
PRODUCT INFORMATION

Vol. 72

Playback-Only MD Chip Set Developed

The industry's lowest power dissipation achieved.

LC89641, LA9606W

Overview

A bright future is forecast for the mini-disc (MD) player in the portable audio market. The EIAJ expects that, with the MD player market outside Japan now in motion, there will be a worldwide demand for 8 million units, of which portable MD players will hold 45% of the total. The MD player is expected to become the most important product in the portable audio market.

Initially, interest in the MD format focussed on its ability to record. However, the playback-only unit as a portable device has become the mainstream, and there is now fierce competition between manufacturers striving for further miniaturization and even longer battery life in their products.

Given this background, Sanyo develops and supplies chip sets that are specialized for playback-only portable MDs and that feature low power dissipation. Now, Sanyo has developed a chip set consisting of the LC89641 and LA9606W that features even lower power dissipation. Power dissipation has been reduced by over 60% as compared to earlier Sanyo products. Also, the provision of macro commands eases the development of microcontroller software, and the on-chip digital servo and automatic adjustment functions allow this chip set to flexibly support a wide range of pickups and discs.

Features

- A 4MHz internal operating clock frequency was adopted, allowing this chip set to achieve the industry's lowest power dissipation of 46 mW when the chip set is operating.
- The chip set provides play, scan, and other macro commands, making microcontroller software development extremely simple.
- Digital servo and automatic adjustment functions are included to allow this chip set to flexibly support a wide range of pickups and discs.

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Specifications

LC89641

- Power dissipation: 30 mW (Supply voltage - I/O: 2.4 V, Internal: 2.0 V)
- Master clock: 384fs (16.9344 MHz)
 - Internal operations are at 4.23 MHz
- EFM/ACIRC decoder circuit
 - Powerful error correction (C1: dual errors, C2: quad errors)
- Digital servo and automatic adjustment functions
- SPP (anti-vibration control) circuit
 - Supports 4 or 16 Mbits external DRAMs
- Extensive set of intelligent commands for simple playback
- ATRAC decoder circuit
 - Fully floating point high-precision calculations
 - Low power design using a multiplier circuit
- Built-in 1-bit D/A converter
 - Digital deemphasis function
 - Digital bass boost function
 - Digital attenuation function
- Supply voltage - I/O: 2.2 to 3.6 V, Internal: 1.9 to 3.6 V
- Package: 100-pin flat package (lead pitch: 0.5 mm)

LA9606W

- Power dissipation: 16 mW (Supply voltage: 2.4 V)
- Servo signal-processing circuit
 - I-V conversion amplifier
 - Focus error amplifier
 - Tracking error amplifier
 - VCA
- RF signal-processing circuit
 - Pit/group switching RF amplifier
 - RF equalizer amplifier
- APC circuit
- Supports sleep mode
- Pre-pit circuit (pit/group discrimination circuit)
- Supply voltage: 2.2 to 5.5 V
- Package: 48-pin flat package (lead pitch: 0.5 mm)

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Sample Availability

Samples of the LC89641 and LA9606W are available in October 1998; production quantities will be anticipated in November 1998.

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