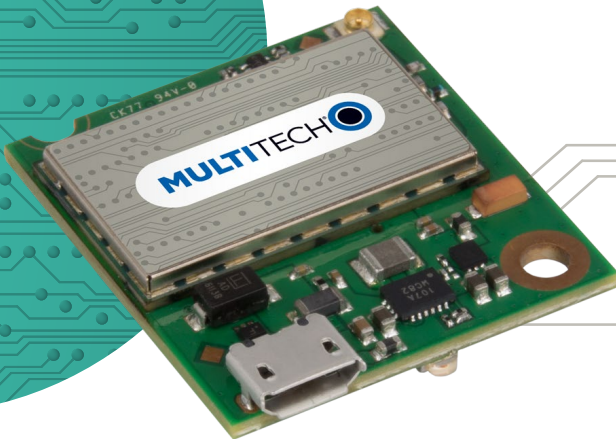


# MultiConnect<sup>®</sup> Dragonfly<sup>™</sup> Nano

Embedded Cellular SoM  
(System-on-Module)



**arm** MBED

The all new MultiConnect<sup>®</sup> Dragonfly<sup>™</sup> Nano embedded cellular SoM's are the industry's smallest form factor, end device approved devices that support a complete IoT operating system. These fully certified and MNO approved, ready-to-integrate LTE Cat M1 modules offer developers the functionality of a programmable computing platform with the convenience of an onboard cellular radio all in one very compact design. Dragonfly Nano is programmable using Arm<sup>®</sup> Mbed<sup>™</sup> allowing for rapid prototyping, development and deployment.

With its integrated Cortex<sup>®</sup>-M4 processor, developers can host their application and have access to a full suite of interfaces for connecting sensors or other remote assets. The Dragonfly Nano is over 50% smaller, maintains plug compatibility and uses the same 40-pin board to board connector found in the standard sized Dragonfly family of SoM's providing a full range of connectivity and carrier options.

## BENEFITS

- End device certified by leading carriers
- Low power modes extend life of battery powered devices
- Extended coverage means assets deep inside buildings are now reachable
- Long solution lifecycle reduces redesign time and cost
- Family of cellular options including several 4G, 3G and 2G models

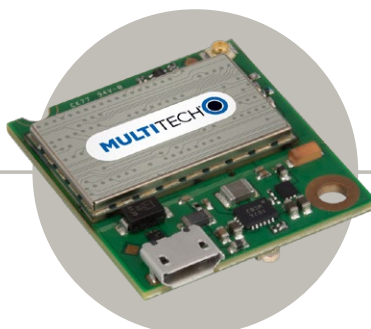
## FEATURES

- 3GPP Release 13 Extended Discontinuous Reception (eDRX)
- 3GPP Release 13 Extended Coverage
- 3GPP Release 12 Power Saving Mode (PSM)
- Arm<sup>®</sup> Mbed<sup>™</sup> OS enabled
- Multiple I/O interfaces for connecting almost any "Thing"

### Your Devices & Data



### Connecting Your Devices



### Insight + Action + Control



## HIGHLIGHTS

### Host Your Applications

As the first and only Arm® Mbed™ cellular SoM family 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 Nano. Decision making and control is distributed to the edge, enabling data to be more actionable without the heavy lift required to implement complex IoT middleware and security protocols needed to deploy a low touch install.

### Design in or Retrofit

The MultiConnect Dragonfly Nano 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 Nano 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 Nano using the industry standard micro USB port affording you the quickest time to market when your application only requires basic cellular connectivity.

### Power Saving Modes

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 that 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. (Note: Some power saving modes will be available in a future firmware release.)

## SPECIFICATIONS

| Model                 | MTQ-MAT2-B01<br>MTQ-MAT2-B02  | MTQ-MVW2-B01<br>MTQ-MVW2-B02 |
|-----------------------|---|------------------------------|
| Performance           | 3GPP Release 13 Cat M1 Half Duplex (Up to 375K bps downlink and uplink)*  |                              |
| Frequency Band (MHz)  | 700 MHz (B12), 850 MHz (B5), AWS1700 MHz (B4) and 1900 MHz (B2)   | 700 MHz (B13)                |
| TCP/IP Functions      | TCP, UDP, FTP, HTTP<br>HTTPS, FTPS, TLS (future firmware for MVW2 models)   |                              |
| Connectors            | 1 UFL (Cellular), 1xMicro USB, 1x 40-Pin Board-to-Board   |                              |
| Host Processor        | Cortex-M4 (STM32L471QG) 1 Mbyte Flash and 128 Kbyte SRAM (B01)  |                              |
| I/O                   | 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 (B01)<br>1 x UART, 1 x HS USB (B02) |                              |
| SMS                   | Mobile Terminate/Mobile Originate PDU / Text mode   |                              |
| Dimensions            | 28.96mm x 32.51mm (1.14 x 1.28 inches)  |                              |
| Power Draw            | TBD   |                              |
| Input Voltage         | 3.3-5VDC +/- 5%   |                              |
| Environmental         |   |                              |
| Operating Temperature | Operating Temperature -40° to +85° C  |                              |
| Storage Temperature   | Storage Temperature -40° to +85° C  |                              |
| Relative Humidity     | 20% to 90% RH, non-condensing   |                              |
| Certifications        |   |                              |
| EMC Compliance        | FCC Part 15 Class B   |                              |
| Radio Compliance      | FCC Part 22, 24, 27   | FCC Part 27                  |
| Safety                | UL/cUL 60950-1 2nd ED, IEC 60950-1 2nd ED +Am.2   |                              |
| Network               | PTCRB   | N/A                          |
| Carrier               | AT&T  | Verizon                      |
| Warranty              | 2-Years   |                              |

\* Actual performance speeds may be affected by a variety of attributes such as cell tower distance, data loads, packet sizes, etc.

## ORDERING INFORMATION

| Model        | Description                                  | Region |
|--------------|--|--------|
| MTQ-MAT2-B01 | Embedded LTE Cat M1 Cellular SoM (AT&T)      | USA    |
| MTQ-MAT2-B02 | Embedded LTE Cat M1 Cellular Modem (AT&T)    | USA    |
| MTQ-MVW2-B01 | Embedded LTE Cat M1 Cellular SoM (Verizon)   | USA    |
| MTQ-MVW2-B02 | Embedded LTE Cat M1 Cellular Modem (Verizon) | USA    |

Note: Model numbers as shown come packaged as 50-pack masters. For ordering samples or low volume production quantities we also make single packs available. Add a -SP to the end of the models above to order single packs (MTQ-Mxx-B0x-SP).

### Developer Kit

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

Go to [www.multitech.com](http://www.multitech.com) for detailed product model numbers.

Produced in the U.S. of U.S. and non-U.S. components. Features and specifications are subject to change without notice.

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## 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.

## Installation Support

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

## 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](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)  
Strata House  
264-270 Bath Road  
Harlington UB3 5JJ  
United Kingdom  
Tel: +(44) 118 959 7774  
Email: [sales@multitech.co.uk](mailto:sales@multitech.co.uk)  
[www.multitech.co.uk](http://www.multitech.co.uk)

