

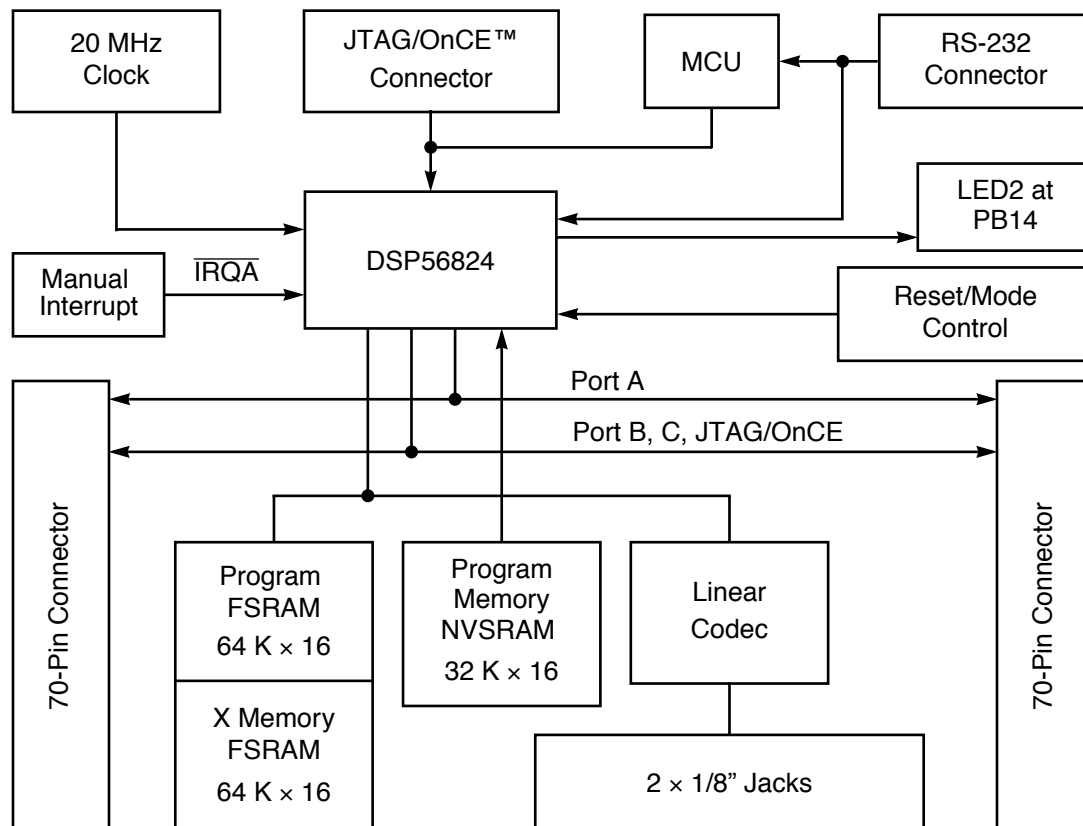
DSP56824

Advance Information

DSP56824 Applications Development System

The DSP56824 Applications Development System (ADS) is designed as a full-featured platform for developing realtime software and hardware products to support a new generation of applications in digital messaging, two-way radio, speech processing, and consumer electronics. The power of the 16-bit DSP56824 Digital Signal Processor (DSP) combined with the on-board 64 K \times 16-bit external Non-Volatile Static RAM (NVS RAM) and Motorola's MC145483 13-bit linear voice audio codec makes the DSP56824ADS ideal for developing and implementing many messaging and audio processing algorithms, as well as for learning the architecture and instruction set of the DSP56824 processor.

This system is available for IBM-PC-compatible and Sun hosts, with a host interface card for ISA or Sun S-bus interfaces, allowing the user to download software to on-chip or on-board RAM, then run and debug it. With the on-board expansion connectors, the user can connect hardware such as external memories and other devices, such as A/D or D/A converters, keypads, displays, and so forth. **Figure 1** shows the functional block diagram for the DSP56824ADS.



AA1552

Figure 1 DSP56824ADS Block Diagram

This document contains information on a new product. Specifications and information herein are subject to change without notice.

DSP56824 FEATURES

Digital Signal Processing Core

- Efficient 16-bit DSP56800 family DSP engine
- As many as 35 Million Instructions Per Second (MIPS) at 70 MHz
- Instruction set supports both DSP and controller functions
- Software subroutine and interrupt stack with unlimited depth

Memory

- Harvard architecture with the following on-chip memory:
 - 32 K × 16 Program ROM
 - 128 × 16 Program RAM
 - 3.5 K × 16 X RAM usable for both data and programs
 - 2 K × 16 X data ROM
- Off-chip memory expandable to 64 K × 16 X data and 64 K × 16 program memory
- External memory expansion port programmable for 1 to 15 wait states

Peripheral Circuits

- External Memory Interface (Port A)
- Sixteen dedicated GPIO pins
- Serial Peripheral Interface (SPI) support: Two configurable four-pin ports (SPI0 and SPI1)
- Synchronous Serial Interface (SSI) support: One 6-pin port (or six additional GPIO lines)
- Computer-Operating Properly (COP), Realtime Interrupt (RTI), and programmable timers
- Two external interrupt/mode control pins and one external reset pin for hardware reset
- Software-programmable, Phase Lock Loop-based (PLL-based) frequency synthesizer

Energy Efficient Design

- A single 2.7–3.6 V power supply with 5 V-compatible I/O interface
- Fully static, HCMOS design for 70 MHz to dc operating frequencies

DSP56824ADS FEATURES

The DSP56824ADS kit contains the following components:

- DSP56824 Application Development Module (ADM) board
 - DSP56824 processor
 - All DSP signal lines accessible through top and bottom board connectors
 - On-board codec with stereo input/output jacks
 - User-replaceable oscillator clock chip for custom clocking requirements
- Command Converter card
- ISA Bus or Sun S-Bus Host Interface card
- Power supply and data connecting cables
- Motorola Development Tools software including the CLAS package
 - Graphical User Interface (GUI) simplifies code development
 - Compiler, Linker, and Assembler provide optimized code
- Supporting chip, software, and ADS documentation on CD-ROM

TARGET APPLICATIONS

The DSP56824ADS is intended as a full-featured platform for developing realtime software and hardware products to support a new generation of applications in digital messaging, two-way radio, speech processing, and consumer electronics.

SYSTEM REQUIREMENTS

Users of the DSP56824ADS need to provide the following:

- For use with an IBM-PC-compatible host system
 - IBM-PC-compatible computer (486 class or higher) running Windows 3.1 and DOS 6.0 (or higher), or Windows 95, open ISA slot, at least 8 Mbytes RAM, 3-1/2 inch diskette drive, CD-ROM drive, hard drive with at least 4 Mbytes of free disk space, and a mouse
- For use with a Sun S-Bus host system
 - HP 7xx workstation running HP-UX version 9.x with at least 32 Mbytes RAM, CD-ROM drive, and a hard drive with at least 40 Mbytes of free disk space
 - Audio source and a cable with 1/8-inch stereo plugs (needed for demonstration software only)

ORDERING INFORMATION


Table 1 provides the ordering information for the DSP56824ADS.

Table 1 DSP56824ADS Ordering Information

Description	Order Number
DSP56824ADS with ISA Host Interface adapter card for use with IBM-PC-compatible systems	DSP56824ADSA
DSP56824ADS with ISA Host Interface adapter card for use with IBM-PC-compatible systems. Features socketed DSP56824.	DSP56824ADSA SOCKET
DSP56824ADS with Sun S-Bus Host Interface adapter card for use with Sun S-Bus systems	DSP56824ADSF

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