

## MC143450RDK

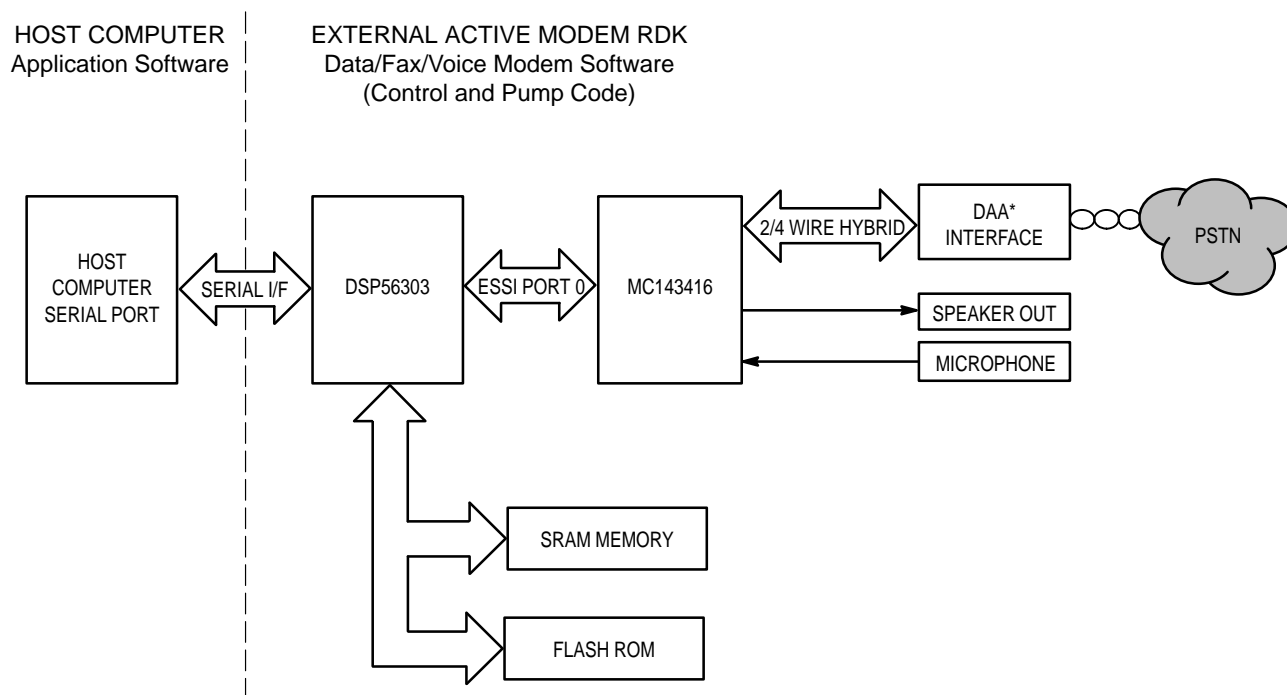
### Product Preview

## External Active Modem Reference Design Kit

The External Active Modem Reference Design Kit (RDK) was developed to facilitate the creation of unique Public Switched Telephone Network (PSTN) communication products using Motorola's DSP56303 24-Bit Digital Signal Processor (DSP). The critical component of this kit is an external modem which provides a means of testing and evaluating Motorola's V.34 1996 Data/Fax/Voice Modem supporting the Hayes™ AT Command Set, Data Compression/Error Compression (V.42bis/V.42), Class 1 Fax, Telephone Answering Machine, and Full-Duplex Speakerphone.

The application software uses the host computer's serial port to communicate 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 data (telephony) and voice (acoustic) codecs (COder/DECOder) 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 offers a single-chip implementation of the data conversion interface required to design high-speed modems, and features a telephony and acoustic codec, clock generation, conditioning, and sample rate conversion of signals to and from the data interface.

### BLOCK DIAGRAM



\*DAA = Data Access Arrangement

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## Features

- Complete Active Modem Turn-Key Design
- Programmable DSP and Memory System Consisting of SRAM and Flash ROM for Software Upgradability
- 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 — 14.4 kbps to 4.8 kbps 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 Adaption 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*
MC143450EVK External Active Modem Evaluation Kit Product Preview	MC143450EVKPP/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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