

Product Change Notification Software Release Notice

MultiTech[®] Conduit[®]

Family of Programmable Gateways:

- Conduit IoT Programmable Gateway
- Conduit IP67 Base Station
- Conduit AP Access Point



mPower[™] Edge Intelligence Coming Soon - mPower 5.3.X Firmware

Date: July 14, 2020

Product Change Notification (PCN) Number
PCN 07142020-001 (mPower)

I. Overview

MultiTech announces the schedule for the next version of mPower firmware for the MultiTech[®] Conduit[®] family of products, including:

- MultiTech Conduit[®] IoT Programmable Gateway
- MultiTech Conduit[®] IP67 Base Station
- MultiTech Conduit[®] AP Access Point

The purpose of this Software Release Notice is to alert customers of the planned changes and schedule for the next mPower firmware release.

DEPRECATED FEATURE
mPower 5.3.X will NOT support Node-RED applications

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II. Suggested Action Plan

To help accelerate the acceptance of mPower 5.3.X and understand any impact on custom applications, we recommend that the following actions be taken.

Upcoming mPower Versions

- MTCAP 5.3.X (Conduit AP Access Point)
- MTCDT 5.3.X (Conduit Gateway and Conduit IP67 Base Station)

Customers

- Please review the information in this PCN and forward to others within your organization who are actively involved with the development of IoT applications using the Conduit AP Access Point, Conduit IoT Programmable Gateway, or Conduit IP67 Base Station.
- If your application is using a hosted LoRaWAN[®] Network Server, contact your provider and understand how mPower 5.3.X may impact your deployment.

Deprecated Feature - Node-RED Support

- mPower 5.3.X will **not** support Node-RED applications.
- Transition Node-RED applications to Python programming language.

Beta Firmware Availability

- Consider downloading the beta firmware to understand the impact on your custom application
- See [beta firmware schedule](#) below
- If your application is using a hosted LoRaWAN Network Server, contact your provider and understand how mPower 5.3.X may impact your deployment

Released Firmware Schedule

- Review the [Ordering Part Numbers Impacted](#) to understand how mPower 5.3.X impacts the devices you are using
- If your application is using a hosted LoRaWAN Network Server, contact your provider and understand how mPower 5.3.X may impact your deployment
- Consider downloading mPower 5.3.X firmware prior to the transition
- Technical inquiries: email support@multitech.com
- Sales inquiries: email sales@multitech.com

Distributors

- Forward this announcement to others within your organization who are actively involved in the sale or support of programmable IoT gateways
- Notify existing customers of this upcoming change and encourage them to evaluate the new firmware with their custom application

III. mPower 5.3.X Overview

Deprecation (MTCAP 5.3.X, MTCDT 5.3.X) - Node-RED Support

1. mPower 5.3.X will not include support for Node-RED applications
 - Current mPower versions (mPower 5.2.X and earlier) support Node-RED version 0.15.3
 - The requirement to upgrade to OpenSSL 1.1 in mPower 5.3.X means that the Conduit family of programmable gateways can no longer support Node-RED applications due to security protocol vulnerabilities that exist within Node-RED 0.15.3.
 - mPower 5.3.X release schedule: [Ordering Part Numbers Impacted](#)
2. BACKGROUND:
 - Node-RED is a flow-based development tool for visual programming developed originally by IBM for wiring together hardware devices, APIs and online services as part of the Internet of Things.
 - Node-RED provides a web browser-based flow editor, which can be used to create JavaScript functions. Elements of applications can be saved or shared for re-use.
 - The runtime is built on Node.js. The flows created in Node-RED are stored using JSON.
3. CUSTOMER ACTION PLAN:

Customers that have developed Node-RED applications for use on Conduit gateways should consider the following options:

 - Node-RED applications should be transitioned to Python programming language.
 - Node-RED will be supported in a new MultiTech gateway: The Conduit 300 IoT Programmable Gateway. The Conduit 300 is currently available as a [developer kit](#) and is expected to be released for general availability in 2021.

New Features (MTCAP 5.3.X, MTCDT 5.3.X):

mPower 5.3.X will include the following new features:

1. Upgrade to Yocto 2.6.4 (codename: Thud) [GP-444]
 - Current mPower versions are built using Yocto 2.2.4 (codename: Morty).
2. Upgrade to OpenSSL 1.1 [GP-39]
 - Current mPower versions support OpenSSL 1.0.2k
 - Customer applications written to earlier OpenSSL versions do not require porting to the latest version
3. Upgrade Cipher Suite to TLS 1.3 [GP-382]
 - Current mPower versions support configurable TLS 1.0, 1.1, and 1.2.
 - The benefits of TLS 1.3 are:
 - Increased speed of encrypted connections
 - Improved security due to the removal of obsolete and insecure features from TLS 1.2
 - Greater browser support
 - Increased SSL server support
4. Added support for LoRa Basics Station from Semtech [GP-98], a LoRa packet forwarder which can be remotely managed by a configuration and update server (CUPS). Core features include:
 - More information available:
<https://lora-developers.semtech.com/resources/tools/basic-station/welcome-basic-station/>

5. Future mPower firmware updates using differential updates (delta files) [GP-445]
 - When new mPower firmware versions are released, customers can update their devices using the full firmware image (today's solution) or using a differential update image.
 - The differential update image only contains updates to the firmware code that has changed.
 - The differential update image can be uploaded to the device faster than the full firmware image, reducing bandwidth and using less cellular data.
 - Firmware releases following mPower 5.3.X can be made using a differential update image.
6. Other features: October 2020

Feature Enhancements (MTCAP 5.3.X, MTCDT 5.3.X):

mPower 5.3.X versions include the following enhancements to features announced in earlier mPower versions:
October 2020

Bug Fixes (MTCAP 5.3.X, MTCDT 5.3.X):

mPower 5.3.X versions include the following fixes to bugs that were identified in earlier mPower versions:
October 2020

Known Behaviors (MTCAP 5.3.X, MTCDT 5.3.X)

October 2020

API Command Changes (MTCAP 5.3.X, MTCDT 5.3.X):

The Conduit devices use the RESTful JSON API for managing configurations, polling statistics, and issuing commands. mPower MTCAP 5.3.X and mPower MTCDT 5.3.X versions include a number of API changes.

API Reference: <http://www.multitech.net/developer/software/mtr-api-reference/#http://www.multitech.net/developer/software/mtr-api-reference/>

API Delta Document (mPower 5.21 to mPower 5.3.X):
<http://www.multitech.net/developer/software/mtr-software/mtr-api-reference/api-changes/>

Minimum System Requirements (MTCAP 5.3.X, MTCDT 5.3.X)

To install mPower 5.3.X, the Conduit gateway must be upgraded to mPower 5.0.0 or higher. Customers that are running earlier versions of mPower should use the following upgrade process:

- mPower AEP 1.7.4
 1. Upgrade to mPower 5.0.0
 2. Install mPower 5.3.X
- mPower AEP 1.6.4
 1. Upgrade to mPower AEP 1.7.4
 2. Upgrade to mPower 5.0.0
 3. Install mPower 5.3.X
- mPower versions earlier than mPower AEP 1.6.4
 1. Upgrade to mPower AEP 1.6.4
 2. Upgrade to mPower AEP 1.7.4
 3. Upgrade to mPower 5.0.0
 4. Install mPower 5.3.X

IV. Preliminary Schedule

There are multiple versions of mPower Edge Intelligence firmware available for customer evaluation and final release.

- Beta Versions
 - MTCAP 5.3.X Availability: August 2020
 - MTCDT 5.3.X Availability: August 2020
 - Beta versions of mPower 5.3.X firmware are available on the MultiTech Support Portal
 - Existing customers can log in with their existing ID and password
 - Support Portal Login: <https://support.multitech.com/support/login.html>
 - New customers must register for an account
 - Support Portal Registration: <https://support.multitech.com/support/signup.html>
 - Case Number 5102606. Beta – mPower 5.3
 - <https://support.multitech.com/support/case.html?action=view&id=102606>
- Downloadable Versions
 - MTCAP 5.3.X Availability: October 2020
 - MTCDT 5.3.X Availability: October 2020
 - Conduit models: visit <http://www.multitech.net/developer/downloads/>
 - Instructions: [Upgrading Firmware Using Device Web Interface](#)
- Manufacturing
 - MTCAP 5.3.X Availability: January 2021
 - MTCDT 5.3.X Availability: January 2021
 - See [Ordering Numbers Impacted](#) for details on when MTCAP 5.3.X and MTCDT 5.3.X will be available for different devices
- DeviceHQ[®]
 - Cloud-based IoT Device Management
 - MTCAP 5.3.X Availability: October 2020
 - MTCDT 5.3.X Availability: October 2020
 - DeviceHQ login: https://www.devicehq.com/sign_in
 - Instructions: [Upgrading Firmware Using DeviceHQ](#)

V. Upgrading Firmware

At any time in the upgrade process, customers can send an email to support@multitech.com or call +1(763) 717-5863.

Upgrading Using DeviceHQ - Available October 2020

DeviceHQ can update the firmware running on any supported device. Since devices have no live connection to DeviceHQ, firmware updates are made the next time a device checks into DeviceHQ.

Instructions:

1. Visit <https://www.devicehq.com>
2. Sign in to your account using your **email address** and **password**
3. Click **Devices**. The device list page opens.
4. Click the name of the device you want to update. You can update firmware on filtered devices or selected devices.
 - If you select individual devices, you update firmware on selected devices or the filtered devices.
 - If you do not select devices you update the firmware on the filtered devices.
5. Click **Schedule** and select **Upgrade Firmware**. From the list of firmware that appears, select the name of the firmware file. A confirmation message appears, informing you that the new firmware is to be applied to the device when the device next checks in.
6. To confirm that you want to update the firmware click **OK**.

NOTE: To schedule multiple devices at once, see help file within DeviceHQ

Upgrading Using the Web Interface - Available October 2020

It is recommended that customers backup their configuration before performing an upgrade.

- If the firmware upgrade fails, or it does not show the login page again, wait an additional 10 minutes.
- Power off and on the hardware and log in using the web interface to check the version.
- If the version does not show the latest, then the upgrade was not successful.
- Try to perform the firmware upgrade again by repeating all the steps.

Instructions:

1. Download the latest firmware file from the <http://www.multitech.net/developer/downloads/>

NOTE: There are multiple versions of mPower firmware available.
Please select the file that matches the hardware model being upgraded.

2. Log into the mPower Web interface.
3. In the left navigation pane, click **Administration > Firmware Upgrade**.
4. Click Browse and select the appropriate file:
 - [MTCAP_5.3_upgrade-signed.bin](#)
 - [conduit_5.3_upgrade-signed.bin](#)
5. Click **Start Upgrade**.
6. After the firmware upgrade is complete, log back into the web GUI and verify the firmware version shown at the top of the page.

VI. Ordering Part Numbers Impacted

The following ordering part numbers are impacted by these updates:

Model Name		Ordering Part Numbers	
Conduit® IoT Programmable Gateways			
Status: Active ⁽²⁾	Status: Active ⁽²⁾	Status: NEOL ⁽³⁾	
MTCDT-246A-US-EU-GB ⁽²⁾ MTCDT-247A-US-EU-GB ⁽²⁾ MTCDT-H5-246A-US-EU-GB ⁽²⁾ MTCDT-H5-247A-US-EU-GB ⁽²⁾ MTCDT-L4E1-246A-EU-GB ⁽²⁾ MTCDT-L4E1-247A-EU-GB ⁽²⁾ MTCDT-L4N1-246A-US ⁽²⁾	MTCDT-L4N1-247A ⁽²⁾ MTCDT-L4N1-247A-US ⁽²⁾ MTCDT-LAP3-246A-AU ⁽²⁾ MTCDT-LDC3-246A-JP ⁽²⁾ MTCDT-LDC3-247A-JP ⁽²⁾ MTCDT-LSB3-246A-JP ⁽²⁾ MTCDT-LSP3-246A-US ⁽²⁾	MTCDT-LAT1-246A-US ⁽³⁾ MTCDT-LAT1-247A ⁽³⁾ MTCDT-LAT1-247A-US ⁽³⁾ MTCDT-LEU1-246A-AU ⁽³⁾ MTCDT-LEU1-247A-AU ⁽³⁾ MTCDT-LEU1-247A-EU-GB ⁽³⁾ MTCDT-LVW2-246A-US ⁽³⁾ MTCDT-LVW2-247A ⁽³⁾ MTCDT-LVW2-247A-US ⁽³⁾	
Conduit® IoT Programmable Gateways with LoRa Accessory Cards			
Status: Active ⁽²⁾	Status: Active ⁽²⁾	Status: NEOL ⁽³⁾	
MTCDT-246A-US-EU-GB-923KR ⁽²⁾ MTCDT-246A-868-EU-GB ⁽²⁾ MTCDT-246A-915-US-EU-GB ⁽²⁾ MTCDT-246A-923-JP ⁽²⁾ MTCDT-247A-868-EU-GB ⁽²⁾ MTCDT-247A-915-US-EU-GB ⁽²⁾ MTCDT-H5-246A-868-EU-GB ⁽²⁾ MTCDT-H5-247A-868-EU-GB ⁽²⁾	MTCDT-H5-247A-915-US ⁽²⁾ MTCDT-L4E1-246A-868-EU-GB ⁽²⁾ MTCDT-L4N1-246A-915-US ⁽²⁾ MTCDT-L4N1-247A-915-US ⁽²⁾ MTCDT-LAP3-246A-915-AU ⁽²⁾ MTCDT-LAP3-247A-915-AU ⁽²⁾ MTCDT-LDC3-246A-923-JP ⁽²⁾ MTCDT-LSB3-246A-923-JP ⁽²⁾	MTCDT-LAT1-246A-915-US ⁽³⁾ MTCDT-LAT1-247A-915-US ⁽³⁾ MTCDT-LEU1-246A-868-EU-GB ⁽³⁾ MTCDT-LEU1-246A-915-EU-GB-AU ⁽³⁾ MTCDT-LEU1-247A-868-EU-GB ⁽³⁾ MTCDT-LEU1-247A-915-EU-GB-AU ⁽³⁾ MTCDT-LVW2-246A-915-US ⁽³⁾ MTCDT-LVW2-247A-915-US ⁽³⁾	
Conduit® IP67 Base Stations			
Status: Active ⁽²⁾	Status: Active ⁽²⁾	Status: NEOL ⁽³⁾	
MTCDTIP-266A-868 ⁽²⁾ MTCDTIP-266A-868/2 ⁽²⁾ MTCDTIP-266A-915 ⁽²⁾ MTCDTIP-266A-915/2 ⁽²⁾ MTCDTIP-266A-923-JP ⁽²⁾ MTCDTIP-266A-923KR ⁽²⁾ MTCDTIP-267A-868 ⁽²⁾ MTCDTIP-267A-868/2 ⁽²⁾ MTCDTIP-267A-915 ⁽²⁾ MTCDTIP-267A-915/2 ⁽²⁾ MTCDTIP-L4E1-266A-868 ⁽²⁾	MTCDTIP-L4E1-266A-868/2 ⁽²⁾ MTCDTIP-L4E1-266A-915 ⁽²⁾ MTCDTIP-L4E1-267A-868 ⁽²⁾ MTCDTIP-L4N1-266A-915 ⁽²⁾ MTCDTIP-L4N1-266A-915/2 ⁽²⁾ MTCDTIP-L4N1-267A-915 ⁽²⁾ MTCDTIP-L4N1-267A-915/2 ⁽²⁾ MTCDTIP-LAP3-266A-915 ⁽²⁾ MTCDTIP-LAP3-266A-915/2 ⁽²⁾ MTCDTIP-LAP3-267A-915 ⁽²⁾ MTCDTIP-LDC3-266A-923-JP ⁽²⁾ MTCDTIP-LSB3-266A-923-JP ⁽²⁾	MTCDTIP-LAT1-266A-915 ⁽³⁾ MTCDTIP-LAT1-266A-915/2 ⁽³⁾ MTCDTIP-LAT1-267A-915 ⁽³⁾ MTCDTIP-LAT1-267A-915/2 ⁽³⁾ MTCDTIP-LEU1-266A-868 ⁽³⁾ MTCDTIP-LEU1-266A-868/2 ⁽³⁾ MTCDTIP-LEU1-266A-868-FRU ⁽³⁾ MTCDTIP-LEU1-266A-915 ⁽³⁾ MTCDTIP-LEU1-266A-915/2 ⁽³⁾ MTCDTIP-LEU1-267A-868/2 ⁽³⁾ MTCDTIP-LEU1-267A-915/2 ⁽³⁾ MTCDTIP-LVW2-266A-915 ⁽³⁾ MTCDTIP-LVW2-266A-915/2 ⁽³⁾ MTCDTIP-LVW2-267A-915 ⁽³⁾ MTCDTIP-LVW2-267A-915/2 ⁽³⁾	

VIII. Ordering Part Numbers Impacted (continued)

The following ordering part numbers are impacted by these updates:

Model Name	Ordering Part Numbers	
Conduit® IP67 Geolocation Base Stations		
Status: Active ⁽²⁾	Status: Active ⁽²⁾	Status: NEOL ⁽³⁾
MTCDTIP-L4E1-270A-868 ⁽²⁾	MTCDTIP-L4N1-270A-915 ⁽²⁾ MTCDTIP-L4N1-275A-915 ⁽²⁾	MTCDTIP-LAT1-270A-915 ⁽³⁾ MTCDTIP-LAT1-275A-915 ⁽³⁾ MTCDTIP-LEU1-270A-868 ⁽³⁾ MTCDTIP-LEU1-275A-868 ⁽³⁾ MTCDTIP-LVW2-270A-915 ⁽³⁾ MTCDTIP-LVW2-275A-915 ⁽³⁾
Conduit® AP Access Points		
Status: Active ⁽²⁾	Status: Active ⁽²⁾	Status: NEOL ⁽³⁾
MTCAP-868-001A ⁽²⁾ MTCAP-IN865-001A ⁽²⁾ MTCAP-915-001A ⁽²⁾ MTCAP-LNA3-915-001A ⁽²⁾ MTCAP-LSP3-915-001A ⁽²⁾ MTCAP-915-041A ⁽²⁾ MTCAP-LSP3-915-041A ⁽²⁾	MTCAP-L4E1-868-041A ⁽²⁾ MTCAP-868-041A ⁽²⁾ MTCAP-L4E1-868-001A ⁽²⁾ MTCAP-LNA3-915-041A ⁽²⁾ MTCAP-LAP3-915-041A ⁽²⁾ MTCAP-LAP3-915-001A ⁽²⁾	MTCAP-LEU1-868-001A ⁽³⁾

Footnotes:

	Hardware Status	Manufacturing Updates	Comments
(1)	New	October 2020	<ul style="list-style-type: none"> • New device that is shipping for the first time • Some customers may be testing devices with an earlier version of mPower firmware or a beta version of mPower firmware • MultiTech recommends that customers update this hardware to mPower 5.3.X firmware
(2)	Active	January 2021	<ul style="list-style-type: none"> • Active devices continue to ship with earlier mPower versions for the next 60 to 90 days • Customers are encouraged to evaluate mPower 5.3.X firmware prior to this transition
(3)	NEOL	n/a	<ul style="list-style-type: none"> • NEOL devices continue to ship with earlier mPower versions • Devices can be individually updated by customers

VII. mPower™ Edge Intelligence

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

mPower Edge Intelligence 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 Edge Intelligence incorporates a host of security features including signed firmware validation, enhanced firewall and VPN settings, secure authentication and more.

VIII. Conduit® IoT Gateways

Conduit® family of products is the industry's most configurable, manageable, and scalable cellular communications gateways for industrial IoT applications. Network engineers can remotely configure and optimize their Conduit performance through DeviceHQ®, the world's first IoT Application Store and Device Management platform. The award-winning Conduit series comes in three variants designed to address specific IoT gateway use cases:

- **Conduit**: Indoor industrial gateway, ideal for environments that require metal casing for protection against particles and debris and require an industrial temperature range.
- **Conduit IP67 Base Station**: Outdoor IP67-rated gateway ideal suited for performing in harsh environments such as rain, snow, extreme heat, and high winds.
- **Conduit AP**: Indoor access point ideal for commercial environments (e.g., hotels, offices, retail facilities) to deepen LoRa coverage in difficult to reach places where cell tower or rooftop deployments may not perform as well.

IX. Additional Information

If you have any questions regarding this Product Change Notification/Software Release Notice, please contact your MultiTech sales representative or visit the technical resources listed below:

World Headquarters – USA

+1 (763) 785-3500 | sales@multitech.com

EMEA Headquarters – UK

+(44) 118 959 7774 | sales@multitech.co.uk

MultiTech Developer Resources:

www.multitech.net

An open environment where you can ask development related questions and hear back from MultiTech engineering or a member of this community.

Knowledge Base:

<http://www.multitech.com/kb.go>

Immediate access to support information and resolutions for all MultiTech products.

MultiTech Support Portal:

<https://support.multitech.com/support/login.html>

Create an account and submit a support case directly to our technical support team.

MultiTech Website:

www.multitech.com