SocketModem®

Embedded Dial-up Modem

Benefits

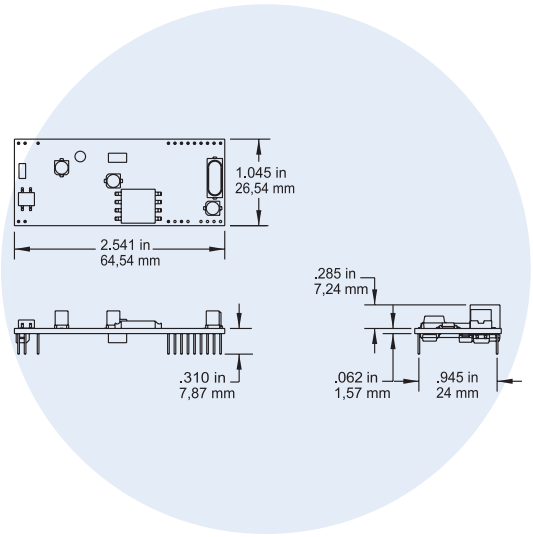
- Global compliance
- Universal socket connectivity
- Quick-to-market solution

The Multi-Tech SocketModem® embedded modem creates communication-ready devices by integrating data/fax modem functionality into a single, universal socket design. The SocketModem embedded modem utilizes a space-efficient (1" x 2.5"), design that allows OEMs to integrate a wide range of modem functions and speeds into any product platform. The complete, ready-to-integrate modem dramatically reduces development time and costs for system designers. The SocketModem embedded modem complies with telecom requirements globally and can be shipped worldwide.

Features

- Complete data/fax modem solution including the controller, data pump, and DAA
- Space efficient universal socket connectivity
- Telecom approved in more than 50 countries
- V.92/56K, V.34/33.6K, V.32bis/14.4K and V.22bis/2400 bps data rate options
- High speed models backward compatible with lower speeds
- V.34/33.6K or V.17/14.4K fax
- V.44 and V.42bis data compression
- V.42 error correction
- Intelligent DAA technology detects line status
- U.S. Caller ID reporting
- Low power/sleep mode
- Flash memory for easy updates
- FastPOS (V.29) and V.22bis Fast Connect
- V.80 Synchronous Access
- Leased (dry) line operation
- 10 or 11-bit modes
- 3.3V or 5V power input options
- Serial or parallel interfaces

Not all features available on all models.



Multi-Tech® Systems

Highlights

Applications. With connect rates from 300 to 56,000 bits per second (bps), the SocketModem embedded modem is targeted at applications that periodically need to send or receive data over a standard telephone line. It is ideal for:

- Appliances
- ATM terminals
- Credit card and check verification systems
- Data collection
- Gas pumps
- Industrial and medical remote monitoring systems
- Point-of-sale terminals
- Remote diagnostics
- Remote metering
- Security systems
- Television set-top boxes
- Ticketing machines
- Vending/gaming machines

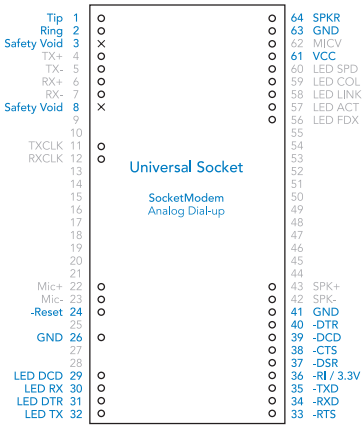
Integration Reduces Space, Power and Cost. The SocketModem embedded modem integrates the controller, data pump and data access arrangement (DAA) in one module. This integration requires low power, low real estate, and provides an overall reduction in costs. Typical power consumption is 260mA (1.3W @ 5V DC), with a maximum of 420mA (2.1W @ 5.25V DC).

Reduces Development Time. The SocketModem embedded modem can make your existing and next generation device, machine, or system, communication-ready without requiring significant hardware changes to its design. The SocketModem embedded modem actually provides faster time-to-market because it relieves the burden and expense of writing modem controller code. The complete, ready-to-integrate modem module allows you to enhance your product while you focus on developing its core features.

Real-time Data Transfer. By adding the SocketModem embedded modem to any system application, you will achieve real-time data transfers at the fastest analog modem speeds. For data communications, the industry-standard V.92 modem downloads at 56K speeds from a digital V.92 server and uploads at 48K bps. If needed, the SocketModem embedded modem will negotiate slower speed connections automatically. For fax applications, it supports industry-standard V.34 (33.6K bps), V.17 (14.4K bps) or Group 3 (9600 bps) faxing using Class 1/1.0 or Class 2/2.0/2.1 commands. If your application does not require fax capabilities, a lower-cost module is available.

Industry-standard Modem Commands. The SocketModem embedded modem provides industry-standard AT-style commands for ease of integration into your existing software applications. In addition, it also provides industry-standard error correction and data compression to shorten transfer time and ensure data is sent error-free.

SocketModem Pin-Out. The SocketModem embedded modem interfaces easily with existing products through a standard serial or parallel communication channel. The complete on-board DAA interfaces with an RJ-11 jack for direct connection to the public switched telephone network. The SocketModem embedded modem provides audio circuit outputs for audio call-progress monitoring, and LED driver outputs for visual monitoring of Carrier Detect, Transmit Data, Receive Data and DTR signals. The SocketModem embedded modem is a Data Terminal Equipment (DTE) device with a serial or parallel interface. The serial DTE channel is capable of transfer speeds to 230.4K bps and can be interfaced directly to a UART or microcontroller.



Note: Populated pins are highlighted.

Universal Socket Connectivity. Multi-Tech's universal socket flexible comm-port architecture provides analog dial-up, ISDN, wireless, or Ethernet socket connectivity with interchangeable modules. This allows you to utilize one system design and populate it with your communication module of choice. In addition, you are assured a seamless migration to future technologies.

Advanced Set-up and Control Features. The SocketModem embedded modem has several advanced features built into the design. It supports remote configuration, which means you can have central site setup and control of the remote modem modules. In addition, the modules provide three-number storage for automatic dialing capabilities and non-volatile memory (NoVRAM) to store user profiles.

Global Compliance. The SocketModem embedded modem has successfully completed international compliance testing (homologation) for global approval. This means one module can be specified per design without having to integrate specific country approved modules for each system used across the world.

Firmware Upgrades. The SocketModem embedded modem also features flash memory to allow for firmware updates. These upgrades allow the user to stay current with the latest enhancements that Multi-Tech has to offer.

Developer's Kit. The Developer's Kit provides the ability to plug in the modem and use it for testing, programming and evaluation. The kit includes one development board with RS-232 DB-25 connector, universal power supply, RJ-11 jack, RS-232 cable and Developer Guide CD.

Who's Multi-Tech? Multi-Tech Systems is an ISO 9001:2000 certified global manufacturer of award-winning telephony, Internet, remote access and device networking products that connect voice and data over IP networks. Within a 34 year history inventing products known for their reliability and performance, Multi-Tech still employs the same mission from which the company was founded: to provide quality solutions that solve real business problems. To reinforce this philosophy, Multi-Tech prides itself on developing and fostering mutually beneficial long-term relationships with its worldwide network of technology partners, sales channels and customers.

Telecom Certifications

Argentina
Australia
Austria
Belgium
Brazil
Canada
Chile
China
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hong Kong
Hungary
Iceland
India
Indonesia
Ireland
Israel
Italy
Japan
Korea
Latvia
Liechtenstein
Lithuania
Luxembourg
Malaysia
Malta
Mexico
Netherlands
New Zealand
Norway
Philippines
Poland
Portugal
Russia
Singapore
Slovak Republic
Slovenia
South Africa
Spain
Sweden
Switzerland
Taiwan
Thailand
Turkey
United Kingdom
United States

The above list is our target set of countries in which the global SocketModem embedded modems are approved. Many of the approvals are completed at the time the product is released to market; whereas others may take additional months to complete. Furthermore, some models may have additional approvals.

SocketModem Models	MT2456SMI-xx	MT5600SMI-xx	MT5634SMI-xx	MT5656SMI-xx
Telecom Approvals				
Global	X	X	X	
Interface				
Serial	X	X	X	X
Parallel		X	X	X
Power				
3.3 Volt	X	X	X	
5 Volt	X	X	X	X
Maximum Data Rate				
V.92/56K		X	X	X
V.34/33.6K		X	X	X
V.32bis/14.4K		X		X
V.22bis/2400 baud	X			
Fax Capability				
V.34 Fax			X	
V.17 Fax		X	X	X
V.29/V.27/V.21 Fax		X	X	X
Fax Class 1		X	X	X
Fax Class 1.0		X	X	
Fax Class 2			X	X
Fax Class 2.0/2.1			X	
Fax Compression (MH, MR, MMR)			X	
Error Correction Mode (ECM)			X	
Memory Type				
Flash + RAM			X	
Masked ROM	X	X		X
Features				
11-bit Mode		X	X	X
U.S. Caller ID	X	X		X
Leased Line			X	
V.22bis Fast Connect	X	X	X	X
FastPOS (V.29)		X		X
Industrial Temp Range			X	
Medical Isolation			X	
LED Pin Outputs	X	X	X	X
Extension Pickup Detection	X	X		X
Remote Hang-up Detection	X	X		X
Line-in-use Detection	X	X		X
Digital PBX Detection & Protection	X	X		X
Voice Record and Playback (TAM)		X	X	X
Speakerphone I/O				X

Specifications

Data Modem

ITU-T V.92/V.90/56K (-92 build option), V.34/33.6K (-34 build option), V.32bis/14.4K (-32 build option), V.22bis/2400 baud (-22 build option), V.22, V.23, & V.21; Bell 212A & Bell 103

V.44 Error Correction (MT5634SMI & MT5600SMI)

V.42 LAPM, MNP 2-4 Error Correction

V.42bis & MNP Class 5 data compression

Fax Modem

ITU-T V.34 (MT5634SMI)

ITU-T V.17, V.29, V.27, & V.21 Ch. 2 (MT5656SMI, MT5634SMI, MT5600SMI)

Telephony/TAM

V.253 commands

2-bit & 4-bit ADPCM, 8-bit linear PCM, & 4-bit IMA coding

8kHz sample rate

Concurrent DTMF, ring, & U.S. Caller ID detection

Power Requirements

MT5656SMI:

Typical: 117mA (.58W @ 5VDC)

Maximum: 118mA (.61W @ 5.25VDC)

MT5634SMI:

Typical: 260mA (1.3W @ 5VDC)

Maximum: 420mA (2.1W @ 5.25VDC)

Typical: 180mA (.59W @ 3.3VDC)

Maximum: 290mA (1.04W @ 3.6VDC)

MT5600SMI:

Typical: 117mA (.58W @ 5VDC)

Maximum: 118mA (.61W @ 5.25VDC)

Typical: 115mA (.38W @ 3.3VDC)

Maximum: 116mA (.41W @ 3.6VDC)

MT2456SMI:

Typical: 78mA (.390W @ 5VDC)

Maximum: 82mA (.431W @ 5.25VDC)

Typical: 74mA (.244W @ 3.3VDC)

Maximum: 78mA (.273W @ 3.6VDC)

Physical Description

2.541" L x 1.045" W x 0.68" H; 0.6 oz. (6.45cm x 2.65cm x 1.7cm; .017 kg.)

Operating Environment

0° to +70° C, -40° to +85° C (Industrial Temperature build options)

Certifications

UL 1950, EN 60950, CSA 950, AS 3260, CCC, EN 60601 (High Voltage Dielectric build option)

EMC: FCC Part 15 (Class B), Canada (Class B), EN 55022 (Class B), EN 55024

Ordering Information

Product	Description	Region
MT2456SMI-22	V.22bis Serial Data Only	Global
MT2456SMI-L-22	V.22bis Serial Data Only	Global
MT5600SMI-32	V.32bis Serial Data/Fax	Global
MT5600SMI-L-32	V.32bis Serial Data/Fax	Global
MT5600SMI-P-32	V.32bis Parallel Data/Fax	Global
MT5600SMI-34	V.34 Serial Data/Fax	Global
MT5600SMI-L-34	V.34 Serial Data/Fax	Global
MT5600SMI-X-L-34	V.34 Serial Data/Fax	Global
MT5600SMI-P-34	V.34 Parallel Data/Fax	Global
MT5600SMI-P-L-34	V.34 Parallel Data/Fax	Global
MT5600SMI-92	V.92 Serial Data/Fax	Global
MT5600SMI-L-92	V.92 Serial Data/Fax	Global
MT5600SMI-X-L-92	V.92 Serial Data/Fax (no LED pins)	Global
MT5600SMI-P-92	V.92 Parallel Data/Fax	Global
MT5600SMI-P-L-92	V.92 Parallel Data/Fax	Global
MT5634SMI-34	V.34 Serial Data V.34 Fax	Global
MT5634SMI-92	V.92 Serial Data V.34 Fax	Global
MT5634SMI-P-92	V.92 Parallel Data V.34 Fax	Global
MT5634SMI-ITP-92	V.92 Serial Data V.34 Fax	Global
MT5634SMI-P-ITP-92	V.92 Parallel Data V.34 Fax	Global
MT5634SMI-HV-92	V.92 Serial Data V.34 Fax	Global
MT5634SMI-P-HV-92	V.92 Parallel Data V.34 Fax	Global
MT5656SMI-V-92	V.92 Serial Data/Fax	US/Can/Euro
MT5656SMI-P-V-92	V.92 Parallel Data/Fax	US/Can/Euro
MT5656SMI-V-34	V.34 Serial Data/Fax	US/Can/Euro
MT5656SMI-P-V-34	V.34 Parallel Data/Fax	US/Can/Euro
MT5656SMI-V-32	V.32bis Serial Data/Fax	US/Can/Euro
MT5656SMI-P-V-32	V.32bis Parallel Data/Fax	US/Can/Euro
MTSMI-DK	SocketModem Serial Developer Kit	Global
MTSMI-P-DK	SocketModem Parallel Developer Kit	Global

Ordering codes

-92	V.92/56K data rate
-34	V.34/33.6K data rate
-32	V.32bis/14.4K data rate
-22	V.22bis/2400 baud data rate
-P	Parallel interface (default is serial)
-X	Exclude LED pin outputs (Legacy MT5600SMI and MT3400SMI support)
-L	3.3 Volt power input (default is 5V)
-ITP	-40 to +85° C Industrial temperature range
-HV	High Voltage 3KV dielectric isolation (EN60601)
-V	Speakerphone I/O
-DK	Developer kit

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