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SEMICONDUCTOR TECHNICAL DATA

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MS143455SK

Product Preview

PCI Passive Modem Chip Set and Software

The MS143455SK is a passive modem, developed using Motorola's DSP56303 24–Bit Digital Signal Processor (DSP). It is implemented with the control code running on the host PC and the data pump code running on the DSP. The main features of the MS143455SK are: a V.34/56 kbps PCM data modem using V.42/MNP®4 error correction and a V.42bis/MNP5 data compression, a V.17 fax modem using a TIA/EIA 578 Class I fax, and a voice modem supporting a full–duplex speakerphone with telephone answering machine. The MS143455SK is a complete modem chip set with a Windows™ 95 and Windows NT™ device driver and a PCI interface.

The modem system is shown in the block diagram. The application software uses the PCI interface to send and receive data/control information to and from the MS143455SK. The control code includes error correction, data compression, and Hayes™ AT command sets implemented on the host computer. The MS143455SK utilizes a single DSP56303 processor performing data pump operations.

The MC143455RDK is the reference design kit for the MS143455SK chip set, and is designed with minimum cost and rapid implementation in mind. It allows the developer to evaluate modem and voice feature performance and to perform a detailed system cost analysis. An evaluation software license is included along with schematics, complete Bill of Materials (BOM), layout recommendations, and Gerber files for PCB fabrication. The MC143455RDK is also designed to pass all electrical and safety certifications required by national certification bodies worldwide. This includes regulations such as FCC Part 68 and FCC Part 15 in the United States.

Integrated Circuits Included

- MC143416 Dual 16–Bit Linear Codec–Filter (COder/DECoder)
- DSP56303 24–Bit Digital Signal Processor
- PCI Bus Interface Controller ASIC

Software Included

- PCI Passive Modem Controller and Data Pump Software

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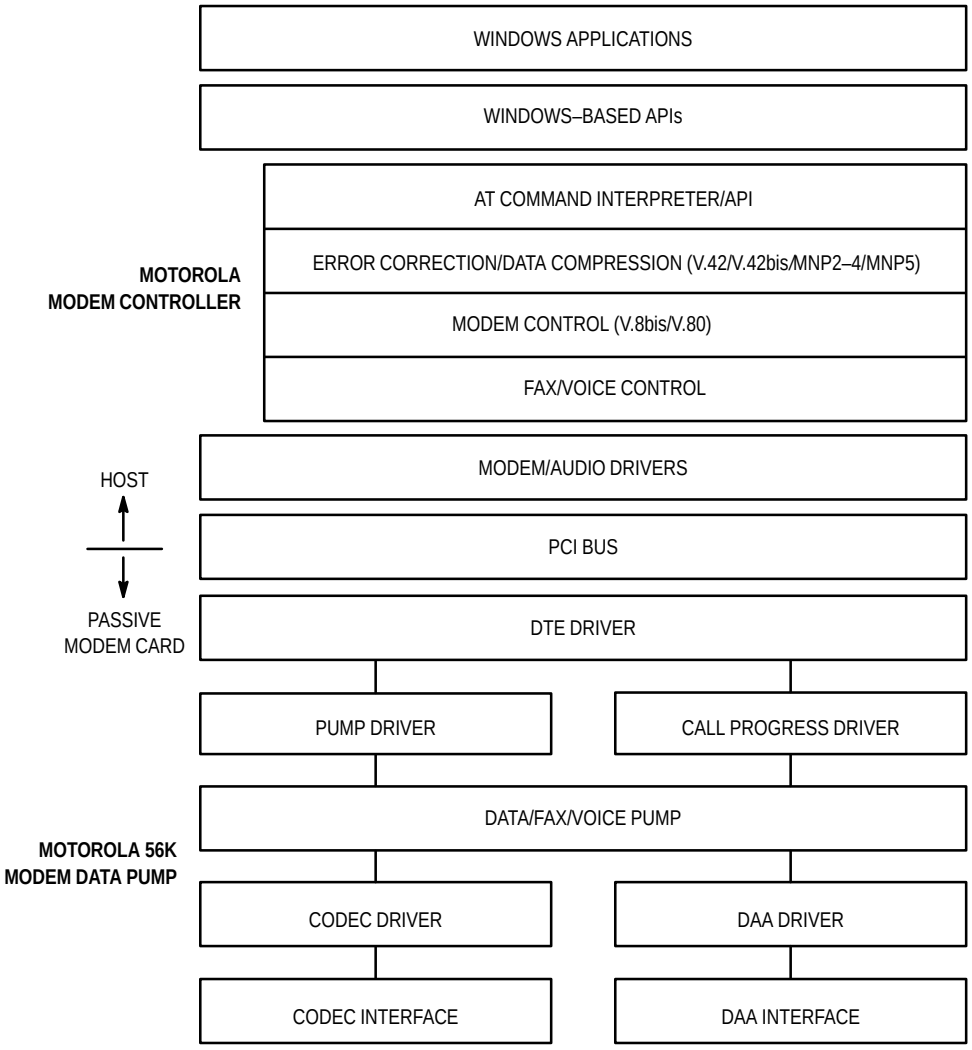
SOFTWARE BLOCK DIAGRAM



Features

- High–Performance K56flex™ Data, Voice, and Fax Modem Which Interfaces Popular Communications Applications
- Controller–Less (Host–Based Controller) for Lowest Cost and Minimum Utilization of Host CPU Resources
- Operating System Support Device Drivers Included: Windows 95 and Windows NT Device Drivers
- High–Performance 24–Bit DSP with Adjustable Control Features for Market Differentiation
- High Quality Dual Integrated Codec–Filter Analog Front End (AFE)
- Common Device Driver Software for ISA and PCI Controller Code

Table 1. DSP Pump Features

Modem Type	Modulation/Function
Data Pump	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 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 Internationalization Support for Call Progress
Fax Pump	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
Voice Pump	Full–Duplex Speakerphone Pump with Automatic Gain Control and Room Monitor Answering Machine

Table 2. Host Control Features

Control Type	Control Code	AT Command Set
Data Control	ITU–T V.42/MNP2–4 Error Correction ITU–T V.42bis/MNP5 Data Compression ITU–T V.80 Sync Access Support	Hayes AT Commands
Fax Control	TIA/EIA 578 Class 1 Fax Class 2 Fax ECM Fax T.30	AT+ Commands
Voice Control	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
MC143455RDK PCI Passive Modem Reference Design Kit Product Preview	MC143455RDKPP/D
MC143455RDK PCI Passive Modem Reference Design Kit Manual	MC143455RDK/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

How to reach us:

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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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