MultiConnect® Conduit™ AP

Access Point for LoRa® Technology
LoRaWAN™ to IP Border Gateway

LoRa Alliance™

MultiConnect® Conduit™ AP Access Point for LoRa® Technology

The MultiConnect® Conduit™ AP harnesses the power of the LoRaWAN™ protocol to provide deep in-building penetration and connectivity to thousands of IoT assets. Easy to deploy thanks to integrated antennas, it can be mounted on walls or ceilings to extend 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.
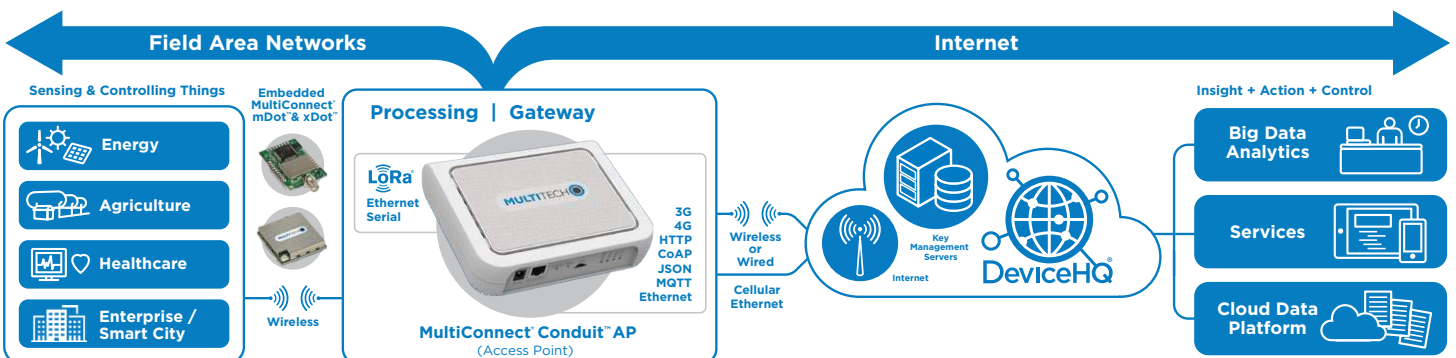
The Conduit AP offers two development environments for developers and users alike. For advanced developers, the mLinux, Yocto Linux BSP integrates directly to a cloud-based LoRaWAN Network Server, enterprise data center or public operator's core network. While the AEP features an easy-to-use graphical interface set-up and includes a built-in LoRa Network Server 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. Either way, the access point provides your choice of 4G-LTE or Ethernet IP backhaul.

BENEFITS

- Provide Improved Service Level Agreements for LoRa
- Affordable LoRa connectivity in or around commercial buildings
- Configurable Ethernet and 4G-LTE interfaces for Primary or Secondary WAN
- Quick & easy to deploy
- Certified & carrier approved

FEATURES

- 4G-LTE with 2x2 MiMo
- LoRa Omni-Directional internal antenna with +2 dBi gain for 868/915 MHz ISM band
- Ethernet RJ-45 10/100 BaseT for IP backhaul
- Support for maximum 27dBm Transmitter Power Output
- Optional built-in LoRa Network Server

Field Area Networks — Internet

Sensing & Controlling Things: Energy, Agriculture, Healthcare, Enterprise / Smart City — Wireless

Embedded MultiConnect® mDot™ & xDot™

Processing | Gateway — LoRa® Ethernet Serial

MultiConnect® Conduit™ AP (Access Point)

3G 4G HTTP CoAP JSON MQTT Ethernet — Wireless or Wired Cellular Ethernet

Key Management Servers — Internet — DeviceHQ®

Insight + Action + Control: Big Data Analytics, Services, Cloud Data Platform

www.multitech.com/conduitap

HIGHLIGHTS

Application Development Tailored to You

MultiConnect® Conduit™ AP Access Point provides both the IBM Node-RED graphical, drag-and-drop interface and mLinux development environments, offering IT professionals, integrators and developers alike, programming choice and capability to utilize the distributed intelligence capabilities of the Conduit, with optional built in LoRa Network Server 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.

SPECIFICATIONS

Model	MTCAP-Lxxx		
	AT&T	**Verizon**	**Europe**
Cellular Connection	Dual-mode LTE CAT-1		LTE CAT-3
	with fallback to 3G	(No fallback)	with HSPA+ 42/GPRS fallback
Cellular Frequency Band (MHz)	LTE bands 2, 5 and 12, plus 3G bands 2 and 5	LTE bands 4 and 13	LTE 4G bands B3, B7, B20, plus 3G bands B5, B8 and B1
Packet Data	10 Mbps peak downlink / 5 Mbps peak uplink		100 Mbps peak downlink / 50 Mbps peak uplink
Processor & Memory	ARM9 processor with 32-Bit ARM & 16-Bit Thumb instruction sets • 400 MHz • 16K Data Cache • 16K Instruction Cache • 256 MB DDR RAM • 256 MB Flash Memory		
LoRa Radio Frequency	902 -928 MHz ISM LoRa Digital Spread Spectrum Radio		863 - 870 MHz ISM LoRa Digital Spread Spectrum Radio
Input Power	100-240 VAC 50/60 Hz 0.4A External adaptor to 5 VDC 2.5A input		
Power RF Output			
Max Transmitter Power Output	27 dBm maximum output power before antenna		
Integral Antenna Systems	Cellular (diversity) and LoRa		
Connectors			
Ethernet	RJ-45 Ethernet 10/100 port		
SIM	3FF Micro SIM		
Physical Description			
Dimensions (LxWxH)	165 x 133 x 32 mm		
Weight	1.36 kg		
Chassis Type	PC-ABS		
Environmental			
Operating Temperature	-10° to +60° C*		
Storage Temperature	-40° to +85° C		
Relative Humidity	20% to 90%, non-condensing		
Certifications			
EMC Compliance	US: FCC Part 15 Class B. EU: EN 55022 Class B, EN 301 489-3 V1.6.1 (2013-08), EN 301 489-7 V1.3.1 (2005-11), EN 301 489-1 V1.9.2 (2011-09), EN 301 489-24 V1.5.1 (2010-10). Canada: ICES-003		
Radio Compliance	FCC Part 22,24,27 EN62311, EN301 511, EN301 908-1-2, EN301 908-1-13, EN300-220		
Safety	UL/cUL 60950-1 2nd Ed., IEC 60950-1 2nd Ed AM2		
Network Approvals	PTCRB, GCF certified Cell Module, AT&T, Verizon		
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		

SOFTWARE SPECIFICATIONS

mLinux

Open source embedded Linux distro based on the Yocto Project

Tool chain for creating custom images

WAN connection via Ethernet or cellular

Cellular PPP, DHCP client and server

AEP

Enhanced closed source embedded Linux platform

LoRa network server & packet forwarder

WAN Connection

Cellular PPP, Dynamic DNS, DHCP Server/Client

WAN connection via Ethernet or cellular

LAN/WAN Security

Firewall configuration via iptables

Out of the box support for C, C#, C++, Java, Perl, Python, Javascript, Node.js, Ruby

Lighttpd web server

Secure firewall with NAT and port forwarding

Static routing

Node-RED integration

Built-in Node-RED application development environment, Node modules for LoRa

Language Support

C, C++, Python, Javascript, Node.js, bash

opkg package manager with limited package feed

Basic router functionality built-in with Linux

Four configurable LEDs

Router/Modem management

Graphical web interface for configuration and management

Remote Access

Configuration backup & restore

Easy firmware upgrade through graphical web interface

Seamless integration with DeviceHQ®, MultiTech's device management platform

System and network statistics

ORDERING INFORMATION

4G LTE Models

Model	Description	Region
MTCAP-LNA3-915-001L	LTE Cat 1 mLinux Programmable Access Point w/US Accessory Kit (AT&T - Verizon Dual mode cell)	US
MTCAP-LNA3-915-001A	LTE Cat 1 AEP Programmable Access Point w/US Accessory Kit (AT&T - Verizon Dual mode cell)	US
MTCAP-LEU1-868-001L	LTE Cat 3 mLinux Programmable Access Point w/EU/UK Accessory Kit (Euro cell)	EMEA
MTCAP-LEU1-868-001A	LTE Cat 3 AEP Programmable Access Point w/EU/UK Accessory Kit (Euro cell)	EMEA

Non-cellular Models

Model	Description	Region
MTCAP-915-001L	Ethernet mLinux Programmable Access Point w/US Accessory Kit	US
MTCAP-915-001A	Ethernet AEP Programmable Access Point w/US Accessory Kit	US
MTCAP-868-001L	Ethernet mLinux Programmable Access Point w/EU/UK Accessory Kit	EMEA
MTCAP-868-001A	Ethernet AEP Programmable Access Point w/EU/UK Accessory Kit	EMEA

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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