

MultiTech Conduit[®] IP67 Base Station

IP67 Conduit for Outdoor LoRa[®] Deployments
AS923 for Japan



MultiTech Conduit[®] IP67 Base Station is a ruggedized IoT gateway solution, specifically designed for outdoor LoRa[®] public or private network deployments. This product has been specially created for the Japanese market and features support for the AS923 MHz channel plans as well as the NTT Docomo and Softbank networks. It is a highly scalable and certified IP67 solution 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 Conduit IP67 solution can support thousands of LoRaWAN certified end nodes, including the MultiTech 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 MultiTech Conduit[®] with a LoRa MultiTech mCard[™], IP67 enclosure, LoRa antenna to improve outdoor range and Ethernet or optional 4G-LTE backhaul. It can be deployed as part of an existing telecommunications tower, individual stand or wall mount.

BENEFITS

- Greatly expands LoRa network coverage
- External antenna increases LoRa connectivity to remote assets
- Low-cost, high quality support for outdoor IoT applications

FEATURES

- ISM band scanning for optimum LoRa performance
- Listen Before Talk operating protocol
- GNSS for location coordinate information
- 1 PPS interface to facilitate LoRa packet time-stamping
- Certified for Japanese AS923 MHz ISM band with Ethernet and/or 4G-LTE backhaul

*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.)

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](#).

Easily Deploy and Manage Assets Via DeviceHQ™



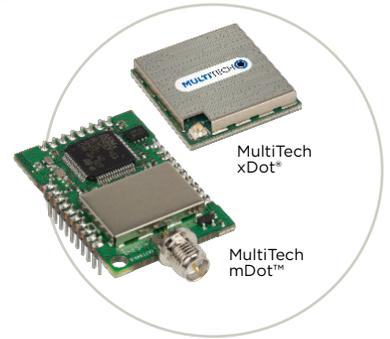
MultiTech DeviceHQ is the M2M industry's first

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.

CONNECTING THE “THINGS”

MultiTech mDot™ & xDot™

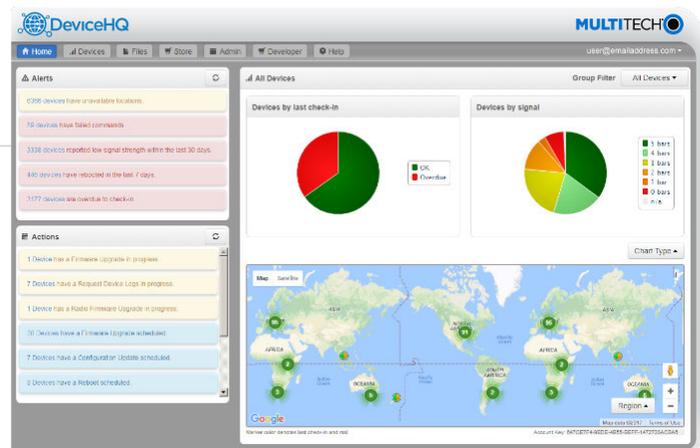
MultiTech mDot and xDot are secure, regulatory-certified, Arm® Mbed™ programmable, low-power RF modules, providing long-range, low bit rate IoT data connectivity to sensors and actuators.



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”.

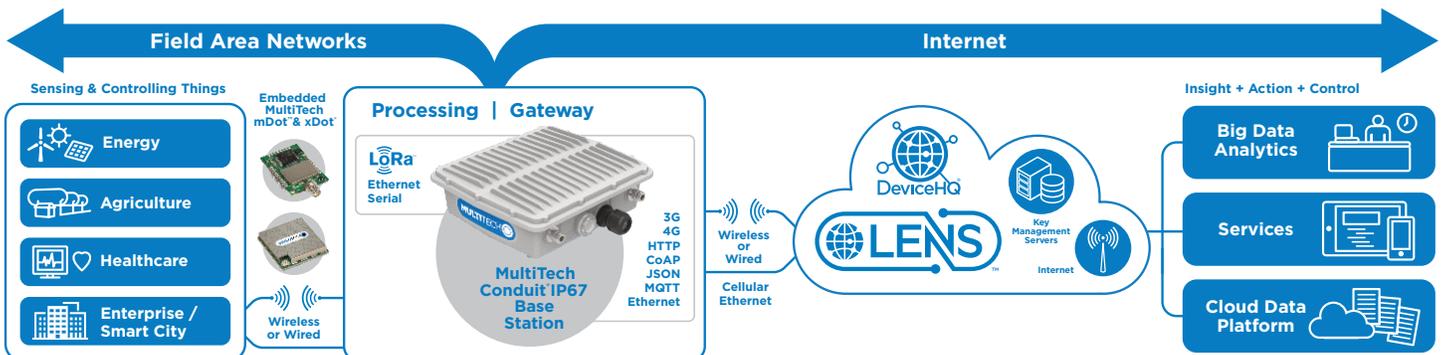


Benefits

- “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

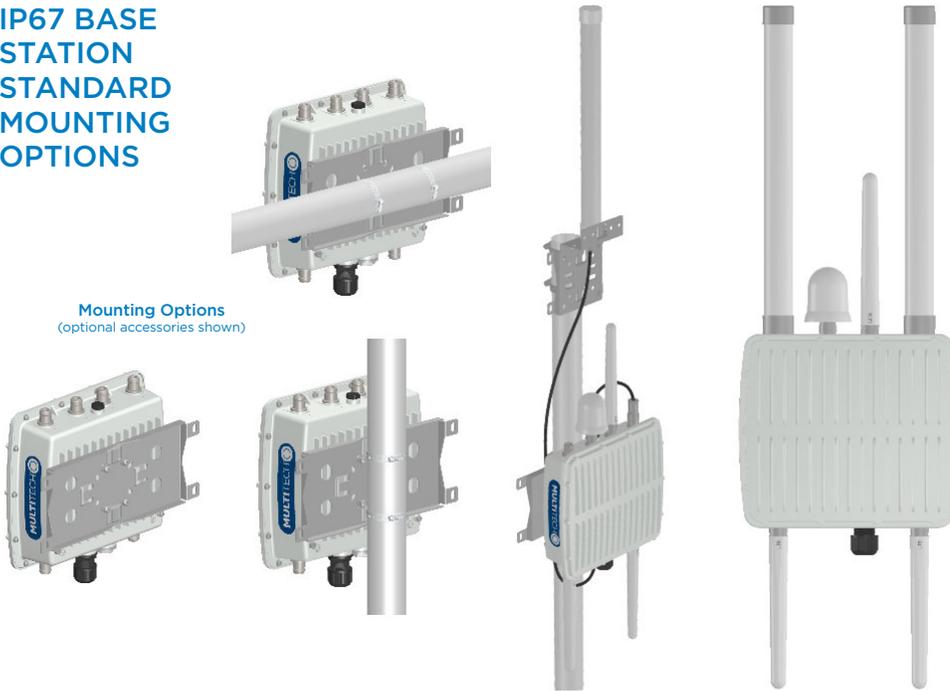
SPECIFICATIONS

Models	MTCDTIP-LDC3	MTCDTIP-LSB3
Cellular Options	Category 1 LTE 3GPP Release 13 (10 Mbps peak downlink/5 Mbps peak uplink)	
	NTT Docomo	Softbank
Frequency Band (MHz)	4G No Fallback 2100(B1)/850(B19)/1500(B21)	4G No Fallback 2100(B1)/900(B8)
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 - a proprietary Digital Spread Spectrum technique	
GNSS/GPS	72-channel u-blox NEO/LEA-M8T module / Concurrent reception of GPS/QZSS, GLONASS, Galileo, BeiDou / Survey-in and single satellite timing / Time pulse frequency: 0.25 Hz...10 Mhz / Time pulse accuracy: Clear sky ≤ 20 ns / Indoor ≤ 500 ns	
Antennas	LoRa Omni-directional radiation pattern for 360° / 3 dBi gain / Vertical polarization / Weight: 231 grams / Nominal Impedance: 50 Ω / Dimensions: 388.5 mm x 36.9mm / Frequency Range: 806-960/1710-2170 Mhz / N-Male connector / Power withstanding: 20 W / Wind-loading: 125 Mph	
	Cellular Wideband LTE, 4G / 3 dBi gain / HPBW: Horizontal - 360° / Vert - 60° / Linear and vertical polarization Nominal Impedance: 50 Ω / Dimensions: 178 x 22mm / N Plug connector / Weight: 70 gw / Frequency Range: 690-960/1710-2170/2500-2690 MHz	
	GNSS/GPS Operation Voltage: 3.0 - 5.0V / Polarization: RHCP / Power Consumption: 8+/-3mA@3.0+/-0.1V / Temperature: -40°C to +85°C / Gain: 90°: 2.4 dBic@1575 MHz; 2.85 dBic@1602 Mhz / Connector: N-Plug / Frequency Range: 1575 - 1615 Mhz / Dimensions: 55 (Dia.) mm x 64 (W) / Noise Figure: 2.0 dB typ.	
MTAC LoRa mCard	Listen Before Talk support / SPI interface / LoRaWAN 1.0, 1.0.1 & 1.0.2 support Dimensions - 50.59 mm x 30 mm / 902-928 MHz ISM Band - AS923 MHz compliant	
LoRa Channel Plan	Japan 920 - 928 MHz, with AS923 MHz	
LoRaWAN Protocol	LoRaWAN 1.0, 1.0.1 and 1.0.2 supported / Listen Before Talk support	
Voltage	Uses a standard IEC320 power connection AC Input Voltage: 90 to 264 Vac / AC Frequency: 47 to 63 Hz	
Connectors		
Ethernet	1 RJ-45 Ethernet 10/100 port	
USB	1 USB Port: USB Host (Type-A)	
Cellular (Optional)	Female SMA, 3dBi detachable cellular antennas (Qty 2)	
Antenna	"N" type / RJ-45 for POE	
SIM	Micro-SIM Holder (3FF)	
Physical Description		
Dimensions (LxWxH)	262 mm x 91 mm x 257 mm	
Physical Weight	2.75 kg	
Chassis Type	IP67-rated, Aluminum	
Environmental		
Operating Temperature	-30° to +75° C	
Storage Temperature	-40° to +85° C	
Certifications		
EMC Compliance	Japan: TELEC, Radio/Telecom Biz Act, GITEKI	
Radio Compliance	Japan Giteki, Radio/Telecom Biz Act	
Safety	UL 60950-1 2nd Ed., cUL 60950-1 2nd Ed., IEC 60950-1 2nd Ed	
Network Approvals	NTT Docomo and Softbank	
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	



IP67 BASE STATION STANDARD MOUNTING OPTIONS

Mounting Options (optional accessories shown)



ORDERING INFORMATION

MultiTech Conduit® IP67 Base Station with GNSS

Model	Description	Region
MTCDTIP-LDC3-266A-923-JP	LTE Cat 1 mPower Conduit IP67 Base Station GNSS w/Accessory Kit (NTT Docomo)	Japan
MTCDTIP-LSB3-266A-923-JP	LTE Cat 1 mPower Conduit IP67 Base Station GNSS w/Accessory Kit (Softbank)	Japan
MTCDTIP-266A-923-JP	Ethernet Only mPower Conduit IP67 Base Station GNSS w/Accessory Kit	Japan

RECOMMENDED ACCESSORIES

MultiTech mDot™

Model	Description	Region
MTDOT-923-JP1-X1P-SMA-1	AS923 MHz X1 LoRa SMA w/Programming Header w/ LBT (1 Pk)	Japan

MultiTech xDot*

Model	Description	Region
MTXDOT-JP1-A00-x	AS923 MHz LoRa Module w/ LBT UFL/TRC (Single or 100 Pack)	Japan

Developer Kit & Accessories

Model	Description	Region
MTUDK2-ST-MDOT	Developer Kit (includes SMA antenna and USB cable)	Global
MTMDK-XDOT-JP1-A00	AS923 MHz Developer Kit, includes a AS923 MHz xDot w/LBT	Japan
MMTKIT-IP67-MF	Conduit IP67 Accessory Kit (includes antenna mounting bracket, coax cable, two clamps and lightning arrester)	Global
LGT-ARRST-x	Lightning Arrester (Single or 5 pack)	Global
CA-NTYPE-MF-x	Outdoor Coax Cable, N Type Male & Female (Single or 5 pack)	Global
MB-ANT-IP67-x	Antenna Mounting Bracket, Mounts 1 Antenna (Single or 5 pack)	Global
PS-56V-POE-NAM-x	Single Port Power over Ethernet Transformer with NAM Power Cord (Single or 5 pack)	Japan/North America

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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