

## SocketModem<sup>®</sup>

### MT2492SMI Device Guide

## SocketModem Device Guide

S000536, Version A

MT2492SMI-92, MT2492SMI-34, MT2492SMI-22, MT2492SMI-L-92, MT2492SMI-L-34, MT2492SMI-L-22

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### Revisions

Revision	Date	Description
A	12/05/12	Initial release. Information was in the Universal Socket Developer Guide.

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### Warranty

To read the warranty statement for your product, please visit: <http://www.multitech.com/warranty.go>.

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# Chapter 1 – Device Overview

## Description

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 use a space-efficient 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.

## Product Build Options

Product	Description	Region
<b>MT2492SMI</b>		
MT2492SMI-92	V.92 Serial Data 5V	US, Canada, Europe
MT2492SMI-34	V.34 Serial Data 5V	US, Canada, Europe
MT2492SMI-22	V.22bis Serial Data 5V	US, Canada, Europe
MT2492SMI-L-92	V.92 Serial Data 3.3V	US, Canada, Europe
MT2492SMI-L-34	V.34 Serial Data 3.3V	US, Canada, Europe
MT2492SMI-L-22	V.22bis Serial Data 3.3V	US, Canada, Europe
<b>Telecom Label</b>		
MT2492SMI-LS	MT2492SMI – Global Regulatory Label	US, Canada, Europe
<b>Developer Kit</b>		
MTSMI-UDK	Universal Developer Kit	US, Canada, Europe

### Notes:

92 builds have a V.92/56K data rate

34 builds have a V.34/33.6K data rate

22 builds have V.22bis data rate

All builds can be ordered individually or in 50-packs.

The complete product code may end in .Rx, for example MT2492MI-92.Rx, where R is revision and x is the revision number.

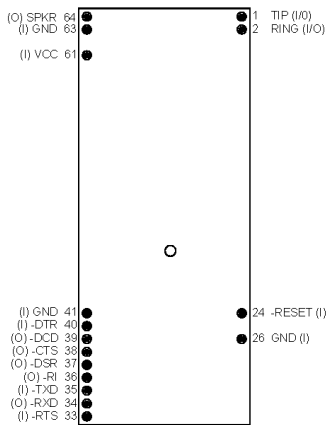
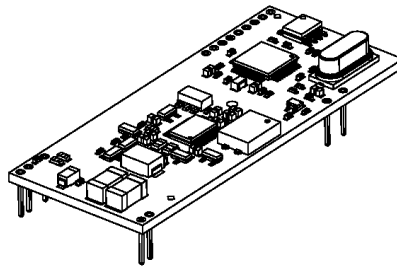
## Documentation

The following documentation is available by email to [oemsales@multitech.com](mailto:oemsales@multitech.com) or by using the Developer Guide Request Form on the multitech.com website.

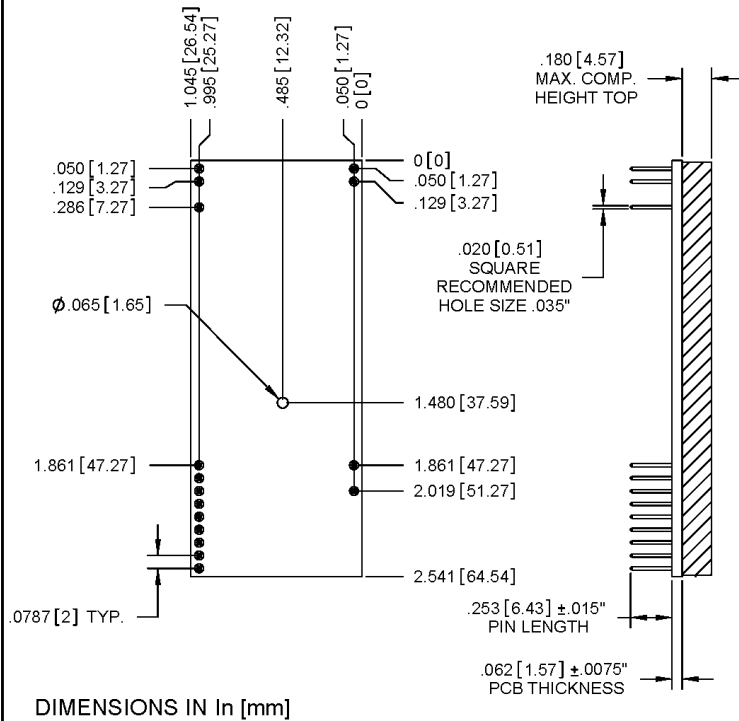
- **Device Guides** – This document. Provides model-specific specifications and developer information.
- **Universal Socket Developer Guide** – Provides an overview, safety and regulatory information, design considerations, schematics, and general device information.
- **AT Command Guide** – Use S000435 the MT2492SMI AT Command Guide.

# Chapter 2 – Mechanical Drawings

## Mechanical Drawings – MT2492SMI All Builds



**MT2492SMI-34**  
**MT2492SMI-L-34**  
**MT2492SMI-92**  
**MT2492SMI-L-92**  
**MT2492SMI-22**  
**MT2492SMI-L-22**



# Chapter 3 – Specifications

## Technical Specifications

Category	Description
<b>General</b>	
Standards	V.92, V.90, V.34, V.32bis, V.32, V.29, V.22bis, V.22, V.23, V.21; Bell 212A & Bell 103
<b>Speed, Format, Compression, Operation Modes</b>	
Serial/Data Speeds	Serial port data rates adjustable to 300, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, and 115,200
Client-to-Client Data Rates	33,600, 31,200, 28,800, 26,400, 24,000, 21,600, 19,200, 16,800 bps 14,400, 12,000, 9600, 7200, 4800 bps 2400, 1200, 0-300 bps
Data Format	Serial, asynchronous
Character Format	10 bit
Data Error Correction (ECM)	V.42 (LAPM, MNP 2-4)
Data Compression	V.44, V.42bis, MNP 5
Operation Modes	Full duplex over dial-up lines; data mode, command mode, and online command mode
<b>Physical Description</b>	
Weight	0.6 oz. (0.017kg)
Dimensions	2.541" L x 1.045" W x 0.68" H (6.45cm L x 2.65cm W x 1.7cm H)
<b>Environment</b>	
Operating Temperature	0° C to +70° C
Storage Temperature	-40° C to +85° C
Humidity	20% to 90% non-condensing
<b>Power Requirements</b>	
Operating Voltage	Typical: 3.3VDC ± 5%; absolute maximum supply voltage: 3.6 VDC Typical: 5VDC ± 5%; absolute maximum supply voltage: 5.25VDC
Input Power	3.3V or 5V depending on build
<b>Transmission</b>	
Transmit Level	- 12 dBm (varies by country setting)
Receiver Sensitivity	- 40 dBm( -43 under worst-case conditions)
DAA Isolation	1.5Kv r.m.s. or 2121VDC at working voltage of 250VAC
Flow Control	XON/XOFF (software), RTS/CTS (hardware)
Command Buffer	50 characters
Telephony/TAM	TAM: S-101 AT+V commands (no CODEC for speakers/microphone interface)

Category	Description
<b>Certifications, Compliance, Warranty</b>	
EMC Compliance	FCC Part 15 Class B Canadian EMC Class B EN55022 Class B EN55024
Safety Compliance	UL 60950-1 cUL 60950-1 EN 60950-1
Warranty	Two years

## Device Reset

The SocketModem is ready to accept commands after a fixed amount of time ("X" Time) after power-on or reset.

Model	Time Constant	"X" Time	Minimum Reset Pulse <sup>1</sup>
MT2492SMI	250 ms	6 seconds	100us

<sup>1</sup>The SocketModem may respond to a shorter reset pulse.

## DC Electrical Characteristics

**Units:** Volts      5VDC Characteristics (VDD = 5V ± 0.25V) VDDMAX = 5.25V  
3.3VDC Characteristics (VDD = 3.3V ± 0.3V) VDDMAX = 3.6V

Parameter	Minimum	Maximum	
<b>5V Serial – All builds</b>			
Digital Inputs –DTR (40), –TXD (35), –RTS (33), –Reset (24)	Input High Min 2.0V	Input Low Max 0.8V	
Digital Outputs –DCD (39), –CTS (38), –DSR (37), –RI (36), –RXD (34) 2mA, Z <sub>INT</sub> = 120 Ω	Output High Min 2.3V	Output Low Max 0.4V	
Digital Input Capacitance			50pF
<b>3.3V Serial – All builds</b>			
Digital Inputs –DTR (40), –TXD (35), –RTS (33), –Reset (24)	Input High Min 2.0V	Input Low Max 0.8V	
Digital Outputs –DCD (39), –CTS (38), –DSR (37), –RI (36), –RXD (34)	Output High Min. 2.4V	Output Low Max 0.4V	
Digital Input Capacitance			50pF

## Power Measurements

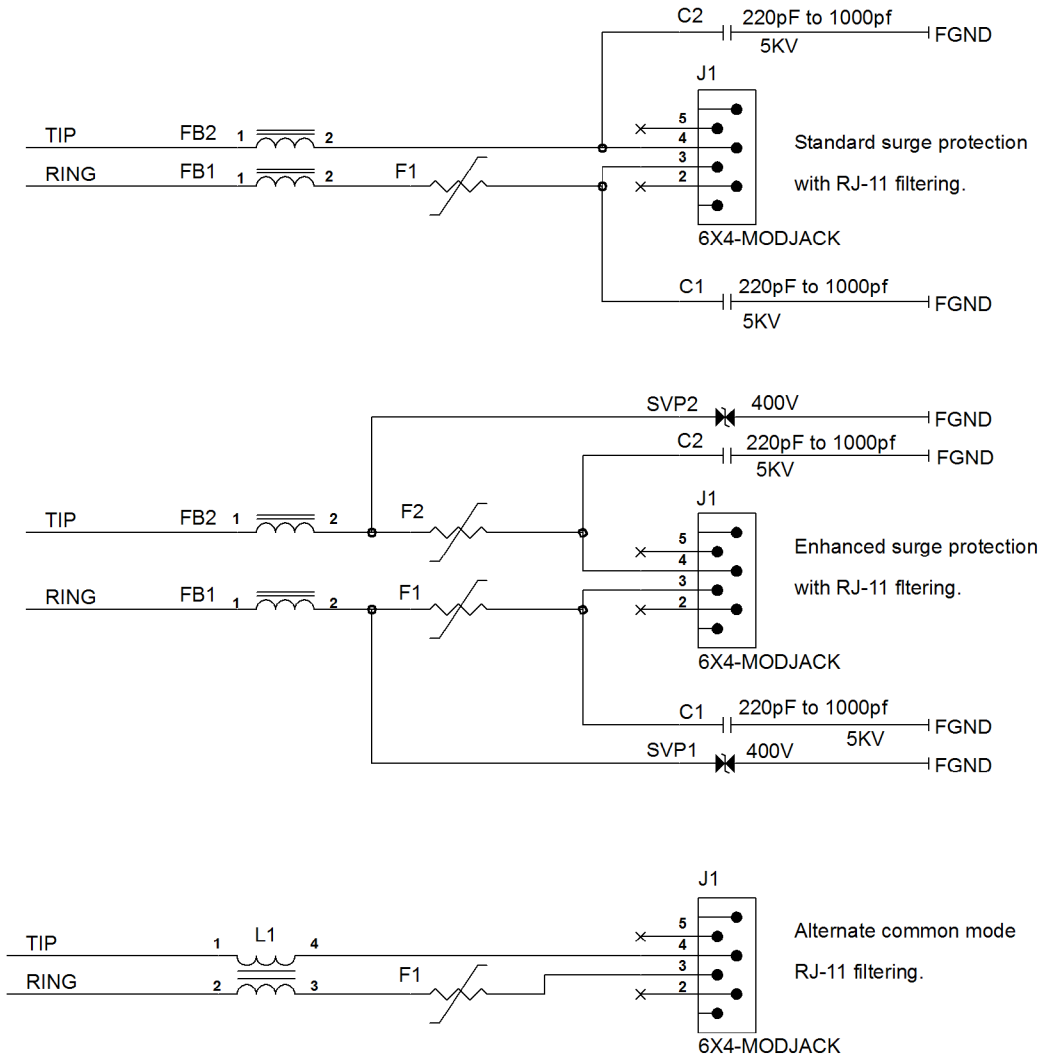
Multi-Tech Systems, Inc. recommends that you incorporate a 10% buffer into your power source when determining product load.

	Typical	Maximum
<b>MT2492SMI- 3.3 Volt</b>		
Current (AMPS)	86mA	96mA
Watts	283mW at 3.3VDC	345mW at 3.6VDC
<b>MT2492SMI 5.0 Volt</b>		
Current (AMPS)	88.5mA	94.8mA
Watts	442mW at 5.0VDC	498mW at 5.25VDC



# Chapter 4 – Application Notes

## Tip and Ring Interface



### OEM Motherboard Filtering and Surge Protection Options

See Design Considerations and Recommended Parts in the Universal SocketModem Developer Guide.

### Recommended Uses for Filtering Options

- Enhanced Surge Protection with RJ-11 Filtering**  
 Use this option when additional lightning protection may be needed.
- Alternate Common Mode with RJ-11 Filtering**  
 Use this option when your design has common mode emission issues.