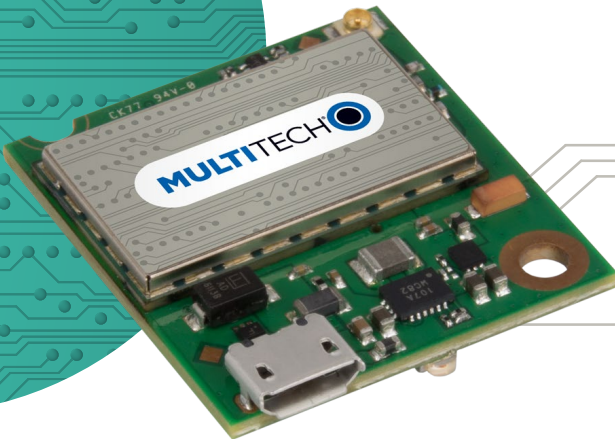# MultiConnect® Dragonfly™ Nano

Embedded Cellular SoM
(System-on-Module)

arm MBED

The all new MultiConnect® Dragonfly™ 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® Mbed™ 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. 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
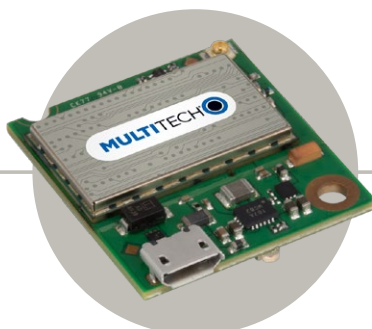- Family of cellular options including several 4G, 3G and 2G models

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

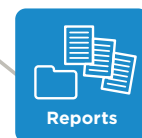## Your Devices & Data   Connecting Your Devices   Insight + Action + Control

- Energy
- Financial / Retail
- Healthcare
- Remote Monitoring

Wireless Service Provider

Asset Management Platform

Email
Alerts

Reports

Real-Time Management

www.multitech.com/DragonflyNano

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 MTQ-MAT2-B02	MTQ-MVW2-B01 MTQ-MVW2-B02
Performance	3GPP Release 13 Cat M1 Half Duplex (Up to 375K bps downlink and uplink)*	
Frequency Band (MHz)	700 MHz (B13)	700 MHz (B12), 850 MHz (B5), AWS1700 MHz (B4) and 1900 MHz (B2)
TCP/IP Functions	TCP, UDP, FTP, HTTP 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) 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 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.

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

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