channel mix. There is even an Extra Data area reserved for graphics, text and video.



A hybrid SACD contains two complete layers of music information -- the DSD layer and the CD layer. And yet hybrid SACDs are single-sided just like conventional CDs. The DSD layer is made of a special material, which is designed to reflect or transmit laserlight depending on its wavelength. SACD players are equipped with optical pick-ups that emit a 650 nanometer wavelength laserlight that is reflected by the DSD layer. The optical pick-ups in all CD players, however, emit a 780 nanometer laserlight which is transparent to the DSD layer, so only the CD layer is

read.

Super Audio Compact Discs (SACD) The Next Generation Music Carrier

In the constantly changing and rapidly advancing world of recording technology, Heads Up continually evaluates the latest developments. Ever since producing its first digital recordings in 1989, Heads Up's objective has been to provide the highest quality music reproduction possible. Now with the development of the Super Audio Compact Disc™ (SACD), which utilizes the extraordinary Direct Stream Digital™ (DSD) recording technology, the foundation exists to launch a new era of high-resolution stereo and multi-channel surround recordings.



The new Super Audio Compact Disc format, created by Sony and Philips, provides unprecedented sound quality in stereo and discrete multi-channel surround. To achieve its sonic performance, SACD employs DSD, a radically new digital encoding technology. DSD samples the musical signal at a phenomenal 2.8 million times a second, 64 times the amount of a traditional CD. The result is an extremely smooth digital waveform with unparalleled frequency response and dynamic range. Heads Up is recording all of its projects using the DSD process.

The potential benefits of SACD do not stop with its performance. The SACD format supports several disc configurations, including a Hybrid SACD designed to be completely compatible with the millions of CD players in the market today. Hybrid SACDs actually contain two complete layers of music information. One layer contains the high density DSD recording that can be played in the new generation of stereo and surround SACD players. The other layer is a conventional CD layer, which can play on any CD player.