MultiConnect® Conduit™ IP67 Base Station

IP67 Conduit for Outdoor LoRa® Deployments

LoRa Alliance™

MultiConnect® Conduit™ IP67 Base Station is a ruggedized IoT gateway solution, specifically designed for outdoor LoRa® public or private network deployments. This highly scalable and certified IP67 solution is capable of resisting the harshest environmental factors including moisture, dust, wind, rain, snow and extreme heat, supporting LoRaWAN™ applications in virtually any environment. The enhanced MultiConnect Conduit IP67 solution can support thousands of LoRaWAN certified end nodes, including the MultiConnect® mDot™* and xDot™*. This flexible solution provides durable, low-power, wide area connectivity in support of M2M and IoT applications for both LoRa service providers and individual enterprises wanting to expand their LoRa network coverage.

Designed for easy deployment, the solution includes a MultiConnect Conduit with a LoRa MultiConnect® mCard™, IP67 enclosure, LoRa antenna to improve outdoor range and provides a choice of 4G-LTE or Ethernet backhaul options. It can be deployed as part of an existing telecommunications tower, individual stand or wall mount.

*Represents ideal network configuration and equipment set up. Results vary depending on payload amount, transmission frequency, spreading factor used, as well as terrain, RF interference and obstruction type (e.g., metal, cement, etc.)

BENEFITS

- Greatly expands LoRa network coverage

- External antenna increases LoRa connectivity to remote assets

- Improved design enhancing thermal performance and easy external port access to SIM and USB connectors

FEATURES

- ISM band scanning for optimum LoRa performance

- Listen Before Talk operating protocol

- GNSS for location coordinate information

- 27 dBm support for European region

- Certified for Europe 868 MHz, North American 915 MHz ISM bands

www.multitech.com/IP67

IP67 BASE STATION POWERED BY CONDUIT - HIGHLIGHTS

Applications

The MultiConnect Conduit IP67 Base Station is used in a wide variety of applications such as energy, agriculture and smart cities and supports both public and private LoRa networks. Because it is certified and carrier approved, customers are able to quickly deploy with LoRa and cellular connectivity to realize new revenue streams, reduced operational costs or improved service offering.

Comprehensive Service and Support

The MultiTech commitment to service means we provide a two year product warranty and service that includes free on-line technical support, 24 hour website, and FTP support.

MULTICONNECT CONDUIT HIGHLIGHTS

Application Development Tailored to You

The Conduit IP67 Base Station 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.

For the Advanced Developer –
Open mLinux Development Environment

With a completely open Linux development environment, our mLinux distribution is based on the Open Embedded/Yocto project; providing hundreds of open source packages and extensive language support.

This development path is recommended for those wanting to port existing applications, who have strong language preferences, or who need complete firmware control.

The mLinux Distribution Includes:

- Operating System: Linux 3.12 Kernel, Yocto 1.6
- Language Support: Java, Ruby, Perl, Python, C/C++, PHP, C# and JavaScript
- Packages: SQLite (Database), Ligttpd (Web Server), BusyBox (Core Utilities)

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.
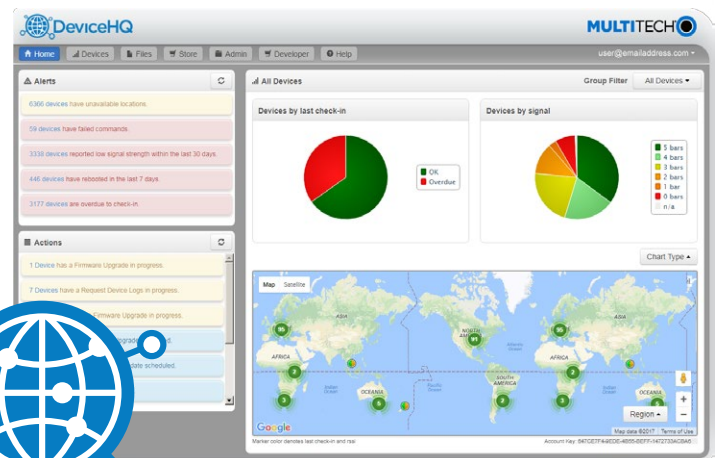
Benefits

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

IP67 BASE STATION SPECIFICATIONS

| Model	MTCDTIP-Lxxx		
Cellular Options	LTE 3GPP Release 9 (100 Mbps peak downlink/50 Mbps peak uplink)		
	AT&T/T-Mobile	Verizon	Europe
	with HSPA+ 21/GPRS fallback	(No fall back)	with HSPA+ 42/GPRS fallback
Frequency Bands (MHz)	4G: 700(B17)/850(B5)/ AWS1700(B4)/1900(B2) 3G: 850(B5)/1900(B2) 2G: 850/1900	700(B13)/AWS1700(B4)	4G: 800(B20)/ 1800(B3)/2600(B7) 3G: 850(B5)/ 900(B8)/2100(B1) 2G: 900/1800
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		
Packet Data	Up to 100 Mbps downlink, Up to 50 Mbps uplink		
Radio Frequency LoRa	LoRa 868 or 915 MHz – a proprietary Digital Spread Spectrum technique		
Storage	Micro SD		
Input Voltage	Power over Ethernet (PoE) 48Vdc 25W compliant to IEEE802.3af		
Connectors			
Ethernet	1 RJ-45 Ethernet 10/100 port (PoE)		
Serial	1 Debug Serial: USB Micro-B		
Antenna	Cell 3dBi (Qty2), LoRa 3dBi (Qty1), GPS (Qty 1)		
SIM	SIM/USIM		
Physical Description			
Dimensions (LxWxH)	262 mm x 91 mm x 257 mm		
Weight	2.75 kg		
Chassis Type	IP67 Rated, Aluminum		
Environmental			
Operating Temperature	-40° 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. EU: EN 55022 Class B, EN 55024. Canada: ICES-003		
Radio Compliance	FCC 15.247, IC RSS-210, EU EN 300 220		
Safety	UL 60950-1 2nd Ed., cUL 60950-1 2nd Ed., IEC 60950-1 2nd Ed		
Network Approvals	PTCRB, GCF certified module, AT&T, T-Mobile Pending: Rogers, Bell, Telus, Verizon & Sprint		
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		

10.106 Inches
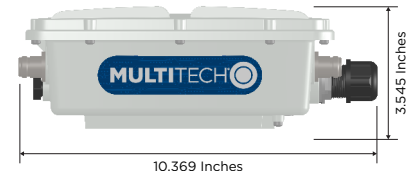
3.545 Inches

10.369 Inches
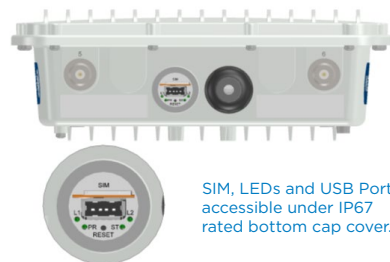
SIM, LEDs and USB Port accessible under IP67 rated bottom cap cover.

*UL Listed @ 40° C, limited by AC power supply. UL Recognized @ 70° C when used with the fused DC power cable, part number FPC-532-DC. Installation in outdoor locations or ambient temperature above 40° C or 70° C has not been evaluated by UL. UL Certification does not apply or extend to use in outdoor applications. Optional power must be UL Listed ITE power supply marked LPS or Class 2 rated 12VDC, 5A. Certification does not apply or extend to voltages outside certified range, and has not been evaluated by UL for operating voltages beyond tested range.

MULTICONNECT CONDUIT SOFTWARE SPECIFICATIONS

mLinux

Open source embedded Linux distro based on the Yocto Project

Tool chain for creating custom images

LoRa network server & packet forwarder

WAN connection via Ethernet or cellular

Cellular PPP, DHCP client & server

Firewall configuration via iptables

MTAC-LORA

Full root console access via SSH and serial debug port

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

opkg package manager with limited package feed

Basic router functionality built-in with Linux

Four configurable LEDs

Software configurable USB device port

Lighttpd web 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

Secure firewall with NAT and port forwarding

Static routing

Node-RED integration

Built-in Node-RED application development environment

Node modules for MTAC-LORA

Language Support

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

Router/Modem management

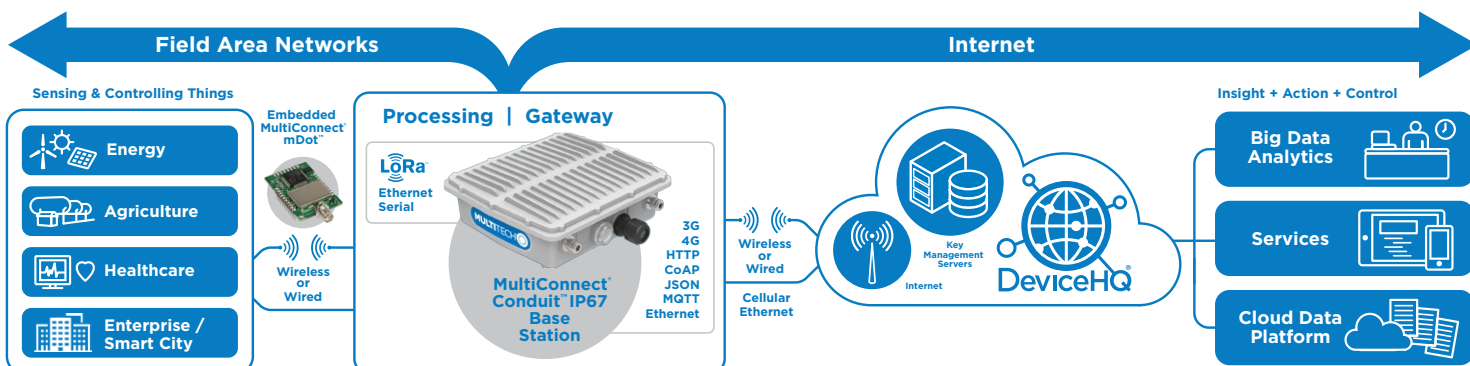Graphical web interface for configuration and management

Remote Access

Configuration backup & restore

Easy firmware upgrade through web interface

Seamless integration with DeviceHQ, MultiTech's device management platform

System and network statistics

WHAT'S INCLUDED WITH YOUR IP67 BASE STATION AND ACCESSORY KIT?

MultiConnect Conduit IP67 Base Station

The IP67 Base Station includes the following:

- 1 - MultiTech Conduit IP67 Gateway with MTAC-LORA mCard installed

- 1 - Mounting Bracket Kit with screws and hose clamp (can mount to pole, wall, tower)

- 1 - LoRa IP67-rated antenna

- 2 - Cellular antennas (if equipped with Cell Backhaul)

- 1 - GNSS antenna

- 1 - Installation guide for setting up IP67 chassis and inserting SIM card

Mounting Options
(Optional accessories shown)

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

ORDERING INFORMATION - MULTICONNECT® CONDUIT™ IP67 BASE STATION

Model	Description	Region
MTCDTIP-266L-868	Ethernet mLinux Programmable Conduit IP67 Base Station GNSS w/Accessory Kit	Europe
MTCDTIP-266A-868	Ethernet Application Enablement Conduit IP67 Base Station GNSS w/Accessory Kit	Europe
MTCDTIP-266L-915	Ethernet mLinux Programmable Conduit IP67 Base Station GNSS w/Accessory Kit	NAM
MTCDTIP-266A-915	Ethernet Application Enablement Conduit IP67 Base Station GNSS w/Accessory Kit	NAM
MTCDTIP-LEU1-266L-868	LTE mLinux Programmable Conduit IP67 Base Station GNSS w/Accessory Kit	Europe
MTCDTIP-LEU1-266A-868	LTE Application Enablement Conduit IP67 Base Station GNSS w/Accessory Kit	Europe
MTCDTIP-LAT1-266L-915	LTE mLinux Programmable Conduit IP67 Base Station GNSS w/Accessory Kit (AT&T)	US/Canada
MTCDTIP-LAT1-266A-915	LTE Application Enablement Conduit IP67 Base Station GNSS w/Accessory Kit (AT&T)	US/Canada
MTCDTIP-LVW2-266L-915	LTE mLinux Programmable Conduit IP67 Base Station GNSS w/Accessory Kit (Verizon)	US
MTCDTIP-LVW2-266A-915	LTE Application Enablement Conduit IP67 Base Station GNSS w/Accessory Kit (Verizon)	US
MTCDTIP-LEU1-266A-915*	LTE Application Enablement Conduit IP67 Base Station, GNSS w/Accessory Kit	Global
MTCDTIP-LEU1-266L-915*	LTE mLinux Programmable Conduit IP67 Base Station, GNSS w/Accessory Kit	Global

*Australia/New Zealand certification pending
Go to www.multitech.com for detailed product model numbers.

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