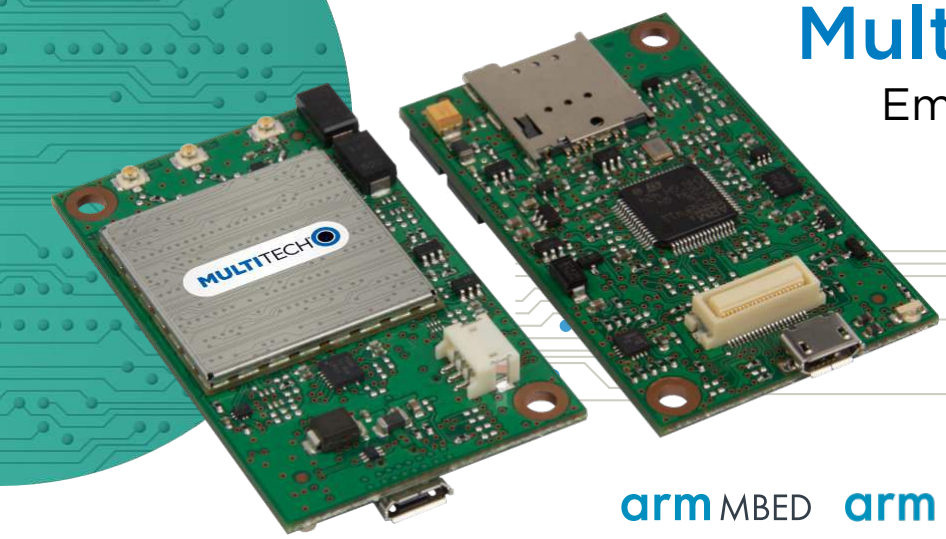
MULTITECH®
CREATE • CONNECT • COMMUNICATE

MultiTech Dragonfly™

Embedded Cellular Modem & SoM (System-on-Module)



arm MBED arm PELION

MultiTech Dragonfly™ embedded cellular modems and SoMs are fully certified and MNO approved, ready-to-integrate modules that offer developers the functionality of a programmable computing platform with the convenience of an onboard cellular radio all in one compact design. From a software perspective, Dragonfly is compatible with the Arm® Mbed™ programming platform allowing for rapid prototyping, development and deployment. With its integrated Cortex®-M4 processor, developers can host their application and have access to a full suite of interfaces for connecting sensors or other remote assets.

As the first Arm Mbed cellular SoM listed on mbed.org that is industry certified and deployment ready, applications can be written and compiled quickly online using developer friendly libraries, downloaded and hosted within the Dragonfly.

Dragonfly can be used as an embedded cellular SoM providing the maximum in design and application flexibility or it can be used as an embedded cellular modem requiring little or no modification to your existing design.

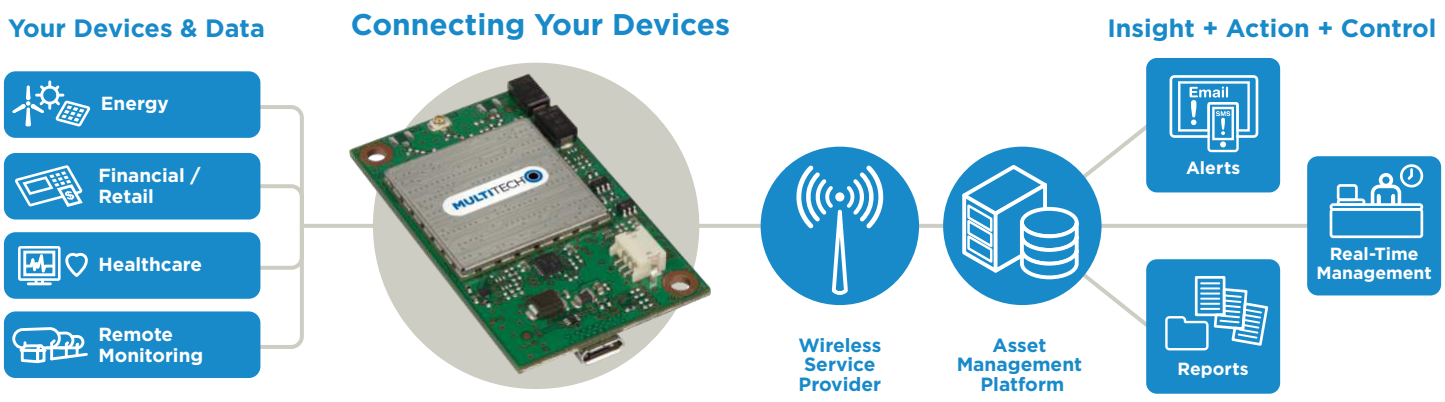
This powerful suite of hardware and software products greatly reduces your time to market and makes your Internet of Things (IoT) device a reality today.

BENEFITS

- End device certified by leading carriers
- 4G (Cat 4, Cat 1, Cat M1) and 3G models
- 4G and 3G global capable models available
- Developer friendly to integrate, quick to deploy and scale assets
- Long solution lifecycle reduces redesign time and cost

FEATURES

- Lightweight SoM ideal for most IoT applications
- Arm Pelion support for secure provisioning and management of your devices (MTQ-LSP3-B03)
- On-board GNSS or GPS for fast and accurate location fix (select models)
- Multiple I/O interfaces for connecting most any “Thing”
- Design in or retrofit



www.multitech.com/dragonfly

HIGHLIGHTS

Host Your Applications

As the first Arm® Mbed™ cellular SoM listed on mbed.org that is industry certified and deployment ready, applications can be written and compiled quickly online using developer friendly libraries, downloaded and hosted within the MultiTech Dragonfly. Decision making and control is distributed to the edge, enabling data to be more actionable without the heavy lift required to implement complex M2M middleware and security protocols needed to deploy a low touch install.

Design in or Retrofit

The Dragonfly can be used as an embedded cellular SoM providing the maximum in design and application flexibility or it can be used as an embedded cellular modem controlled through AT commands requiring little or no modification to your design. Connecting to the Dragonfly through its 40-pin board-to-board connector gives you access to all the programmable I/O interfaces. You can also connect to the Dragonfly using the industry standard micro USB port affording you the quickest time to market when your application only requires basic cellular connectivity.

SPECIFICATIONS

Models	MTQ-L4G1-B02	MTQ-LNA7-B02	MTQ-LEU7-B02	MTQ-LAT3-B01 / MTQ-LAT3-B02
Performance	LTE 3GPP Release 11 (Category 4; 150 Mbps peak downlink/50 Mbps peak uplink) with HSPA Fallback	LTE 3GPP Release 11 (Category 4; 150 Mbps peak downlink/50 Mbps peak uplink) with HSPA Fallback	LTE 3GPP Release 11 (Category 4; 150 Mbps peak downlink/50 Mbps peak uplink) with HSPA and GPRS Fallback	LTE 3GPP Release 9 (Category 1; 10 Mbps peak downlink/5 Mbps peak uplink) with HSPA Fallback
Frequency Band (MHz)	4G FDD: B1(2100), B2(1900), B3(1800), B4(AWS1700), B5(850), B7(2600), B8(900), B12/B13(700), B18(850), B19(850), B20(800), B25(1900), B26(850), B28(700) TDD: B38(2600), B39(1900), B40(2300), B41(2500) 3G: B1(2100), B2(1900), B4(AWS1700), B5(850), B6(800), B8(900), B19(850) 2G: B2(1900), B3(1800), B5(850), B8(900)	4G: B2(1900), B4(AWS1700), B5(850), B12(700), B13(700) 3G: B2(1900), B4(AWS1700), B5(850)	4G: B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28A(700) 3G: B1(2100), B8(900) 2G: B3(1800), B8(900)	4G: B12/B13(700), B5(850), B4(AWS1700), B2(1900) 3G: B5(850), B2(1900)
TCP/IP Functions	FTP, HTTP, SMTP, TCP, UDP, SSL			
GPS or GNSS Support	Yes		No	
Connectors	3 UFL (Cellular, Rx Diversity & GPS) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	3 UFL (Cellular, Rx Diversity & GPS) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	2 UFL (Cellular, Rx Diversity/ MIMO) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	2 UFL (Cellular, Rx Diversity/MIMO) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)
Host Processor	N/A			(B01) Cortex M4 (STM32F411RET) 512 Kbytes of Flash memory and 96 Kbytes of SRAM
I/O	1 x UART, 1 x HS USB			(B01) 1 x UART, 1 x HS USB, 1 x SPI, 1 x I2C, up to 6 analog inputs and up to 16 digital input/output (B02) 1 x UART, 1 x HS USB
Dimensions	58.4mm x 34.9mm (2.3 x 1.375 inches)			
Power Draw*	(B02) 5VDC; 562uA sleep/ power down mode, 27mA idle, 539mA max power	(B02) 5VDC; 8.6mA sleep/ power down mode, 28mA idle, 712mA max power	(B02) 5VDC; 9mA sleep/ power down mode, 792mA max power	(B01) 5VDC; 25mA sleep, 58mA idle, 540mA max power (B02) 5VDC; 25mA sleep, 38mA idle, 510mA max power
Input Voltage	3.3-5VDC			5VDC
Environmental				
Operating Temperature	-40° to +85° C			
Storage Temperature	-40° to +85° C			
Relative Humidity	20% to 90% RH, non-condensing			
Certifications				
EMC/Radio Compliance	FCC Part 15 Class B FCC Part 22, 24, 27 CE Mark, RED (EU) RCM (AU)	FCC Part 15 Class B FCC Part 22, 24, 27	CE Mark, RED (EU) RCM (AU)	FCC Part 15 Class B FCC Part 22, 24, 27
Safety	UL/cUL 60950-1 2nd ED, IEC 60950-1 2nd ED +Am.2		IEC60950-1 (EU)	UL/cUL 60950-1 2nd ED, IEC 60950-1 2nd ED +Am.2
Network	PTCRB		N/A	PTCRB
Carrier	AT&T, Verizon	AT&T, Verizon, T-Mobile†	EU Carriers	AT&T
Warranty	2-Years			

* See device guide for more information. †Voice must be deactivated by AT commands to use on T-Mobile network, contact MultiTech for details

MultiTech Connection Manager

A software solution designed to greatly simplify and ease the installation, configuration and management of cellularconnectivity in MultiTech USB and serial cellular modems that lack intelligence to manage these functions. Connection Manager ensures that IoT edge applications using cellular backhaul can always communicate to the Internet whenever needed by ensuring the cellular connection is always ready for transmission, ensuring the smooth operation of real-world IoT use cases. AT Commands, traditionally used to manage these functions, can prove time-consuming and difficult to the un-initiated. Connection Manager provides a much easier and faster method of managing USB and serial cellular modems to ensure persistent connectivity to the cellular network.

SPECIFICATIONS

Models	MTQ-LVW3-B01 / MTQ-LVW3-B02	MTQ-LSP3-B03 / MTQ-LSP3-B02	MTQ-MNA1-B01 / MTQ-MNA1-B02	MTQ-H5-B01 / MTQ-H5-B02
Performance	LTE 3GPP Release 9 (Category 1; 10 Mbps peak downlink/5 Mbps peak uplink) (No Fallback)	LTE 3GPP Release 10 (Category 1; 10 Mbps peak downlink/ 5 Mbps peak uplink)	LTE 3GPP Release 13 (Category M1; Up to 300 Kbps downlink & up to 375 Kbps uplink)	HSPA+
Frequency Band (MHz)	4G: B13(700), B4(AWS1700), B2(1900)	4G: B12(700), B5/25(850), B4(AWS1700), B2/25(1900), B25(1900+)	AT&T: B12(700), B4(AWS1700), B2(1900) Verizon: B13(700), B4(AWS1700)	3G: 850/900/AWS 1700/ 1900/2100 MHz 2G: 850/900/1800/1900 MHz
TCP/IP Functions	FTP, HTTP, SMTP, TCP, UDP, SSL			
GPS or GNSS Support	No	Yes (GNSS)		
Connectors	2 UFL (Cellular, Rx Diversity/MIMO) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	3 UFL (Cellular, Rx Diversity & GPS) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	2 UFL (Cellular, GPS) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)	3 UFL (Cellular, Rx Diversity & GPS) 1xMicro USB, 1x 40-Pin Board-to-Board, 1xMicro SIM (3FF)
Host Processor	(B01) Cortex M4 (STM32F411RET) 512 Kbytes of Flash memory and 96 Kbytes of SRAM	(B03) Cortex M4 (STM32F413RHT6) 1.5MB Flash, 512 Kbytes SRAM w/True Random Number Generator	(B01) Cortex M4 (STM32F411RET) 512 Kbytes of Flash memory and 96 Kbytes of SRAM	
I/O	(B01/B03) 1 x UART, 1 x HS USB, 1 x SPI, 1 x I2C, up to 6 analog inputs and up to 16 digital input/output (B02) 1 x UART, 1 x HS USB			
Dimensions	58.4mm x 34.9mm (2.3 x 1.375 inches)			
Power Draw*	(B01) 5VDC; 38mA sleep, 57mA idle, 462mA max power (B02) 5VDC; 26mA sleep, 37mA idle, 450mA max power	(B03) 5VDC; 8mA sleep, 55mA idle, 788mA max power (B02) 5VDC; 5.4mA sleep, 33mA idle, 634mA max power	(B01) 5VDC; 3.6mA sleep, 57mA idle, 195mA max power (B02)5VDC; 3.4mA sleep, 37mA idle, 176mA max power	(B01) 5VDC; 25mA sleep, 64mA idle, 635mA max power (B02) 5VDC; 36mA sleep, 42mA idle, 676mA max power
Input Voltage	5VDC			
Environmental				
Operating Temperature	-40° to +85° C			
Storage Temperature	-40° to +85° C			
Relative Humidity	20% to 90% RH, non-condensing			
Certifications				
EMC/Radio Compliance	FCC Part 15 Class B FCC Part 27			FCC Part 15 Class B, EN55022, EN55024 FCC Part 22, FCC Part 24, RSS 132, RSS 133, EN 301 511, EN 301 489-1, EN 301 489-7, EN 301 489-24
Safety	UL/cUL 60950-1 2nd ED, IEC 60950-1 2nd ED +Am.2			UL 60950-1 2nd ED, cUL 60950-1 2nd ED, EN 60950-1 2nd ED, AS/NZS 60950-1 2nd ED
Network	N/A		PTCRB	PTCRB
Carrier	Verizon	Sprint	AT&T/Verizon	AT&T
Warranty	2-Years			

* See device guide for more information.

ORDERING INFORMATION

MultiTech Dragonfly™

Model	Description	Region
MTQ-L4G1-B02	Embedded LTE Cat 4 Modem w/Fallback & GNSS	Global
MTQ-LNA7-B02	Embedded LTE Cat 4 Modem w/Fallback & GNSS (AT&T/Verizon)	US/Can
MTQ-LEU7-B02	Embedded LTE Cat 4 Modem w/Fallback	EU/AU
MTQ-LAT3-B01	LTE Cat 1 Embedded Cellular SoM w/Fallback (AT&T)	US/Can
MTQ-LAT3-B02	Embedded LTE Cat 1 Modem w/Fallback (AT&T)	US/Can
MTQ-LVW3-B01	LTE Cat 1 Embedded Cellular SoM (Verizon)	USA
MTQ-LVW3-B02	Embedded LTE Cat 1 Modem (Verizon)	USA
MTQ-LSP3-B03	LTE Cat 1 Embedded Cellular SoM w/GNSS (Sprint)	USA
MTQ-LSP3-B02	Embedded LTE Cat 1 Modem w/GNSS (Sprint)	USA
MTQ-MNA1-B01	LTE Cat M1 Embedded Cellular SoM w/GNSS (AT&T/Verizon)	US/Can
MTQ-MNA1-B02	Embedded LTE Cat M1 Modem w/GNSS (AT&T/Verizon)	US/Can
MTQ-H5-B01	HSPA+ Embedded Cellular SoM w/GPS	Global
MTQ-H5-B02	Embedded HSPA+ Modem w/GPS	Global

Developer Kit

Model	Description	Region
MTUDK2-ST-CELL	SocketModem® & Dragonfly Developer Kit	Global

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/support.go

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2020-12 • 86002177 •