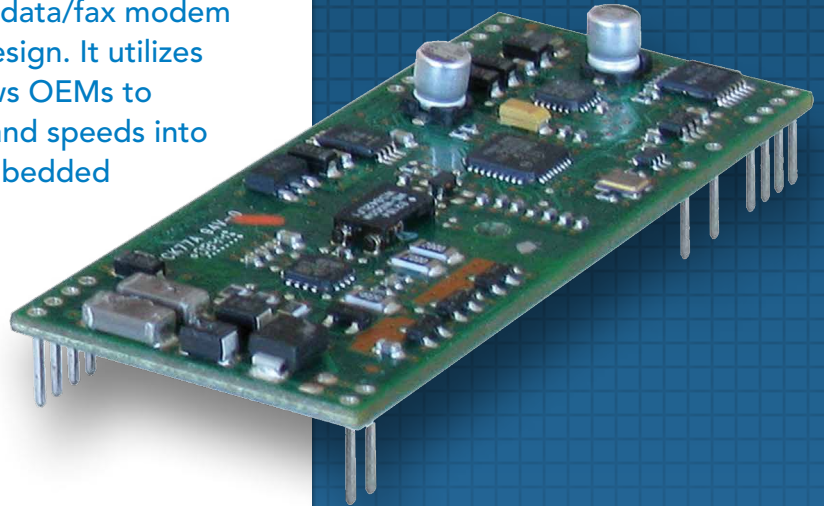


## Embedded Analog Modem

The Multi-Tech SocketModem® embedded modem creates communication-ready devices by integrating data/fax modem functionality into a single, universal socket design. It 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 SocketModem embedded modem complies with telecom requirements globally and can be shipped worldwide.

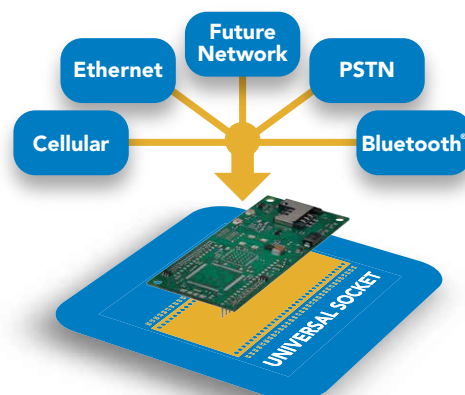
### Features

- Complete data/fax modem solution including the controller, data pump, and DAA
- Universal Socket connectivity
- Telecom approved in more than 50 countries
- V.92/56K, V.34/33.6K 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
- 2-wire leased line operation
- 10 or 11-bit modes
- 3.3V or 5V power input options
- Serial or parallel interfaces
- Two-year warranty



### Universal Socket Benefits

- Interchangeable communications devices
- Quick-to-market
- Global approvals
- Easy migration to future networks



## Specifications

### Data Modem

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

V.44 Error Correction

V.42 LAPM, MNP 2-4 Error Correction

V.42bis & MNP Class 5 data compression

### Fax Modem

ITU-T V.34 (MT9234SMI)

ITU-T V.17, V.29, V.27, & V.21 Ch. 2 (MT9234SMI)

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

MT9234SMI:

Typical: 125mA (.62W @ 5VDC)

Maximum: 138mA (.72W @ 5.25VDC)

Typical: 122mA (.40W @ 3.3VDC)

Maximum: 136mA (.49W @ 3.6VDC)

MT5692SMI:

Typical: 72mA (.24W @ 3.3VDC)

Maximum: 81mA (.27W @ 3.3VDC)

Typical: 76mA (.38W @ 5VDC)

Maximum: 89mA (.45W @ 5VDC)

MT2492SMI:

Typical: 95mA (.48W @ 5VDC)

Maximum: 114mA (.6W @ 5.25VDC)

Typical: 95mA (.31W @ 3.3VDC)

Maximum: 114mA (.41W @ 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 (MT2492SMI)

-40° to +85° C (MT9234SMI & MT5692SMI)

### Certifications & Approvals

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

RoHS Compliant

## 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 machine

### 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.

|              |    |   |    |               |
|--------------|----|---|----|---------------|
| (I/O) Tip    | 1  | ○ | 64 | SPKR (O)      |
| (I/O) Ring   | 2  | ○ | 63 | GND (O)       |
| Safety Void  | 3  | X | 62 | MICV (I)      |
| (O) TX+      | 4  | ○ | 61 | VCC (I)       |
| (O) TX-      | 5  | ○ | 60 | -LED SPD (O)  |
| (I) RX+      | 6  | ○ | 59 | -LED COL (O)  |
| (I) RX-      | 7  | ○ | 58 | -LED LINK (O) |
| Safety Void  | 8  | X | 57 | -LED ACT (O)  |
|              | 9  |   | 56 | -LED FDX (O)  |
|              | 10 |   | 55 |               |
| (O) TXCLK    | 11 | ○ | 54 |               |
| (O) RXCLK    | 12 | ○ | 53 |               |
|              | 13 |   | 52 |               |
|              | 14 |   | 51 | GPIO (I/O)    |
|              | 15 |   | 50 | GPIO (I/O)    |
|              | 16 |   | 49 | GPIO (I/O)    |
|              | 17 |   | 48 | GPIO (I/O)    |
|              | 18 |   | 47 |               |
|              | 19 |   | 46 |               |
|              | 20 |   | 45 |               |
| (I)          | 21 |   | 44 |               |
| (I) Mic+     | 22 | ○ | 43 | SPK+ (O)      |
| (I) Mic-     | 23 | ○ | 42 | SPK- (O)      |
| (I) -Reset   | 24 | ○ | 41 | GND (I)       |
| (I) USB_VBUS | 25 | ○ | 40 | -DTR (I)      |
| (I) GND      | 26 | ○ | 39 | -DCD (O)      |
| (I/O) USB_DP | 27 | ○ | 38 | -CTS (O)      |
| (I/O) USB_DN | 28 | ○ | 37 | -DSR (O)      |
| (O) LED DCD  | 29 | ○ | 36 | -RI (O)       |
| (O) LED RX   | 30 | ○ | 35 | -TXD (I)      |
| (O) LED DTR  | 31 | ○ | 34 | -RXD (O)      |
| (O) LED TX   | 32 | ○ | 33 | -RTS (I)      |

## Universal Socket Connectivity

Multi-Tech's Universal Socket is a flexible, compact architecture that provides cellular, Ethernet, PSTN or Wi-Fi® network access with interchangeable communications devices. This means you can utilize one system design and populate it with your connectivity device of choice accommodating multiple connectivity requirements. In addition, you are assured a seamless migration to future technologies.

## Developer's Kit

The Developer's Kit allows you to plug in the communications device and use it for testing, programming and evaluation. See [www.multitech.com/pdf/devkit.go](http://www.multitech.com/pdf/devkit.go) for more details.

## Telecom Certifications:

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

\* MT9234SMI only.

|                                    | MT2492SMI-xx | MT9234SMI-xx | MT5692SMI-xx |
|------------------------------------|--------------|--------------|--------------|
| <b>SocketModem Models</b>          |              |              |              |
| <b>Telecom Approvals</b>           |              |              |              |
| Global                             |              | X            | X            |
| <b>Interface</b>                   |              |              |              |
| Serial                             | X            | X            | X            |
| Parallel                           |              | X            | X            |
| <b>Power</b>                       |              |              |              |
| 3.3 Volt                           | X            | X            | X            |
| 5 Volt                             | X            | X            | X            |
| <b>Maximum Data Rate</b>           |              |              |              |
| V.92/56K                           | X            | X            | X            |
| V.34/33.6K                         | X            | X            | X            |
| V.22bis/2400 baud                  | X            |              |              |
| <b>Fax Capability</b>              |              |              |              |
| V.34 Fax                           |              | X            |              |
| V.17 Fax                           |              | X            | X            |
| V.29/V.27/V.21 Fax                 |              | X            | X            |
| Fax Class 1                        |              | X            | X            |
| Fax Class 1.0                      |              | X            | X            |
| Fax Class 2                        |              | X            |              |
| Fax Class 2.0/2.1                  |              | X            |              |
| Fax Compression (MH, MR, MMR)      |              | X            |              |
| Error Correction Mode (ECM)        |              | X            |              |
| <b>Memory Type</b>                 |              |              |              |
| Flash + RAM                        |              | X            |              |
| Masked ROM                         | X            |              | X            |
| <b>Features</b>                    |              |              |              |
| 11-bit Mode                        |              | X            |              |
| U.S. Caller ID                     | X            | X            | X            |
| Leased Line (2-wire)               |              | X            |              |
| V.22bis Fast Connect               | X            | X            | X            |
| FastPOS (V.29)                     |              |              | X            |
| Callback Security                  |              | X            |              |
| Industrial Temp Range              |              | X            | X            |
| Medical Isolation                  |              | X            |              |
| LED Pin Outputs                    |              | X            | X            |
| Extension Pickup Detection         | X            |              | X            |
| Remote Hang-up Detection           | X            |              | X            |
| Line-in-use Detection              | X            |              | X            |
| Digital PBX Detection & Protection | X            |              | X            |
| Voice Record & Playback (TAM)      |              | X            | X            |
| Speakerphone I/O                   |              |              | X            |

## Ordering Information

| Product           | Description                        | Region      |
|-------------------|------------------------------------|-------------|
| MT9234SMI-92      | V.92 Serial Data V.34 Fax          | Global      |
| MT9234SMI-P-92    | V.92 Parallel Data V.34 Fax        | Global      |
| MT9234SMI-L-92    | V.92 Serial Data V.34 Fax          | Global      |
| MT9234SMI-P-L-92  | V.92 Parallel Data V.34 Fax        | Global      |
| MT9234SMI-HV-92   | V.92 Serial Data V.34 Fax          | Global      |
| MT9234SMI-P-HV-92 | V.92 Parallel Data V.34 Fax        | Global      |
| MT5692SMI-92      | V.92 Serial Data/Fax               | Global      |
| MT5692SMI-L-92    | V.92 Serial Data/Fax               | Global      |
| MT5692SMI-X-L-92  | V.92 Serial Data/Fax (no LED pins) | Global      |
| MT5692SMI-P-92    | V.92 Parallel Data/Fax             | Global      |
| MT5692SMI-P-L-92  | V.92 Parallel Data/Fax             | Global      |
| MT5692SMI-V-92    | V.92 Serial Data/Fax               | Global      |
| MT5692SMI-34      | V.34 Serial Data/Fax               | Global      |
| MT5692SMI-L-34    | V.34 Serial Data/Fax               | Global      |
| MT5692SMI-P-34    | V.34 Parallel Data/Fax             | Global      |
| MT5692SMI-P-L-34  | V.34 Parallel Data/Fax             | Global      |
| MT5692SMI-V-34    | V.34 Serial Data/Fax               | Global      |
| MT2492SMI-92      | V.92 Serial Data Only              | US/Can/Euro |
| MT2492SMI-34      | V.34 Serial Data Only              | US/Can/Euro |
| MT2492SMI-22      | V.22bis Serial Data Only           | US/Can/Euro |
| MT2492SMI-L-92    | V.92 Serial Data Only              | US/Can/Euro |
| MT2492SMI-L-34    | V.34 Serial Data Only              | US/Can/Euro |
| MT2492SMI-L-22    | V.22bis Serial Data Only           | US/Can/Euro |
| MTSMI-UDK         | 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                                                |
| -22  | V.22bis/2400 baud data rate                                         |
| -P   | Parallel interface (default is serial)                              |
| -X   | Exclude LED pin outputs<br>(Legacy MT5600SMI and MT3400SMI support) |
| -L   | 3.3 Volt power input (default is 5V)                                |
| -HV  | High Voltage dielectric isolation (EN60601)                         |
| -V   | Speakerphone I/O                                                    |
| -DK  | Developer kit                                                       |
| -UDK | Universal Developer kit                                             |

## Services & Warranty

Multi-Tech's comprehensive Support Services programs offer a full array of options to suit your specific needs. These services are aimed at protecting your investment, extending the life of your solution or product, and reducing total cost of ownership. Our seasoned technical experts, with an average tenure of more than 10 years, can walk you through smooth installations, troubleshoot issues and help you with configurations. Products include a 2-year warranty.

### Installation Support

Multi-Tech's Installation Support Service delivers priority service with the ability to work one-on-one with an experienced Multi-Tech technical support engineer, to guide you through the installation process for our products.

### Technical Support Services

At Multi-Tech, we're committed to providing you personalized attention and quality service while providing you a quick response to your product support needs. We have several options of support for you to choose from.

For additional information on Support Services as well as other service offerings, please contact your Multi-Tech representative or visit [www.multitech.com/support.go](http://www.multitech.com/support.go).

### World Headquarters

Multi-Tech Systems, Inc.  
2205 Woodale Drive  
Mounds View, MN 55112 U.S.A.  
Tel: 763-785-3500  
Toll-Free: 800-328-9717  
Email: [sales@multitech.com](mailto:sales@multitech.com)  
[www.multitech.com](http://www.multitech.com)

### EMEA Headquarters

Multi-Tech Systems (EMEA)  
Unit 1, Thames Court  
2 Richfield Avenue  
Reading, Berkshire RG1 8EQ  
United Kingdom  
Tel: +(44) 118 959 7774  
Email: [sales@multitech.co.uk](mailto:sales@multitech.co.uk)