

# MultiConnect<sup>®</sup> Conduit<sup>®</sup> AP

Access Point for LoRa<sup>®</sup> Technology  
EU868 for Europe



**MultiConnect<sup>®</sup> Conduit<sup>®</sup> AP** harnesses the power of the LoRaWAN<sup>™</sup> protocol to provide in-building penetration and connectivity to thousands of IoT assets. Easy to deploy, the Conduit AP it extends LoRa<sup>®</sup> connectivity in commercial buildings like hotels, convention centers, offices and retail facilities providing coverage in difficult to reach areas cell tower or rooftop deployments may not penetrate.

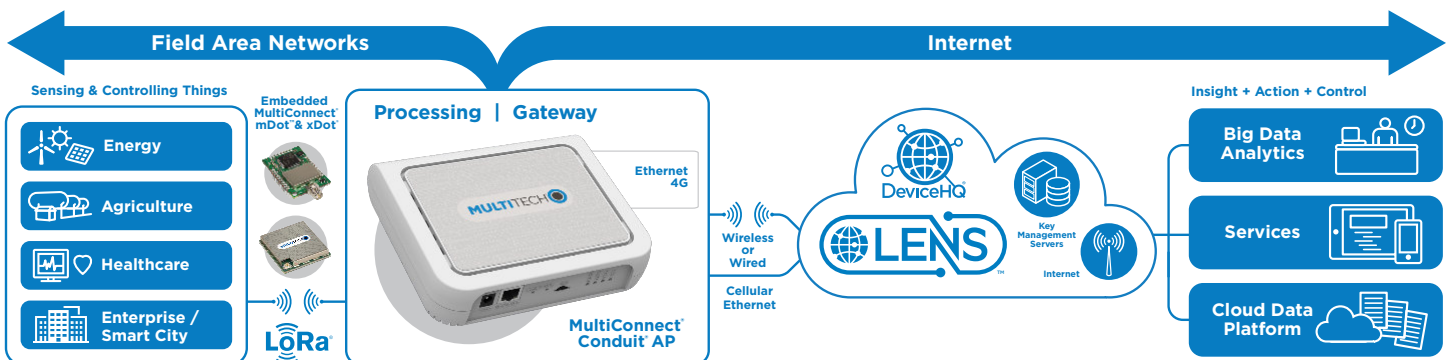
The Conduit AP offers a development environment for developers and IT professionals alike. The AEP (Application Enablement Platform) features an easy-to-use graphical interface set-up and includes a built-in LoRa Network Server and Packet Forwarder to connect locally clustered assets on a private LoRaWAN network directly to your choice of IoT data platforms. The AEP extends complex processing to the edge to reduce upstream communication and operational costs. The Conduit AP provides Ethernet IP backhaul or optional 4G-LTE IP backhaul.

## BENEFITS

- Provide improved service level agreements for LoRa
- Affordable LoRa connectivity in or around commercial buildings
- Ethernet and 4G-LTE interfaces for primary or secondary WAN
- Quick & easy to deploy
- Carrier approved

## FEATURES

- Ethernet RJ-45 10/100 BaseT for IP backhaul
- Optional 4G-LTE IP backhaul
- LoRa internal antenna for 868 MHz ISM band
- Built-in LoRa Network Server and Packet Forwarder



# HIGHLIGHTS

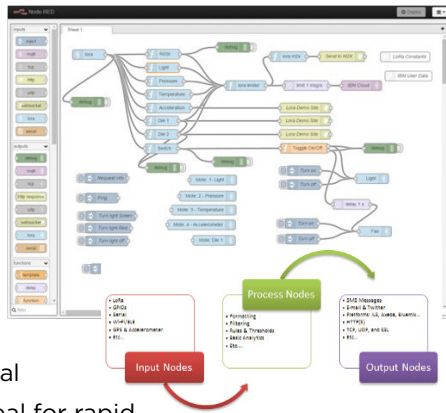
## Application Development Tailored to You

MultiConnect® Conduit® AP Access Point provides the IBM Node-RED graphical, drag-and-drop interface, offering IT professionals, integrators and developers alike, programming choice and capability to utilize the distributed intelligence capabilities of the Conduit. AEP models include the LoRa Network Server and Packet Forwarder to provide analytics on incoming data and provide more actionable outgoing data to our Cloud service partners like IBM Watson and Senet Network. Get started quickly with easy to follow recipes from our partners.

## Fast and Intuitive Programming with Node.js and Node-RED Technologies

Applications can be simply created and deployed by the click of a button based upon IBM's Node-RED visual development tool. Incredibly user-friendly, Node-RED

is an intuitive graphical programming tool ideal for rapid prototyping, designed for IT professionals to optimize and scale the edge behavior of their IoT network.



## Easily Deploy and Manage Assets Via DeviceHQ®

MultiTech DeviceHQ is the M2M industry's first IoT online application store to enable customers to easily deploy and scale applications to their connected devices. Drag-and-drop tools easily allow customers to create and manage applications for in-field assets. The DeviceHQ application store gives your business the power to innovate operations management and create value-added services.



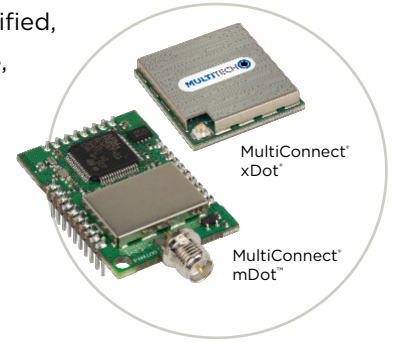
## Benefits

- “Low Touch” asset deployment reduces costs, complexity and time
- Easily scales to your network needs
- Browse and download a wide variety of custom applications tailored to your business needs
- Reduce truck-rolls using remote performance management and asset updates

# CONNECTING THE “THINGS”

## MultiConnect® mDot™ & xDot™

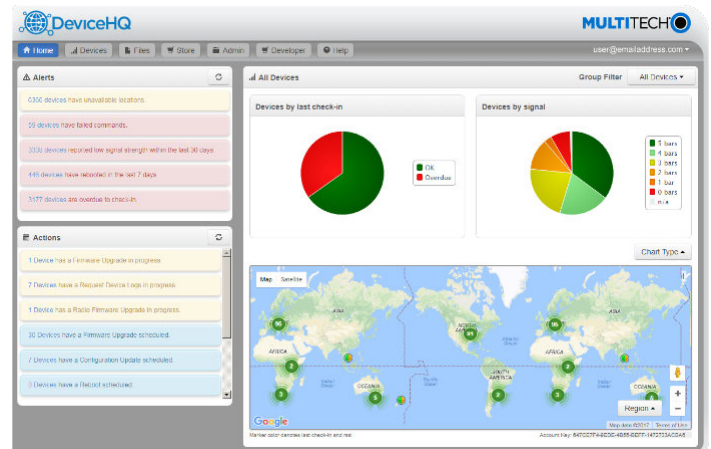
MultiConnect mDot and xDot are secure, regulatory-certified, Arm® Mbed™ programmable, low-power RF modules, providing long-range, low bit rate IoT data connectivity to sensors and actuators.



The mDot and xDot are LoRaWAN compliant, providing bi-directional data communication up to 10 miles line-of-sight and 2-3 miles in buildings, using the global sub-GHz ISM radio bands in North America, Europe, and the APAC regions.

The mDot was the first Arm Mbed platform listed on mbed.org that was deployment ready. The mDot supports applications written and compiled in the mbed online environment using developer friendly libraries. Decision making and control can be done at the edge, reducing the need to optimize RF performance and implement complex IoT middleware.

mDots and xDots bring intelligence, reduced complexity and a lower overall bill of material to the edge of the network while supporting a variety of interfaces to connect just about any battery-powered “thing”.



## HARDWARE SPECIFICATIONS

Models	MTCAP-L4E1-868	MTCAP-LEU1-868	MTCAP-868
Mobile Network Operator	European Network Operators	European Network Operators	Non-Cellular
Performance	4G-LTE Category 4	4G-LTE Category 3	N/A
Fallback	3G - HSPA+, 2G - GPRS		
Frequency Band (MHz)	4G: B3(1800), B7(2600), B20(800), B28A(700) 3G: B1(2100), B3(1800), B8(900) 2G: B3(1800), B8(900)	4G: B3(1800), B7(2600), B20(800) 3G: B1(2100), B3(1800), B8(900) 2G: B3(1800), B8(900)	
Packet Data (LTE FDD)	Up to 150 Mbps downlink, Up to 50 Mbps uplink	Up to 100 Mbps downlink, Up to 50 Mbps uplink	
LoRa Channel Plan	EU868		
Channel Capacity	8-channels (Half Duplex)		
LoRa Power Output	24.6 dBm maximum output power before antenna		
Input Voltage	5 VDC 2.5A input provided by 100-240 VAC 50/60 Hz 0.4A external adaptor		
Processor & Memory	ARM9 processor with 32-Bit ARM & 16-Bit Thumb instruction sets <ul style="list-style-type: none"> <li>• 400 MHz</li> <li>• 16K Instruction Cache</li> <li>• 16K Data Cache</li> <li>• 128X16M DDR RAM</li> <li>• 256 MB Flash Memory</li> </ul>		
Connectors			
Power	2.5mm, 5 Volt power jack		
Ethernet	RJ45 Ethernet jack (10/100 port)		
SIM	3FF Micro SIM		None
Antennas	No external antenna connections (All antennas are internal to chassis)		
Physical Description			
Dimensions (L x W x H)	165 (6.5) x 135 (5.3) x 36 (1.4) mm (in)		
Weight	1.4 (3) kg (lb)		
Chassis Type	PC-ABS (polycarbonate-ABS)		
Environmental			
Operating Temperature	0°C to +70°C°		
Storage Temperature	-40° to +85° C		
Relative Humidity	20% to 90%, non-condensing		
Certifications			
EMC Compliance	EN 55032 Class B EN 301 489-3 V2.1.1 EN 301 489-1 V2.2.0 EN 301-489-52 V1.1.0		EN 55032 Class B EN 301 489-3 V2.1.1 EN 301 489-1 V2.2.0
Radio Compliance	EN 300 220-2 V3.1.1 EN 300 328 V2.1.1 EN 301 511 V12.5.1 EN 301 908-1 V11.1.1 EN 301 902-2 V11.1.1 EN 301 908-13 V11.1.1 EN 62311		EN 300 220-2 V3.1.1 EN 300 328 V2.1.1 EN 62311
Safety	IEC 60950-1 , IEC 62368-1		
Mobile Network Operator Approvals	GCF Certified Cell Module		N/A
Quality	MIL-STD-810G: High Temp, Low Temp, Random Vibration. SAE J1455: Transit Drop & Handling Drop, Random Vibration, Swept-Sine Vibration. IEC68-2-1: Cold Temp. IEC68-2-2: Dry Heat		

\* Operating temperature excluding power supply. Power supply UL listed at 40° C.

## SOFTWARE SPECIFICATIONS

### AEP

- Enhanced closed-source embedded Linux platform
- Node-RED application development environment
- Graphical web interface for configuration and management
- Seamless integration with DeviceHQ, MultiTech's device management platform
- LoRa network server
- LoRa Packet Forwarder
- Cellular connection management
- Dynamic DNS
- Secure firewall with NAT and port forwarding
- Static Routing
- Open VPN
- Remote Access
- Configuration backup and restore
- Easy firmware upgrade through graphical web interface
- System and network statistics
- Tool chain for creating custom images
- WAN connection via Ethernet or cellular
- Cellular PPP, DHCP client and server
- Firewall configuration via iptables
- Language support: Python, C, C++, Javascript
- Package upgrade support: Java, Perl, Ruby, Mono C#
- opkg package manager with limited package feed
- Basic router functionality with built-in Linux

## ORDERING INFORMATION

### MultiConnect Conduit AP 4G LTE Models

Model	Description	Region
MTCAP-L4E1-868-001A	LTE Cat 4 AEP Programmable Access Point w/EU/UK Accessory Kit (Europe)	Euro/GB
MTCAP-LEU1-868-001A	LTE Cat 3 AEP Programmable Access Point w/EU/UK Accessory Kit (Europe)	Euro/GB

### MultiConnect Conduit AP Ethernet-Only Models

Model	Description	Region
MTCAP-868-001A	Non-cellular AEP Programmable Access Point w/EU/UK Accessory Kit (Europe)	Euro/GB

Kit Contents for all models include Access Point, AC power supply with regional-specific power blades, RJ45 Ethernet cable, mounting bracket, and Quick Start Guide.

## RECOMMENDED ACCESSORIES

### MultiConnect mDot

Model	Description	Region
MTDOT-868-X1-SMA	868 MHz XBee LoRa SMA	Euro
MTDOT-868-X1P-SMA	868 MHz XBee LoRa SMA w/Programming Header	Euro
MTDOT-868-X1-UFL	868 MHz XBee LoRa UFL	Euro
MTDOT-868-M1-UFL	868 MHz SMT LoRa UFL	Euro
MTDOT-868-M1-TRC	868 MHz SMT LoRa RF Pad	Euro

### MultiConnect xDot

Model	Description	Region
MTXDOT-EU1-A00-1	868 MHz LoRa Module UFL/TRC (Single Pack)	EMEA

Go to [www.multitech.com](http://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](http://www.multitech.com/support.go)

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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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