MultiTech Conduit® AP

Access Point for LoRa® Technology US915 for North America

LoRa Alliance®

MultiTech Conduit® AP harnesses the power of the LoRaWAN® protocol to provide in-building penetration and connectivity to thousands of IoT assets. Easy to deploy, the Conduit AP it extends LoRa® 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. mPower™ Edge Intelligence 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 mPower extends complex processing to the edge to reduce upstream communication and operational costs. The Conduit AP provides Ethernet 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
- Models available with external LoRa antenna for improved performance
- Built-in LoRa Network Server and Packet Forwarder

www.multitech.com/conduitap
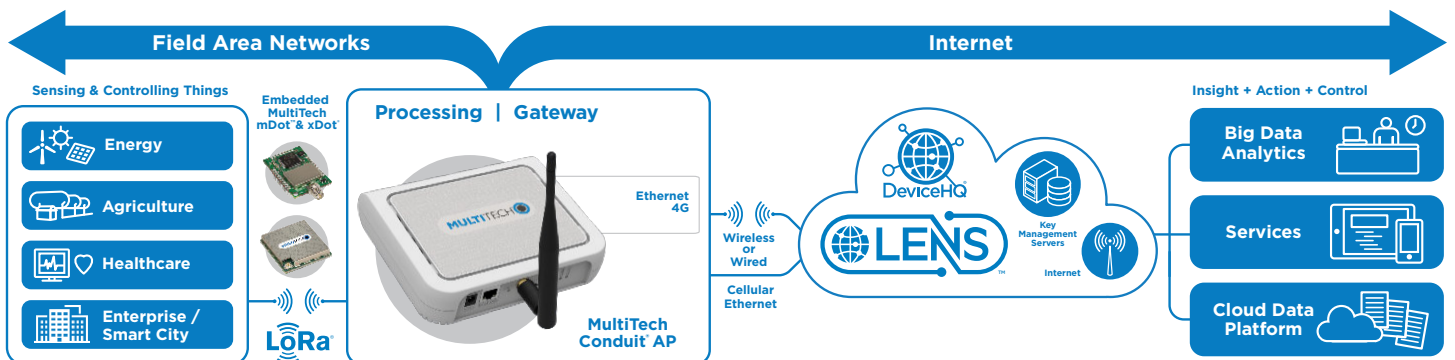
mPower
EDGE INTELLIGENCE

Programmable embedded software provides enhanced security and enables task execution at the edge for reduced latency and cost optimization.

mPower™ Edge Intelligence is a new embedded software offering, building on its popular application enablement platform, to deliver programmability, network flexibility, enhanced security and manageability for scalable Industrial Internet of Things (IIoT) solutions.

mPower is the unification and evolution of well-established MultiTech smart router and gateway firmware platforms. In addition to ongoing support of the current feature-sets, gateway customers can enjoy the additional security features currently available on the MultiConnect® rCell 100 Series.

mPower simplifies integration with a variety of popular upstream IoT platforms to streamline edge-to-cloud data management and analytics, while also providing the programmability and processing capability to execute critical tasks at the edge of the network to reduce latency; control network and cloud services costs, and ensure core functionality – even in instances when network connectivity may not be available.

In response to evolving customer security requirements, mPower incorporates a host of new security features including signed firmware validation, enhanced firewall and VPN settings, secure authentication and more.

mPower software specifications can be found **here**.

CONNECTING THE "THINGS"

MultiTech mDot™ & xDot®

MultiTech 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.

MultiTech xDot®

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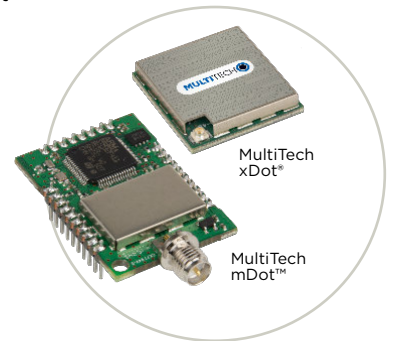
The mDot and xDot are LoRaWAN compliant, providing bi-directional data communication up to 10 miles line-of-sight and 2-3 miles in buildings, using the global sub-GHz ISM radio bands in North America, Europe, and the APAC regions.

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".

Easily Deploy and Manage Assets Via DeviceHQ®

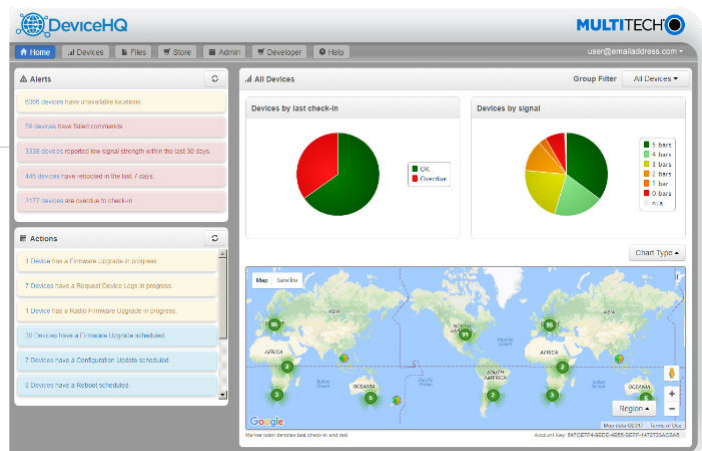MultiTech DeviceHQ is the M2M industry's first IoT online application store to enable customers to easily deploy and scale applications to their connected devices. Drag-and-drop tools easily allow customers to create and manage applications for in-field assets. The DeviceHQ application store gives your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

HARDWARE SPECIFICATIONS

Models	MTCAP-LNA3-915	MTCAP-LNA3-915	MTCAP-LSP3-915	MTCAP-915
Mobile Network Operator	AT&T	Verizon	Sprint	Non-Cellular
Performance	4G-LTE Category 1			N/A
Fallback	3G - HSPA+	No Fallback	No Fallback	
Frequency Band (MHz)	4G: B2(1900), B4(AWS1700), B5(850), B12/B13(700) 3G: B2(1900), B5(850)	4G: B2(1900) B4(AWS1700), B13(700)	4G: B2/B25(1900), B4(AWS1700), B5/B26(850), B12(700)	
Packet Data (LTE FDD)	Up to 10 Mbps downlink, Up to 5 Mbps uplink			
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 • 400 MHz • 16K Data Cache • 256 MB Flash Memory • 16K Instruction Cache • 128X16M DDR RAM			
LoRa Specifications				
LoRa Frequency Band	915 MHz			
LoRa Channel Plan	US915			
Channel Capacity	8-channels (half-duplex)			
LoRa Power Output	24.6 dBm maximum output power before antenna			
Connectors				
Power	2.5mm, 5 Volt power jack			
Ethernet	RJ45 Ethernet jack (10/100 port)			
SIM	3FF Micro SIM			N/A
Antennas (-001A Models)	No antenna connections. All antennas are internal to chassis			
Antennas (-041A Models)	LoRa: reverse polarity female SMA Cellular: No antenna connection, internal only			
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° to +70°C	0° to +70°C	0° to +65°C	0° to +70°C
Storage Temperature	-40° to +85° C			
Relative Humidity	20% to 90%, non-condensing			
Certifications				
EMC Compliance	US: FCC Part 15 Class B. Canada: ICES-003 Class B			
Radio Compliance	US: FCC Part 22,24,27 / Canada: ISED			
Safety	UL/cUL 60950-1 2nd Ed.			
Network	PTCRB, AT&T Pending: T-Mobile, Rogers, Bell Mobility, Telus	Verizon	Sprint	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 40C.

SOFTWARE SPECIFICATIONS

mPower

- 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

MultiTech Conduit® AP 4G LTE Models

Model	Description	Region
MTCAP-LNA3-915-041A	LTE Cat 1 mPower Programmable Access Point 8-channel, 915 MHz w/external LoRa antenna and US Accessory Kit* (AT&T & Verizon)	NAM
MTCAP-LNA3-915-001A	LTE Cat 1 mPower Programmable Access Point 8-channel, 915 MHz w/internal LoRa antenna and US Accessory Kit* (AT&T & Verizon)	NAM
MTCAP-LSP3-915-041A	LTE Cat 1 mPower Programmable Access Point 8-channel, 915 MHz w/external LoRa antenna and US Accessory Kit* (Sprint)	US

MultiTech Conduit® AP Ethernet Only Models

Model	Description	Region
MTCAP-915-041A	Ethernet Only mPower Programmable Access Point 8-channel, 915 MHz w/ external LoRa antenna and US Accessory Kit*	NAM
MTCAP-915-001A	Ethernet Only mPower Programmable Access Point 8-channel, 915 MHz w/ internal LoRa antenna and US Accessory Kit*	NAM

* US Accessory Kit includes power supply with NAM blade, 6 ft. RJ45 Ethernet cable, external LoRa antenna (-041 models only), mounting bracket and Quick Start Guide.

RECOMMENDED ACCESSORIES

MultiTech mDot™

Model	Description	Region
MTDOT-915-X1-SMA	915 MHz X1 LoRa SMA	NAM
MTDOT-915-X1P-SMA	915 MHz X1 LoRa SMA w/Programming Header	NAM
MTDOT-915-X1-UFL	915 MHz X1 LoRa UFL	NAM
MTDOT-915-M1-UFL	915 MHz SMT LoRa UFL	NAM
MTDOT-915-M1-TRC	915 MHz SMT LoRa RF Pad	NAM

MultiTech xDot®

Model	Description	Region
MTXDOT-NA1-A00-1	915 MHz LoRa Module UFL/TRC (Single Pack)	NAM

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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