MC143456RDK

Product Preview

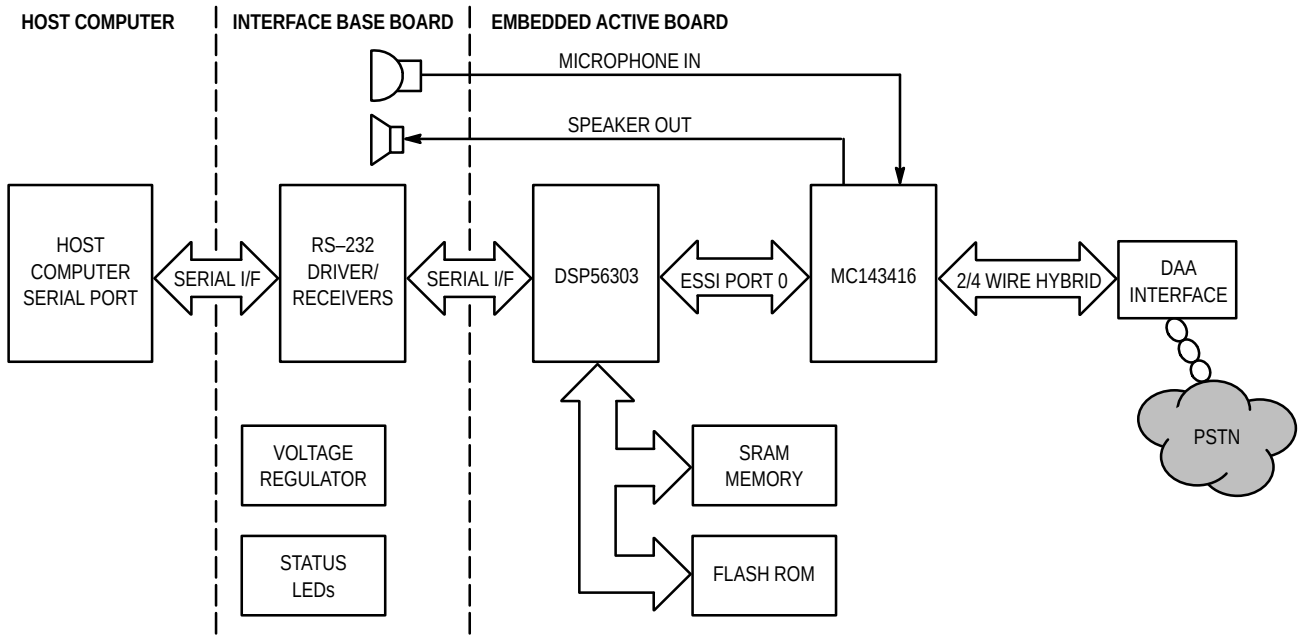
Embedded Active Modem Reference Design Kit

The MC143456RDK Embedded Active Modem Reference Design Kit (RDK) was developed to demonstrate the MS143450SK External Active Modem Chip Set and Software system performance. This kit implements a V.34/56 kpbs modem using Motorola's DSP56303 24–Bit Digital Signal Processor (DSP) for both control and data pump software and Motorola's MC143416 Dual 16–Bit Linear Codec–Filter* for the voice and data interfaces.

MC143456RDK functionality is divided among two boards: one simulates the actual circuitry required for an embedded modem application and the other provides a convenient interface for evaluation. The Embedded Active Board (EAB) has the DSP56303, SRAM, Flash, MC143416, and Data Access Arrangement (DAA) circuitry. Complete modem evaluation is possible when the EAB is connected to the Interface Base Board (IBB), which provides the RS–232 interface, power supply generation, speaker, and line out/microphone in audio jacks.

The application software uses the host computer's serial port to communicate with the DSP56303 to perform all 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 MC143416, which provides 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



* Codec = COder/DECoder

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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 (PnP) Support, and Distinctive Ring
- Data/Fax/Voice Features per the Following Table
- Convenient Evaluation of Modem Performance Using the IBB

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 Internationalized Modem Control Software	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
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

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

How to reach us:

USA / EUROPE / Locations Not Listed: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado, 80217. 1-303-675-2140 or 1-800-441-2447

Mfax™ : RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
– http://sps.motorola.com/mfax/

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

JAPAN: Nippon Motorola Ltd.; SPD, Strategic Planning Office; 4-32-1, Nishi-Gotanda; Shinagawa-ku, Tokyo 141, Japan. 81-3-5487-8488

ASIA / PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

CUSTOMER FOCUS CENTER: 1-800-521-6274

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