

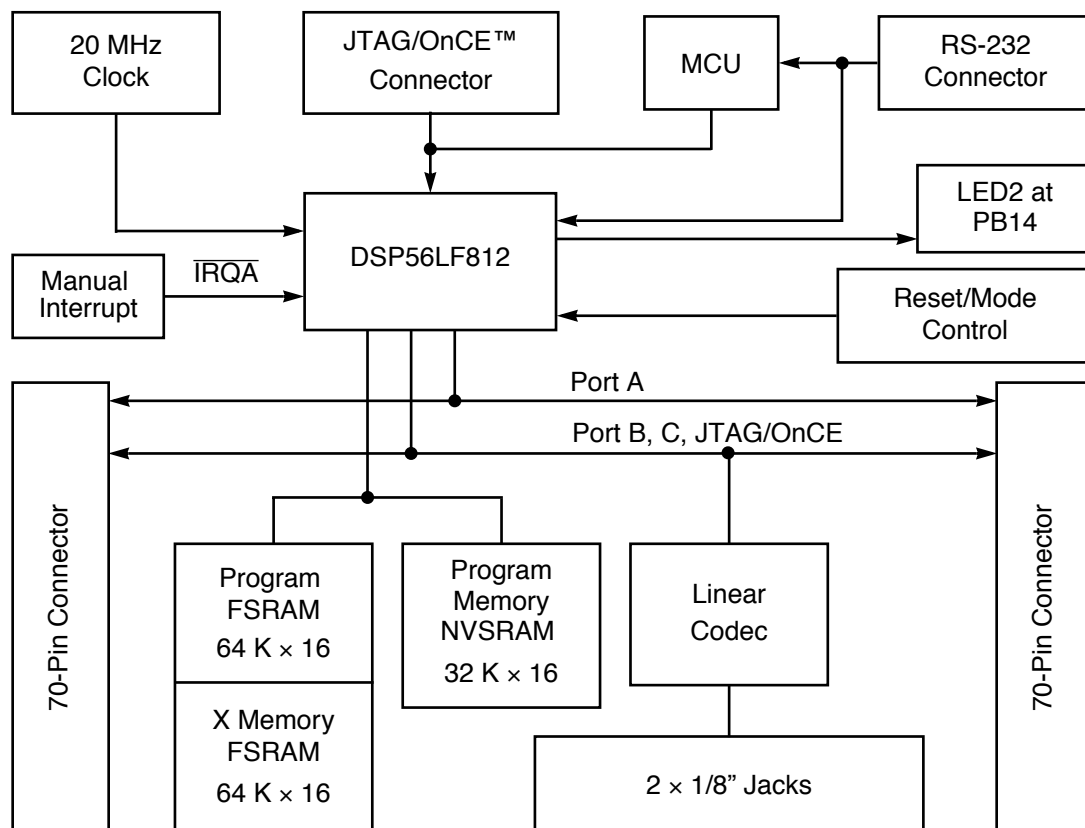
DSP56LF812

Advance Information

DSP56LF812 Applications Development System

The DSP56LF812 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 DSP56LF812 Digital Signal Processor (DSP) combined with the on-board 64 K × 16-bit external Non-Volatile Static RAM (NVSRAM) and Motorola's MC145483 13-bit linear voice audio codec makes the DSP56LF812ADS ideal for developing and implementing many messaging and audio processing algorithms, as well as for learning the architecture and instruction set of the DSP56LF812 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 DSP56LF812ADS.



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Figure 1 DSP56LF812ADS Block Diagram

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

DSP56LF812 FEATURES

Digital Signal Processing Core

- Efficient 16-bit DSP56800 family DSP engine
- As many as 20 Million Instructions Per Second (MIPS) at 40 MHz
- Instruction set supports both DSP and controller functions
- Software subroutine and interrupt stack with unlimited depth

Memory

- On-chip Harvard architecture
- 24 K × 16 program Flash memory
- 2 K × 16 data Flash memory
- 2 K × 16 X data RAM

Peripheral Circuits

- External Memory Interface (Port A)
- Sixteen dedicated General Purpose Input/Output (GPIO) pins
- Serial Peripheral Interface (SPI) support: Two configurable 4-pin ports (SPI0 and SPI1)
- Synchronous Serial Interface (SSI) support: One 6-pin port (or six additional GPIO lines)
- Three programmable 16-bit timers
- Computer-Operating Properly (COP) and Realtime Interrupt (RTI) 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

- Fully static, HCMOS design for 40 MHz to dc operating frequencies
- A single 2.7–3.6V power supply with 5 V-compatible I/O interface
- Power-saving Wait and multiple Stop modes available

DSP56LF812ADS FEATURES

The DSP56LF812ADS kit contains the following components:

- DSP56LF812 Application Development Module (ADM) board
 - DSP56LF812 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

The DSP56LF812ADS is also available with a socketed DSP56LF812 processor (extra cost option).

TARGET APPLICATIONS

The DSP56LF812ADS 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 DSP56LF812ADS 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 DSP56LF812ADS.

Table 1 DSP56LF812ADS Ordering Information

Description	Order Number
DSP56LF812ADS with ISA Host Interface adapter card for use with IBM-PC-compatible systems	DSP56LF812ADSA
DSP56LF812ADS with Sun S-Bus Host Interface adapter card for use with Sun S-Bus systems	DSP56LF812ADSF

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