



PCI Multi-channel I/O Controller

Product Information

Features

- PCI 2.1 I/F with bus mastering and burst modes
- 24-bit resolution audio format support
- Sampling rates up to 96kHz
- 8x2 I/O on AC-link or I²S, up to 4x2 converters
- Simultaneous I²S for SPDIF I/O up to 96kHz
- 20 channels, 36-bit wide digital mixer
- Monitor and master copy functions
- Peak meters on all 20 professional multi-track streams
- Concurrent 16 streams DirectSound™ accelerator
- Sample Rate Converter for DirectSound applications
- Two MPU-401 MIDI UART ports
- ACPI and PCI PMI support
- I²C subset I/F for configuration/ID E²PROM and peripherals control
- HW SoundBlaster® Pro legacy
- FM synthesis for DOS® legacy
- 64-voices SW Wavetable General MIDI Synthesizer for Windows® 95
- DirectInput™ compatible Joystick port
- 8-bit GPIO port
- Windows95/98, NT4.0 drivers
- 24.576, 16.9344 or 22.5792 MHz crystal operation
- 3.3V operating supply (5V tolerant I/O)
- 128-pin PQFP (14mmX20mm) package

Applications

- PC-based digital multi-track audio
- Discrete multi-channel audio
- High-end PCI audio
- Prosumer audio
- General purpose multi-channel I/O
- Computer telephony
- PC-based data acquisition
- PC-based waveform generation
- PC-based instrumentation
- PC-based control and automation

Ordering Information

- ICE1712 - 128PQFP
- www.icensemble.com
- sales@icensemble.com
- 1(408)9861200 x110

Description

The Envy24™ is a versatile PCI multi-channel I/O controller. It allows up to 12x2 simultaneous input and output channels with the data source or destination being either analog or digital. Some of the typical applications for this part are computer based multi-track audio, multi-channel audio, PC-based data acquisition, waveform generation and computer telephony integration. The Envy24 can be combined with professional grade I²S converters, S/PDIF transmitters/receivers or AC-link codecs, such as the ICE1232™. The controller integrates a very high resolution digital mixer allowing up to 20 channels of mixing. This is aimed specifically for monitoring final outputs, making master copies and for budget conscious studios that may lack an individual out-board mixer.

The Envy24 supplies a master I²C interface providing connection to an E²PROM to store and retrieve PCI Subsystem and Subsystem vendor IDs, specific board configurations and custom features identification. This interface is available for controlling other devices as well.

For target markets where legacy audio is still important, the SoundBlaster Pro compatible hardware ensures hardware compatibility under DOS for DDMA (Distributed DMA) and non-DDMA systems. The device also includes a Microsoft Win9x architecture based DirectSound hardware accelerator that interfaces to AC'97 via AC-link. The separate path allows concurrent operation with the 24-bit professional multi-track audio section

The Envy24 is a "Digital-Ready" audio device allowing acceleration in cooperation with the host and redirecting audio streams to other endpoints.

The Envy24 integrates two independent MPU-401 MIDI UARTs. This features allows hooking up multiple external MIDI devices and dedicating the two paths for different purposes.

Additionally, a conventional standard Joystick port and timer is integrated. Only R and C components are necessary to complete the circuit. Also an 8-bit GPIO brings flexibility for multi-purpose use.

The Envy24 is a power miser device due to its aggressive power management scheme and hard-wired design architecture. The device is ACPI compliant making it suitable for platforms designed for "OnNow".

For more detail on the part, please refer to the system block diagram in the following page.

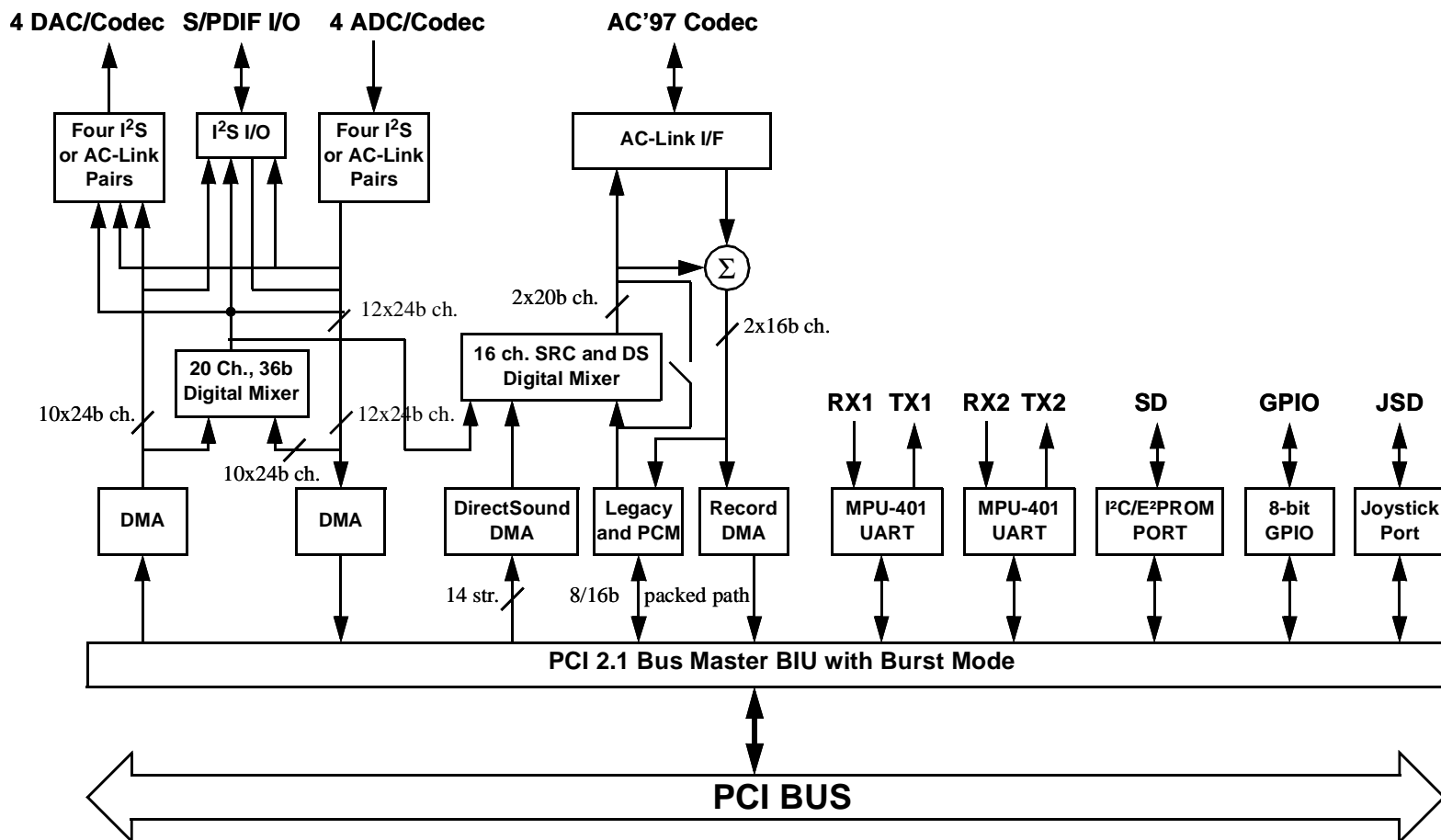


Figure 1. Functional Block Diagram

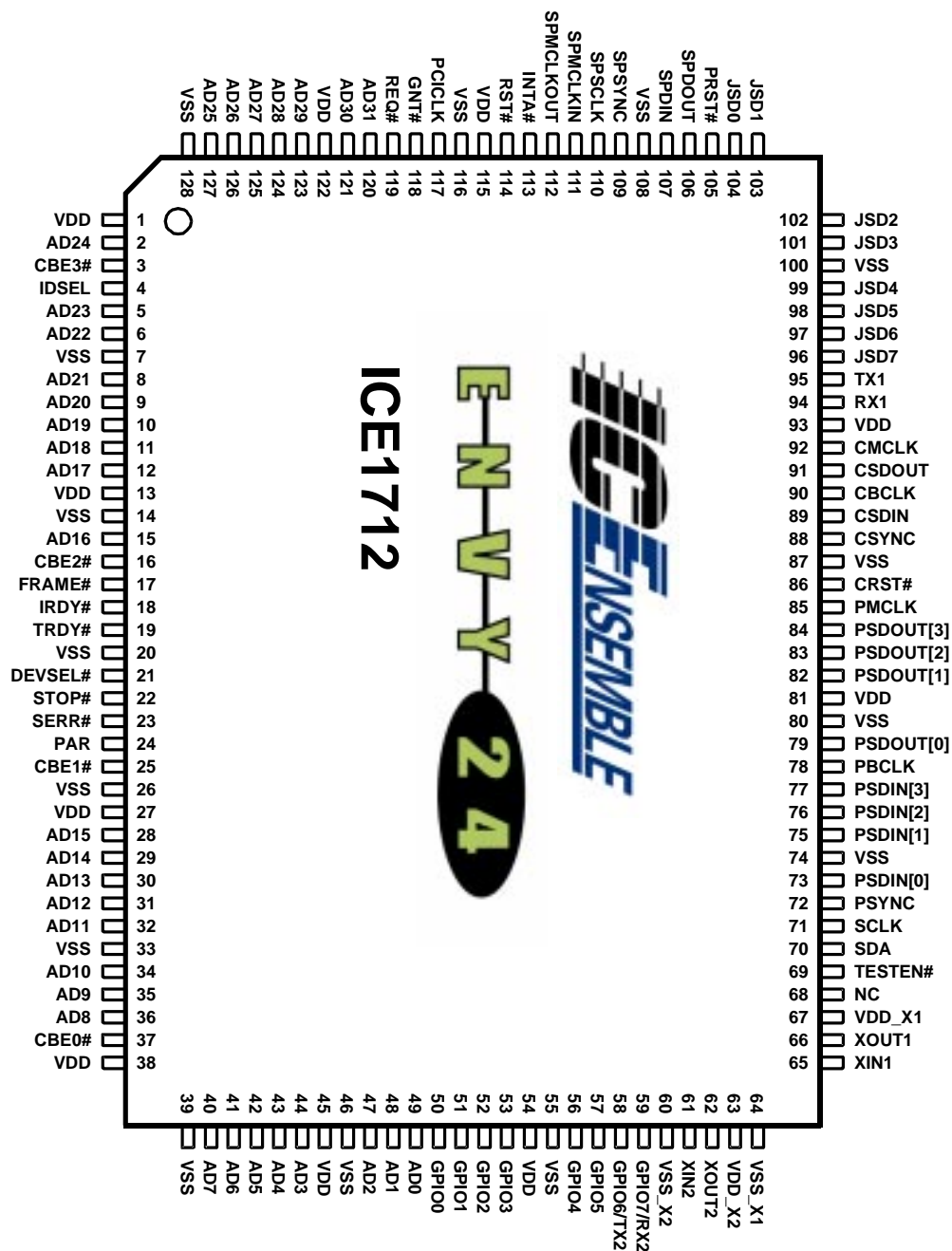


Figure 2. 128-pin QFP

© 1998-1999 IC Ensemble, Inc. All Rights Reserved.

IC Ensemble, the ICE logo, Envy24 are trademark of IC Ensemble, Inc. Other trademarks referenced in this document are owned by their respective companies.