MULTITECH®

SocketModem® Cell

Embedded Cellular Modems 4G-LTE Models

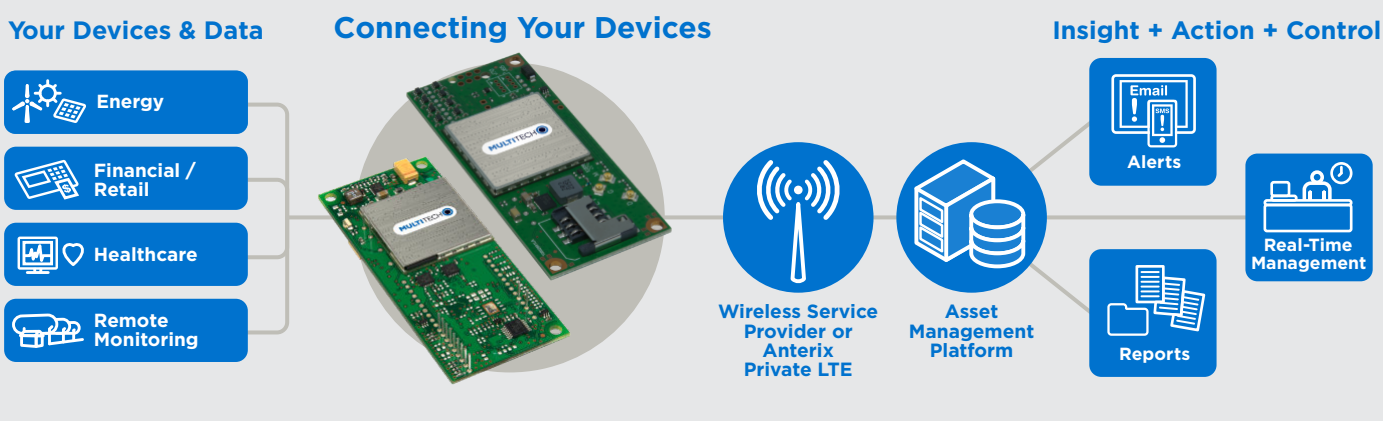
SocketModem® Cell embedded cellular modem is a complete, ready-to-integrate communications device ideal for customers looking to add 4G-LTE cellular communications to their IoT/M2M solutions. These communications devices enable easy technology transitions and allow developers to add wireless communication to products with a minimum of development time and expense. The SocketModem Cell embedded cellular modems are carrier approved and end-device certified, decreasing time to market while saving customers money.

BENEFITS

- Approved by carriers and regulatory agencies saving customers time, money, and protection from the risks associated with pursuing their own certifications
- Quick to market leveraging MultiTech's approvals
- Interchangeable communications devices for easy migration to future networks
- Long solution lifecycle reduces redesign time and cost
- Support from leading experts in IoT/M2M technology

FEATURES

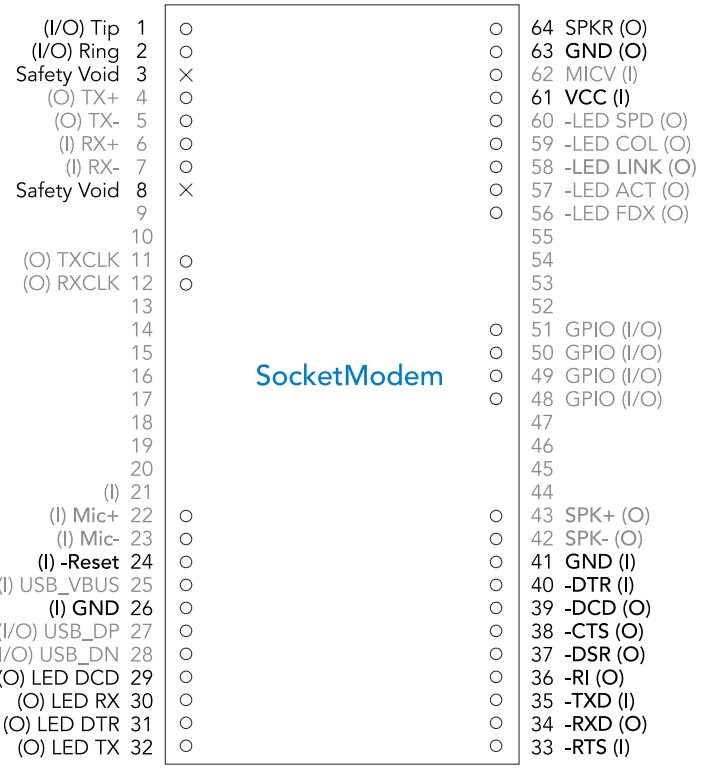
- 4G Models (Cat 4, Cat 1 and Cat M1)
- Global capable Cat 4 and Cat M1/NB-IoT models
- 4G Cat 4, Cat 1 and Cat M1 include GNSS
- Universal Socket connectivity
- Short Message Services (SMS)
- Serial or USB interfaces
- Serial interface supports speeds up to 921.6K bps
- AT command compatible
- USB 2.0 high speed compatible
- Two-year warranty



multitech.com/smcell

SocketModem Cell Pin-Out

The SocketModem Cell cellular modem interfaces easily with existing products through a standard serial communication channel. The serial DTE channel is capable of transfer speeds to 921.6 Kbps (depending on model) and can be interfaced directly to a UART or microcontroller. The complete on-board RF transceiver interfaces with an antenna for direct connection to wireless data networks. It also includes an onboard LED to display network status.



Power Saving Modes (Cat M1 Models)

Extended Discontinuous Reception (eDRX) mode increases the length of time the end device can sleep before it has to check in with the network which saves power. Power Saving Mode (PSM) allows the device to notify the network it is going to sleep or dormant indefinitely only waking up based on user defined timer. Once the device wakes up and transmits it will stay awake for a few frames of time in case the network needs to reach that device. A device using PSM transmitting a small amount of data once per day could last many years using 2 AA batteries.

Developer Kits

Developer Kits allow you to plug in the communications device and use it for testing, programming and evaluation. MTUDK2-ST-CELL.R1 developer kit is designed to work with all of our cellular SocketModem® Cell and Dragonfly™ cellular modems. Developer kits include a development board and all the necessary accessories to get you up and running right out of the box.

SPECIFICATIONS

Models	MTSMC-L1G2D MTSMC-L1G2D-U	MTSMC-L4G1 MTSMC-L4G1-U	MTSMC-L4N1 MTSMC-L4N1-U	MTSMC-L4E1 MTSMC-L4E1-U
Region	Australia Canada European Union United Kingdom United States	Australia Canada European Union United Kingdom United States	Canada United States	European Union United Kingdom
Performance	3GPP Release 10 4G-LTE FDD Category 1 10 Mbps peak downlink 5 Mbps peak uplink with 3G/2G fallback	3GPP Release 11 4G-LTE FDD/TDD Category 4 150 Mbps peak downlink 50 Mbps peak uplink with 3G/2G fallback	3GPP Release 10 4G-LTE FDD Category 4 150 Mbps peak downlink 50 Mbps peak uplink with 3G fallback	3GPP Release 10 4G-LTE FDD Category 4 150 Mbps peak downlink 50 Mbps peak uplink with 3G/2G fallback
Frequency Bands (MHz)	**4G LTE FDD (Europe):** B1(2100), B3(1800), B7(2600), B8(900), B20(800) **3G (Europe Fallback):** B1(2100), B3(1800), B8(900) **2G (Europe Fallback):** B2(1900), B3 (1800), B5(850), B8(900) **4G LTE FDD (AT&T):** B2(1900), B4(AWS1700), B12(700), B14(700-FirstNet)† **4G LTE FDD (Verizon):** B4(AWS1700), B13(700) **4G LTE FDD (Anterix):** B8(900) **4G LTE FDD (APAC):** B1(2100), B9(1800), B18(800), B19(850), B26(850), B28(700) **3G:** B1(2100), B2(1900), B4(AWS1700), B5(850), B6(800), B8(900), B19(850) **Other 4G LTE FDD Bands:** B25(1900)	**4G LTE FDD (Europe):** B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28(700) **3G (Europe Fallback):** B1(2100), B3(1800), B8(900) 2G (Europe Fallback): B2(1900), B3(1800), B8(900) **4G LTE FDD (AT&T):** B2(1900), B4(AWS1700), B12(700) **4G LTE FDD (Verizon):** B4(AWS1700), B13(700) **4G LTE FDD:** B5(850), B18(800), B19(800), B25(1900), B26(850) **4G LTE TDD:** B38(2600), B39(1900), B40(2300), B41(2500)	**4G LTE FDD (AT&T):** B2(1900), B4(AWS1700), B12(700), B14(700-FirstNet) † **4G LTE FDD (T-Mobile):** B2(1900), B4(AWS1700), B5(850), B66(AWS-3 1700), B71(600) **4G LTE FDD (Verizon):** B4(AWS1700), B13(700) **3G (AT&T):** B2(1900), B4(AWS1700), B5(850)	**4G LTE FDD (Europe):** B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28A(700) **3G (Europe Fallback):** B1(2100), B3(1800), B8(900) **2G (Europe Fallback):** B3(1800), B8(900)
GNSS	Yes			
SMS	Mobile Originate, Mobile Terminated and Cell Broadcast / PDU or Text Mode			
USB	USB 2.0 high speed compatible (-U Models)			
TCP/IP Functions*	FTP, SMTP, TCP, UDP	FTP, SMTP, SSL, TCP, UDP		
Connectors	Antenna : 3 UFL (Cellular, Rx Diversity/MIMO, GNSS) Mini SIM (2FF); 1.8V & 3V			
Dimensions	3.150" x 1.375" (80.010 mm x 34.925 mm)			
Power Requirements				
Power Draw Serial Models @ 5 VDC	Sleep Mode: 22 mA Idle: 31 mA Max Power: 570 mA (average)	Sleep Mode: 22.6 mA Idle: 46 mA Max Power: 562 mA (average)	Sleep Mode: 4 mA Idle: 20 mA Max Power: 615 mA (average)	Sleep Mode: 8 mA Idle: 13 mA Max Power: 747 mA (average)
Power Draw USB Models @ 5 VDC	Sleep Mode: N/A Idle: 45 mA Max Power: 560 mA (average)	Sleep Mode: N/A Idle: 46 mA Max Power: 577 mA (average)	Sleep Mode: N/A Idle: 21 mA Max Power: 672 mA (average)	Sleep Mode: N/A Idle: N/A Max Power: 704 mA (average)
Input Power (USB Models)	5.0 VDC			
Input Power (Serial Models)	3.3 VDC or 5.0 VDC			
Environmental				
Operating Temperature	-40° C to +85° C (-40° F to +185° F)			
Storage Temperature	-40° C to +85° C (-40° F to +185° F)			
Relative Humidity	20% to 90% RH noncondensing			
Certifications				
EMC/Radio Compliance	CE, FCC, IC, RCM, UKCA		FCC, IC	CE, UKCA
Safety Compliance	UL/cUL/IEC 62368-1 UL/cUL/IEC 60950-1		UL/cUL/IEC 62368-1	IEC 62368-1 IEC 60950-1
Network Compliance	PTCRB			N/A
Network Operator	AT&T, Verizon			N/A
Warranty	2-Years / www.multitech.com/legal/warranty			

* See device guides or AT command guides for additional information.

† All future end-user (OEM) devices will and must go through FirstNet certification prior to being included in the FirstNet device ecosystem.

SPECIFICATIONS

Models	MTSMC-LAT3 MTSMC-LAT3-U	MTSMC-MNG6 MTSMC-MNG6-U	MTSMC-MNG2 MTSMC-MNG2-U	MTSMC-MNA1 MTSMC-MNA1-U
Region	Canada United States	Australia Canada European Union United Kingdom United States	Australia Canada European Union United Kingdom United States	Canada United States
Performance	3GPP Release 9 4G-LTE FDD Category 1 10 Mbps peak downlink 5 Mbps peak uplink with 3G fallback	3GPP Release 14 4G LTE FDD Cat M1 M1: 588 Kbps peak downlink 1 Mbps peak uplink 2G: 264 Kbps peak downlink 210 Kbps peak uplink	3GPP Release 13 4G-LTE FDD Category M1/NB1 M1: 300 Kbps peak downlink 375 Kbps peak uplink NB1: 21 Kbps peak downlink 62.5 Kbps peak uplink	3GPP Release 13 4G-LTE FDD Category M1 300 Kbps peak downlink 375 Kbps peak uplink
Frequency Bands (MHz)	**4G LTE FDD (AT&T):** B2(1900), B4(AWS1700), B5(850), B12(700), B13(700) **3G (AT&T):** B2(1900), B5(850)	**4G LTE FDD (Europe):** B1(2100), B3(1800), B8(900), B20(800) **2G (Europe Fallback):** B2(1900), B3(1800), B5(850), B8(900) **4G (T-Mobile):** B2(1900), B4(AWS1700), B5(850), B66(AWS-3 1700) **4G (Verizon):** B4(AWS1700), B13(700) **4G LTE FDD (APAC):** B1(2100), B18(800), B19(850), B26(850), B28(700) **4G LTE FDD Bands:** B25(1900), B27(800)	**4G-Cat M1 FDD (Europe):** B3(1800), B8(900), B20(800) **2G (Europe Fallback):** B2(1900), B3(1800), B5(850), B8(900) **4G (AT&T):** B2(1900), B4(AWS1700), B12(700), B13(700) **4G (Verizon):** B4(AWS1700), B13(700)	**4G-Cat M1 FDD (AT&T):** B2(1900), B4(AWS1700), B12(700) **4G-Cat M1 FDD (Verizon):** B4(AWS1700), B13(700)
GNSS	No		Yes	
SMS	Mobile Originate, Mobile Terminated and Cell Broadcast / PDU or Text Mode	SMS over NAS	Mobile Originate, Mobile Terminated and Cell Broadcast / PDU or Text Mode	
USB	USB 2.0 high speed compatible (-U Models)			
TCP/IP Functions*	FTP, SMTP, SSL, TCP, UDP		SSL, TCP, UDP	
Connectors	Antenna: 2 UFL (Cellular, Rx Diversity/MIMO) Mini SIM (2FF); 1.8V & 3V		Antenna: 2 UFL (Cellular, GNSS) Mini SIM (2FF); 1.8V & 3V	
Dimensions	3.150" x 1.375" (80.010 mm x 34.925 mm)			
Power Requirements				
Power Draw Serial Models @ 5 VDC	Sleep Mode: 20 mA Idle: 19 mA Max Power: 400 mA (average)	Sleep Mode: 23 mA Idle: 28 mA Max Power: 318 mA (average)	Sleep Mode: 6 mA Idle: 14 mA Max Power: 191 mA (average)	Sleep Mode: 9 mA Idle: 14 mA Max Power: 122 mA (average)
Power Draw USB Models @ 5 VDC	Sleep Mode: N/A Idle: 32 mA Max Power: 432 mA (average)	Sleep Mode: N/A Idle: 39 mA Max Power: 320 mA (average)	Sleep Mode: N/A Idle: 27 mA Max Power: 205 mA (average)	Sleep Mode: N/A Idle: 28 mA Max Power: 151 mA (average)
Input Power (USB Models)	5.0 VDC			
Input Power (Serial Models)	3.3 VDC or 5.0 VDC			
Environmental				
Operating Temperature	-40° C to +85° C (-40° F to +185° F)			
Storage Temperature	-40° C to +85° C (-40° F to +185° F)			
Relative Humidity	20% to 90% RH noncondensing			
Certifications				
EMC/Radio Compliance	FCC, IC	CE, FCC, IC, RCM, UKCA	CE, FCC, IC, RCM, UKCA	FCC, IC
Safety Compliance	UL/cUL/IEC 62368-1	UL/cUL/IEC 62368-1 UL/cUL/IEC 60950-1	UL/cUL/IEC 62368-1	UL/cUL/IEC 62368-1
Network Compliance	PTCRB			
Network Operator	AT&T	AT&T, Verizon, T-Mobile	AT&T, Verizon	AT&T, Verizon
Warranty	2-Years / www.multitech.com/legal/warranty			

* See device guides or AT command guides for additional information.

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ORDERING INFORMATION

SocketModem® Cell LTE Models

Model	Description	Region
MTSMC-L1G2D	LTE Cat 1 Embedded Cellular Modem w/Fallback & GNSS (Serial Interface)	Global
MTSMC-L1G2D-U	LTE Cat 1 Embedded Cellular Modem w/Fallback & GNSS (USB Interface)	Global
MTSMC-L4G1	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (Serial Interface)	Global
MTSMC-L4G1-U	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (USB Interface)	Global
MTSMC-L4N1	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (Serial Interface) (AT&T/Verizon)	Canada/ United States
MTSMC-L4N1-U	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (USB Interface) (AT&T/Verizon)	Canada/ United States
MTSMC-L4E1	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (Serial Interface)	European Union/ United Kingdom
MTSMC-L4E1-U	LTE Cat 4 Embedded Cellular Modem w/Fallback & GNSS (USB Interface)	European Union/ United Kingdom
MTSMC-LAT3	LTE Cat 1 Embedded Cellular Modem w/Fallback (Serial Interface) (AT&T)	Canada/ United States
MTSMC-LAT3-U	LTE Cat 1 Embedded Cellular Modem w/Fallback (USB Interface) (AT&T)	Canada/ United States
MTSMC-MNG6	LTE Cat M1 Embedded Cellular Modem w/GNSS (Serial Interface)	Global
MTSMC-MNG6-U	LTE Cat M1 Embedded Cellular Modem w/GNSS (USB Interface)	Global
MTSMC-MNG2	LTE Cat M1/NB/2G Embedded Cellular Modem w/GNSS (Serial Interface)	Global
MTSMC-MNG2-U	LTE Cat M1/NB/2G Embedded Cellular Modem w/GNSS (USB Interface)	Global
MTSMC-MNA1	LTE Cat M1 Embedded Cellular Modem w/GNSS (Serial Interface) (AT&T/Verizon)	Canada/ United States
MTSMC-MNA1-U	LTE Cat M1 Embedded Cellular Modem w/GNSS (USB Interface) (AT&T/Verizon)	Canada/ United States

Developer Kit

Model	Description	Region
MTUDK2-ST-CELL.R1	SocketModem® & Dragonfly Developer Kit (DB9 RS-232 Connector and USB) (Modem Sold Separately)	Global

Global models are approved for use in Australia, Canada, European Union, New Zealand, United Kingdom, and United States.

Ordering part numbers as listed are 50 packs. To order a single pack add a –SP to the end of the ordering part number. (i.e. MTSMC-L4N1-SP)

Go to www.multitech.com for detailed product model numbers.

Services & Warranty

MultiTech'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.

Technical Support Services

At MultiTech, 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 MultiTech representative or visit www.multitech.com/product-support

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MULTITECH®