

# MultiTech Conduit®

Programmable Gateway for the Internet of Things US915 for North America

MultiTech Conduit<sup>\*</sup> is the industry's most configurable, manageable, and scalable cellular communications gateway for industrial IoT applications. Network engineers can remotely configure and optimize their Conduit performance through DeviceHQ<sup>\*</sup>, the world's first IoT Application Store and Device Management platform. The Conduit features Wi-Fi/Bluetooth/Bluetooth Low Energy (BT/BLE), GNSS, and two accessory card slots that enable users to plug in MultiTech mCard<sup>\*\*</sup> accessory cards supporting their preferred wired or wireless interface to connect a wide range of assets locally to the gateway.

MULTITECH

Conduit

Available options include a LoRaWAN<sup>®</sup> mCard capable of supporting thousands of MultiTech mDot<sup>™</sup> and xDot<sup>®</sup> long range RF modules connected to remote sensors or appliances. Quick-to-deploy and easy to customize and manage, the Conduit communications gateway realizes your IoT application.

# LoRa Alliance

#### **GATEWAY BENEFITS**

- Wi-Fi communication supporting 802.11 a/b/g/n 2.4 GHz and 5GHz with WPA2 personal transmission security. Wi-Fi Access Point and Client modes are supported simultaneously.
- BT Classic and BLE 4.1 communication supports local connectivity with automatic pairing with target devices utilizing 128 bit link key length security.
- GNSS module for LoRaWAN packet time-stamping and geo-location capability
- Backhaul options include Ethernet and optional 4G-LTE, 3G, 2G cellular for cost effective deployment

#### LORA FEATURES

- Certified for North American 915 MHz ISM bands
- ISM band scanning for optimum LoRa<sup>®</sup> performance
- Listen Before Talk LoRa operating protocol



# EDGE INTELLIGENCE

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

mPower<sup>™</sup>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<sup>\*</sup> 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. ACCESSORIES

### MultiTech Conduit' Accessories – From the Gateway to the Endpoint

MultiTech Conduit is the center of an integrated IoT platform and comes with the following options:



#### MultiTech mCard

MultiTech mCards provide the flexibility needed to manage diverse infrastructures, supporting a wide range of interfaces and communication protocols including:

Multi-Function Serial, GPIO, EthernetLoRa LPWAN

# MultiTech mDot<sup>™</sup> & xDot<sup>®</sup> -Connecting the "Things"

MultiTech mDot and xDot are secure, regulatory-certified, Arm<sup>\*</sup> Mbed<sup>\*\*</sup> 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".

mPower software specifications can be found here.

# Easily Deploy and Manage Assets Via DeviceHQ<sup>®</sup>

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

#### **SPECIFICATIONS**

Mobile Network Operator			MTCDT-LVW2		
Hobile Network Operator	AT&T & Verizon	AT&T	Verizon	AT&T European Network Operators	Ethernet Only
Cellular Performance	4G-LTE Category 4	4G - LTE Category 3	4G - LTE Category 3	3G-HSPA+	
Cellular Fallback	3G - HSPA+ (AT&T only)	3G - HSPA+	No Fallback	2G - GPRS	
Frequency Band (MHz)	Sci Harvi (artar only)           Ar&1:           Ar&1:           G: B2(1900), B4(AWS1700), B5(850), B12(700a), B14(700 FirstNet), B66(AWS-3 1700), 3G: B2(1900), B4(AWS1700), B5(850)           Verizon:           4G: B4(AWS1700), B13(700c)           Other Bands Supported: B71(600)	4G: B2(1900), B4(AWS1700), B5(850), B17(700) 3G: B2(1900), B5(850)	4G: B4(AWS1700), B13(700)	3G: 850 / 900 / 1700 (AWS) / 1900 / 2100 2G: 850 / 900 / 1800 / 1900	No Cellular
FirstNet Support	Yes (AT&T) <sup>+</sup>		No		
Packet Data (LTE FDD)	Up to 150 Mbps peak downlink Up to 50 Mbps peak uplink	Up to 100 Mbps peak downlink Up to 50 Mbps peak uplink	Up to 100 Mbps peak downlink Up to 50 Mbps peak uplink	Up to 21 Mbps peak downlink Up to 5.76 Mbps uplink	
Input Voltage	9 VE	DC 1.7A input provided to 100 - 2	240 VAC 50/60 Hz external ada	aptor or fused DC Power Cable	
Processor and Memory	• 400	ARM9 processor wit MHz • 16K Data Cache • 16K Ins	th 32-Bit ARM & 16-Bit Thumb i struction Cache • 128X16 MB DI		/
Wi-Fi/Bluetooth (-247 models)		WiFi: 802.11abng (2	.4 & 5 Ghz) / Bluetooth: Class	ic 4.1 and BLE	
GPS/GNSS		Cor GNSS Systems Supported: (	for LoRa Packet Time Stampin neurrent GNSS connections: 3 (default: concurrent GPS/QZSS	/SBAS and GLONASS)	
LEDs			(Power Status), LS (Link Status) dels only: A - B - C - D (User de		Signal Strength)
	els that include MTAC-LORA Ga	ateway Accessory Card)			
LoRa Frequency Band			915 MHz		
LoRa Channel Plan			US915		
Channel Capacity			8-channels (half-duplex)		
LoRa Power Output		27 dBm ma	ximum output power before ar	itenna	
Connectors					
Power		2.5 mm	miniature barrel jack (screw-o	n)	
E-NET		RJ4	5 Ethernet jack (10/100 port)		
USB DEVICE			USB 2.0 Micro B connector		
USB HOST		l	USB 2.0 Type A connector		
AP1, AP2		MultiTech	n mCard Gateway Accessory Ca	ards	
SIM (under nameplate)		2FF M	ini SIM		None
SD Card (under nameplate)		Micro SD Card, 32GB (HSM)	CI) max (industrial temperature	range recommended)	
Antennas		Cellular, GPS, LoRa: fe	male SMA / LoRa: reverse pol	arity female SMA	
Physical Description					
Dimensions (L x W x H)		6.35″ x 4.23″ x	: 1.69" (161.3 mm x 107.4 mm x 4	12.8 mm)	
Weight		1.0 lbs (0.45	kg) with two accessory cards in	nstalled	
Chassis Type			Anodized aluminum (blue)		
Environmental					
Operating Temperature			-30° to +70° C*		
Storage Temperature			-40° to +85° C		
Humidity		Relative hu	midity 20% to 90%, non-conde	ensing	
Certifications					
EMC Compliance	US: FCC Part 15 Class B Canada: ICES-003 Class B	US: FCC Part 15 Class B Canada: ICES-003 Class B	US: FCC Part 15 Class B Canada: ICES-003 Class B	US: FCC Part 1 Canada: ICES-0 Australia: CI EU: EN 55023 Class B, E EN 301 489-1 V2.2.0, EN	03 Class B SPR 32 EN 301 489-3 V2.1.1,
Radio Compliance		US: FCC Part 22, 24, 27 Canada: ISED		US: FCC Part 22, 24, 27 Canada: ISED-003 AU: AS/NZS 4268:2012 + A1:2013 MPE Standard 2014 EU: EN 300 220-1 V3.1.1 EN 300 220-2 V3.1.1 EN 300 328 V2.1.1 EN 301 511 V9.0.2 EN 301 908-1 V11.1.1 EN 301 908-1 V11.1.1 EN 301 908-13 V11.1.1 EN 301 908-13 V11.1.1 EN 62311-2008	US: FCC Part 22, 24, 27 Canada: ISED-003 AU: AS/NZS 4268:2012 + A1:2013 MPE Standard 2014
Safety			CUL 60950-1, UL/CUL 62368-1	1	I
Mobile Network Operator Approvals	PTCRB, AT&T, Verizon Pending: Rogers, Bell, Telus, T-Mobile	PTCRB, AT&T Pending: Rogers, Bell, Telus, T-Mobile	Verizon	PTCRB, AT&T, T-Mobile Pending: Rogers, Bell, Telus GCF Certified Cell Module	N/A
Approvais	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				
Quality	MIL-S				,

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 \* All future end-user (OEM) devices will and must go through FirstNet certification prior to being included in the FirstNet device ecosystem.

#### **ORDERING INFORMATION**

MultiTech Conduit® with GNSS and WiFi-Bluetooth (BT/BLE) and MTAC-LORA Gateway Accessory Card

Model	Description	Region
MTCDT-L4N1-247A-915-US	LTE Cat 4 mPower Programmable Gateway 8-channel, 915 MHz, GNSS+WiFi/BT	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (AT&T/Verizon)	US/Canada
MTCDT-LAT1-247A-915-US	LTE Cat 3 mPower Programmable Gateway 8-channel, 915 MHz, GNSS+WiFi/BT	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (AT&T)	US/Canada
MTCDT-LVW2-247A-915-US	LTE Cat 3 mPower Programmable Gateway 8-channel, 915 MHz, GNSS+WiFi/BT	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (Verizon)	US/Canada
MTCDT-247A-915-US-EU-GB	Ethernet Only mPower Programmable Gateway 8-channel, 915 MHz, GNSS+WiFi/BT	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit	US/Canada
Accessory kit includes: Condu	uit Gateway with installed MTAC-LORA-H-915 accessory card and power supply with	
regional-specific blades, appr	ropriate antennas, Ethernet cable, USB cable and quick-start guide. GNSS Antenna sold separately	
MultiTech Conduit <sup>®</sup> with G	NSS and MTAC-LORA Gateway Accessory Card	
Madal	Description	Degion

Model	Description	Region
MTCDT-L4N1-246A-915-US	LTE Cat 4 mPower Programmable Gateway 8-channel, 915 MHz, GNSS	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (AT&T/Verizon)	US/Canada
MTCDT-LAT1-246A-915-US	LTE Cat 3 mPower Programmable Gateway 8-channel, 915 MHz, GNSS	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (AT&T)	US/Canada
MTCDT-LVW2-246A-915-US	LTE Cat 3 mPower Programmable Gateway 8-channel, 915 MHz, GNSS	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit (Verizon)	US/Canada
MTCDT-246A-915-US-EU-GB	Ethernet Only mPower Programmable Gateway 8-channel, 915 MHz, GNSS	
	w/MTAC-LORA-H-915 mCard and US Accessory Kit	US/Canada
Accessory kit includes: Condu	it Gateway with installed MTAC-LORA-H-915 accessory card and power supply with	

regional-specific blades, appropriate antennas, Ethernet cable, USB cable and quick-start guide. GNSS Antenna sold separately

#### MultiTech Conduit\* with GNSS and WiFi-Bluetooth (BT/BLE)

Model	Description	Region
MTCDT-L4N1-247A-US	LTE Cat 4 mPower Programmable Gateway 8-channel, GNSS+WiFi/BT and US Accessory Kit (AT&T/Verizon)	US/Canada
MTCDT-LAT1-247A-US	LTE Cat 3 mPower Programmable Gateway 8-channel, GNSS+WiFi/BT and US Accessory Kit (AT&T)	US/Canada
MTCDT-LVW2-247A-US	LTE Cat 3 mPower Programmable Gateway 8-channel, GNSS+WiFi/BT and US Accessory Kit (Verizon)	US/Canada
MTCDT-H5-247A-US-EU-GB	HSPA+ mPower Programmable Gateway, GNSS+WiFI/BT w/US/EU/UK Accessory Kit (AT&T)	Globa
MTCDT-247A-US-EU-GB	Ethernet Only mPower Programmable Gateway, GNSS+WiFI/BT w/US/EU/UK Accessory Kit	Globa
Accessory kit includes: Cond	uit Gateway with power supply with regional-specific blades,	
appropriate antennas. Ethern	et cable, USB cable and quick-start quide. GNSS Antenna sold separately	

#### MultiTech Conduit® with GNSS

Model	Description	Region
MTCDT-L4N1-246A-US	LTE Cat 4 mPower Programmable Gateway 8-channel, GNSS w/ US Accessory Kit (AT&T/Verizon)	US/Canada
MTCDT-LAT1-246A-US	LTE Cat 3 mPower Programmable Gateway 8-channel, GNSS w/ US Accessory Kit (AT&T)	US/Canada
MTCDT-LVW2-246A-US	LTE Cat 3 mPower Programmable Gateway 8-channel, GNSS w/ US Accessory Kit (Verizon)	US/Canada
MTCDT-H5-246A-US-EU-GB	HSPA+ mPower Programmable Gateway, GNSS w/US/EU/UK Accessory Kit	Global
MTCDT-246A-US-EU-GB	Ethernet Only mPower Programmable Gateway, GNSS w/US/EU/UK Accessory Kit	Global

Accessory kit includes: Conduit Gateway with power supply with regional-specific blades, appropriate antennas, Ethernet cable, USB cable and quick-start guide. GNSS Antenna sold separately

#### **RECOMMENDED ACCESSORIES**

## MultiTech mCard™

Model	Description	Region
MTAC-GPIO	GPIO Accessory Card, GPIO Cable Sold Separately	Global
MTAC-MFSER-DTE	Multi-Function Serial Accessory Card - DTE Interface	Global
MTAC-MFSER-DCE	Multi-Function Serial Accessory Card - DCE Interface	Global
MTAC-ETH	Ethernet Accessory Card, Ethernet Cable Sold Separately	Global
MTAC-LORA-H-915	915 MHz LoRa Accessory Card, Antenna Sold Separately	NAM
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
Developer Kit, Antenna	s & Accessories	
Model	Description	Region
MTUDK2-ST-MDOT	Developer Kit (includes SMA antenna and USB cable)	Global
ANGPS-1MM	Antenna Indoor Magnetic for GNSS	Global
AN868-915A-1HRA	868-915 MHz RP-SMA Antenna, 8" (3.0dBi)	Global
CARSMA-UFL	Reverse SMA-to-UFL Coax RF Cable, 6"	Global
CA-MTAC-GPIO	GPIO Cable for MTAC-GPIO (2.5 ft)	Global
CA9-9-D	DE9M-DE9F Serial Cable (6 ft)	Globa
CA-USB-A-MICRO-B-3	USB Cable Type A to Type B Micro (3ft)	Global

Go to www.multitech.com for detailed product model numbers.

Produced in the U.S. of U.S. and non-U.S. components. Features and specifications are subject to change without notice.

The LoRa® name and associated logo are trademarks of Semtech Corporation or its subsidiaries. Trademarks and Registered Trademarks: MultiTech and the MultiTech logo, MultiConnect, Conduit, mCard, mDot, xDot, mPower, DeviceHQ: Multi-Tech Systems, Inc. All other products and technologies are the trademarks or registered trademarks of their respective holders.

#### 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



#### World Headquarters

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 MTCDTIP-LEU1-266A-915

 LEU1-266A-915
 MTCDT-LEU1-246A-868-EU-GB
 SGX5150020US
 SGX5150225US
 X2-HMU-EM-B
 MTCDT-LAP3-246A-915-AU

 MTCAP-LNA3-915-041A
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