MC143450EVK

*Product Preview*
External Active Modem Evaluation Kit

The External Active Modem Evaluation Kit (EVK) was developed for the evaluation of Motorola's DSP56303 24–Bit Digital Signal Processor (DSP) based data/fax/voice modem design. The EVK contains an external modem which provides a means of testing and evaluating the V.34 1996 Data/Fax/Voice Modem supporting the Hayes™ AT Command Set, Data Compression/Error Correction (V.42bis/V.42), Class 1 Fax, Telephone Answering Machine, and Full–Duplex Speakerphone. The host computer is comprised of a serial Universal Asynchronous Receiver Transmitter (UART) for an IBM® PC, UNIX® workstation, or Macintosh® computer. The application software communicates with the external modem through the host serial port. The modem EVK provides interfaces for an analog mezzanine card and two DIMM sockets. The analog mezzanine card supports the data (telephony) and voice (acoustic) codecs (COder/DECoder) and a Data Access Arrangement (DAA) interface to the Public Switched Telephone Network (PSTN). The two DIMM sockets support; one, a DIMM board for DSP SRAM and Flash memory, and two, a DIMM board for logic analyzer and eye pattern oscilloscope interfaces. The analog mezzanine card provides the flexibility of customizing and validating a DAA design using the modem EVK.

The application software communicates through the host computer serial port with the DSP56303 to perform all the control and data pump operations for data/fax/voice. All modem firmware is executed from the DSP's volatile memory system so that new features can be easily upgraded. The DSP makes use of its built–in peripherals to interface directly with the serial port of the host computer and to interface with the telephony and acoustic codecs which provide Analog–to–Digital (A/D) and Digital–to–Analog (D/A) conversions between the modem and the analog interfaces. The MC143416 Dual 16–Bit Linear Codec–Filter supports the analog interfaces to the PSTN and the speaker/microphone.

BLOCK DIAGRAM
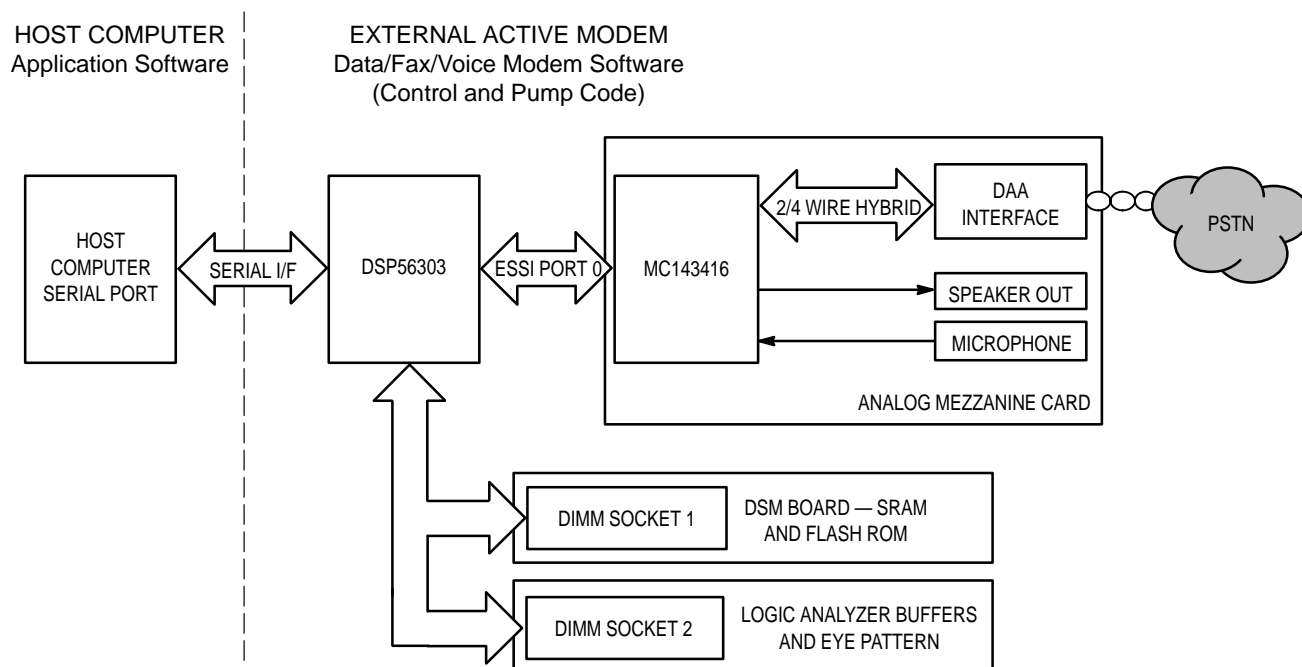
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Features

- Programmable DSP and Memory System Consisting of SRAM and Flash ROM
- DAA Mezzanine Card for Customizing the DAA Line Interface Design
- Additional Memory and Logic Analyzer Interface Supporting DSP Code Development
- Turn–Key Internationalization Support
- ITU–T V.80 (Video Ready), Enhanced Caller ID, Plug and Play Support, and Distinctive Ring
- Data/Fax/Voice Features per Table Below

Modem Type	Modulation/Function	Control Code	AT Command Set
Data Modem	K56flex™ Compatible Software Upgradable to ITU–T V.PCM ITU–T V.34 1996 — 33.6 kbps to 2.4 kbps ITU–T V.32bis — 14.4kbps to 4.8kbps ITU–T V.32 — 9.6 kbps to 4.8 kbps ITU–T V.22bis — 2.4 kbps ITU–T V.23 — 1.2 kbps ITU–T V.22 — 1.2 kbps ITU–T V.21 — 300 bps Bell 212A — 1.2 kbps Bell 103 — 300 bps Automatic Mode Selection Automatic Rate Adaptation Digital Near–End/Far–End Echo Cancellation ITU–T V.8 Signalling ITU–T V.8bis Signalling ITU–T V.54 Test Loopback Support	ITU–T V.42/MNP®2–4 Error Correction ITU–T V.42bis/MNP5 Data Compression Autobaud DTE Rate 230.4 kbps Maximum	Hayes AT Commands
Fax Modem	ITU–T V.17 — 14.4 kbps to 9.6 kbps ITU–T V.29 — 9.6 kbps to 4.8 kbps ITU–T V.27ter — 4.8 kbps and 2.4 kbps ITU–T V.21 Channel 2 — 300 bps	TIA/EIA 578 Class 1	AT+ Commands per TIA/EIA 578 Class 1
Voice Modem	Full–Duplex Speakerphone with Automatic Gain Control and Room Monitor Answering Machine	Full–Duplex Speakerphone Controller Telephone Answering Machine Controller	AT# Voice Support

Documentation

   More detailed documentation describing components and software is available from a local Motorola distributor or semiconductor sales office, or through a Motorola Literature Distribution Center.

Document Title	Order Number
MC143450EVK External Active Modem Evaluation Kit Manual	MC143450EVK/D*
MC143450RDK External Active Modem Reference Design Kit Product Preview	MC143450RDKPP/D
MS143450SK External Active Modem Chip Set and Software Product Preview	MS143450SKPP/D
DSP56300 24–Bit Digital Signal Processor Family Manual	DSP56300FM/AD
DSP56303 24–Bit Digital Signal Processor User's Manual	DSP56303UM/AD
DSP56303 24–Bit Digital Signal Processor Technical Data	DSP56303/D
MC143416 Dual 16–Bit Linear Codec–Filter	MC143416/D

*Available December 1997

Note: For the most current information regarding this product, contact Motorola on the World Wide Web at http://www.motorola.com/modem–chipsets

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                                  – http://sps.motorola.com/mfax/
HOME PAGE: http://motorola.com/sps/

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