Product Change Notification
Software Release Notice

MultiTech® Conduit®
Family of Programmable Gateways:
Conduit IoT Programmable Gateway
Conduit IP67 Base Station,
and Conduit AP Access Point

mPower™ Edge Intelligence
mPower 5.2.X Firmware Available

Date: June 2, 2020

Product Change Notification Number
PCN 06022020-001

I. Overview
MultiTech announces updated firmware versions for the MultiTech® Conduit® family of products, including:
- MultiTech® Conduit® AP Access Point
- MultiTech® Conduit®
- MultiTech® Conduit® IP67 Base Station

Contents

The purpose of this Software Release Notice is to alert customers that updated code is available for evaluation and to provide customers important information on this new release.

New mPower versions:
- MTCAP 5.2.X (Conduit AP Access Point)
- MTCDT 5.2.X (Conduit and Conduit IP67 Base Station)

II. Schedule
There are multiple versions of mPower Edge Intelligence firmware available for customer evaluation and final release.
- Downloadable Versions
  - MTCAP 5.2.X Availability: May 28, 2020
  - MTCDT 5.2.X Availability: May 28, 2020
  - Conduit models: visit http://www.multitech.net/developer/downloads/
  - Instructions: Upgrading Firmware Using Device Web Interface
- Manufacturing
  - See Ordering Numbers Impacted for details on when MTCAP 5.2.X and MTCDT 5.2.X will be available for different devices
- DeviceHQ®
  - Cloud-based IoT Device Management
  - MTCAP 5.2.X Availability: May 28, 2020
  - MTCDT 5.2.X Availability: May 28, 2020
  - https://www.devicehq.com/sign_in
  - Instructions: Upgrading Firmware Using DeviceHQ

III. 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.

IV. Models Impacted
The following Conduit models are impacted by these firmware updates:
- Conduit® IoT Programmable Gateway
- Conduit® IoT Programmable Gateways with LoRa Accessory Cards
- Conduit® IP67 Base Station
- Conduit® IP67 Geolocation Base Station
- Conduit® AP Access Point

For a specific list of the ordering part numbers impacted, reference Ordering Part Numbers Impacted

V. Release Guidelines

With each new mPower firmware release, the following release guidelines are followed. For a specific list of the ordering part numbers impacted, reference Ordering Part Numbers Impacted

Hardware Status	Manufacturing Updates	Comments
New	May 2020	• 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 5.2 firmware
Active	August 2020	• Active devices continue to ship with earlier mPower versions for the next 60 to 90 days • Customers are encouraged to evaluate mPower 5.2 firmware prior to this transition
NEOL	n/a	• NEOL devices continue to ship with earlier mPower versions • Devices can be individually updated by customers
EOL	n/a	• EOL devices are no longer available for sale from MultiTech and not supported in mPower 5.2 firmware • Technical inquiries: email support@multitech.com • Sales inquiries: email sales@multitech.com

VI. mPower 5.2.X Overview

Minimum System Requirements (MTCAP 5.2.X, MTCDT 5.2.X)

To install mPower 5.2.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:

Conduit Models:
- mPower AEP 1.7.4
    1. Upgrade to mPower 5.0.0
    2. Install mPower 5.2.X
- mPower AEP 1.6.4
    1. Upgrade to mPower AEP 1.7.4
    2. Upgrade to mPower 5.0.0
    3. Install mPower 5.2.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 5.2.X

New Features (MTCAP 5.2.X, MTCDT 5.2.X):

mPower 5.2.X versions include the following new features:

1. Radio Support:
   - Added support for Telit LE910-SV-1 (-LVW3 models) LTE Category 1 cellular modem [GP-359]
   - For a complete list of cellular radios supported in mPower 5.2.X, reference cellular radios supported.
2. Verizon APN: Setting for Verizon APN is now configurable to override what is in the PDP context [GP-33, GP-435]
3. Security (/tmp Director Change) [GP-59]
   - The /tmp directory includes the following permissions: noexec, nosuid, nodev (default noexec)
   - This change affects any custom applications that try to run scripts in that directory.
   - Custom applications can no longer be executed from this directory.
4. Added PPP Configurability: [GP-274]
   - IP mode in the PDP context is configurable (ipb6cp-max-configure *n*)
   - Maximum number of IPv6CP configure-request transmissions, default 10 (ipb6cp-max-failure *n*)
   - Maximum number of IPv6CP configure-NAKs returned before starting to send configure-rejects, default 10 (ipv6cp-max-terminate *n*)
   - Maximum number of IPv6CP terminate-request transmissions, default 3 (ipv6cp-restart *n*)
   - Set the IPv6CP restart interval (retransmission timeout), default 3 seconds
5. MTU Support: Support added for MTU and other connection settings through Web UI and API [GP-341]
6. arping Requests: Enhancement to use arp'ing to broadcast IPs on interfaces. This enhancement was implemented in order to improve Web UI responsiveness after a reboot. [GP-343]
7. Packet Forwarder, Listen Before Talk: After several hours, the listen before talk functionality fails to block transmission. In mPower 5.2.X, the LBT process can be restarted without affecting the packet forwarder receive capabilities. [GP-524]

API Command Changes (MTCAP 5.2.X, MTCDT 5.2.X):

The Conduit devices use the RESTful JSON API for managing configurations, polling statistics, and issuing commands. mPower MTCAP 5.2.X and mPower MTCDT 5.2.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 5.1 to mPower 5.2.X):
> http://www.multitech.net/developer/software/mtr-software/mtr-api-reference/api-changes/

Feature Enhancements (MTCAP 5.2.X, MTCDT 5.2.X):

mPower 5.2.X versions include the following feature enhancements:

1. Reduced Boot Time Previous versions of mPower resulted in longer boot times. mPower 5.2.X includes new features and optimization that decrease the device boot time up to 25% [GP-256, GP-360, GP-362, GP-363, GP-364]
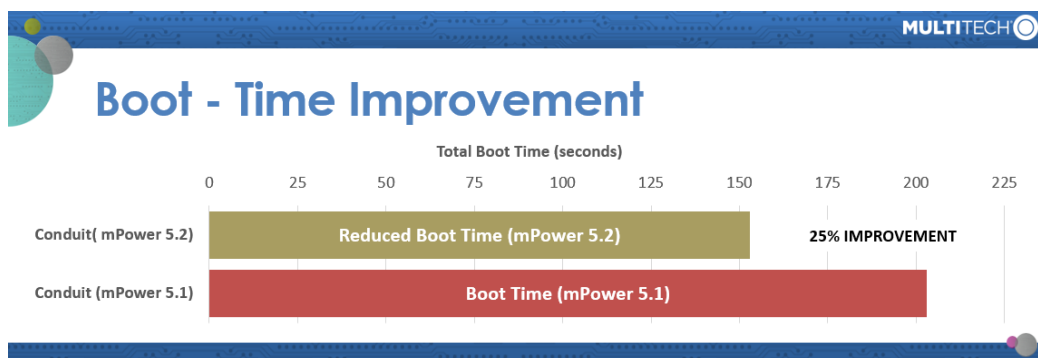
2. Shutdown Time Optimization: When restarting a device, the total time to reboot also includes shutdown time. Previous versions of mPower resulted in longer shutdown times. mPower 5.2.X has been updated to reduce shutdown time. Conduit mPower shutdown time has been shortened by 30%.
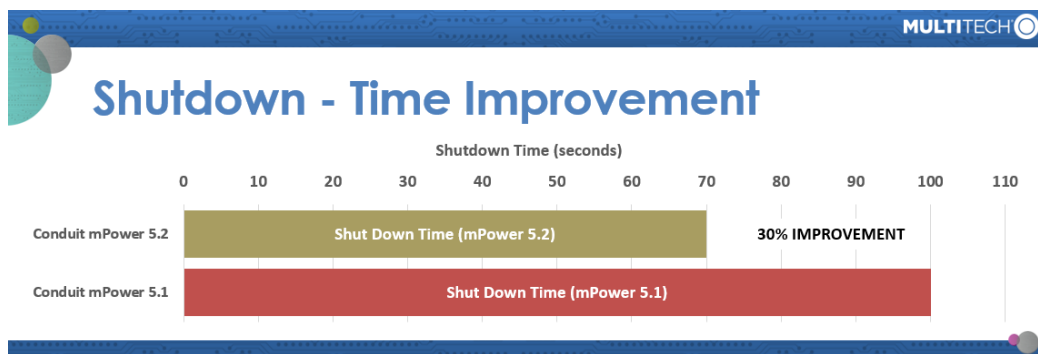
3. Save and Apply Configuration Settings without Restarting: Previous versions of mPower required a device reboot for most system configuration settings. mPower 5.2.X has been updated to save and apply many configuration settings without the need to restart. In these cases, the user will be presented a "Save and Apply" button after making configuration settings. If "Cancel" is selected, changes are not saved. [GP-339]
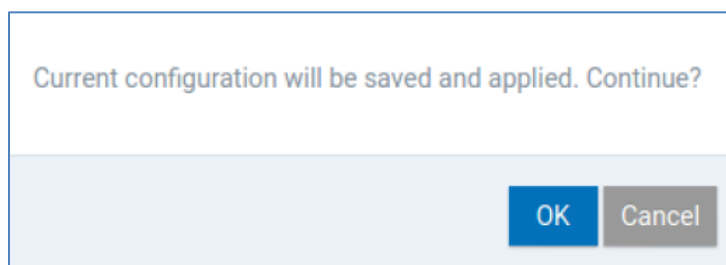
A limited number of system configuration setting changes will still require the device to be restarted. In these cases, the user will be presented with a "Save and Reboot" button after making configuration settings. If "Cancel" is selected, changes are not saved.

To apply the changes that you made the system reboot is required. Click OK to apply the changes and reboot the device.

OK   Cancel
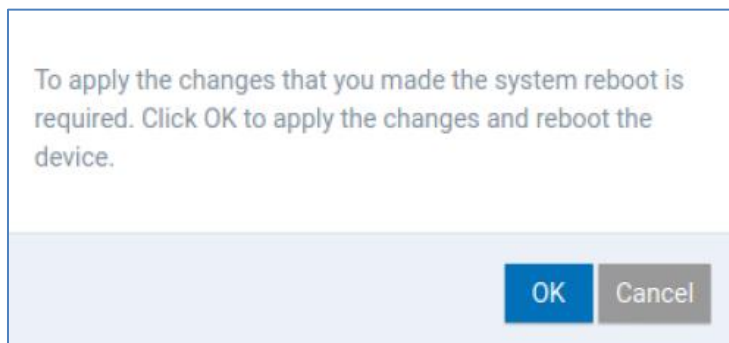
Only the following configuration changes will still require a reboot.

Functionality	Description
Access Configuration → Brute Force Prevention	Brute Force Prevention prevents brute force password authentication attacks (requires API restart)
Access Configuration → Session Timeout	This is the amount of inactivity time that a logged in Web UI user can have before being logged out. (requires API restart)
Debug Options	Log level in API requires a reboot (requires an API restart)
Network Interfaces Configuration	Due to the nature of all the things impacted by changing an interface IP, or other configuration item, a reboot will still be required.
X.509 Certificates (Web Server Certificate)	Due to the number of things changing the certificate affects (lighttpd and API primarily) it still requires a reboot.
Firmware Upgrade	Required for applying upgrade
Restore Configuration	All the features that require a reboot (since their configuration can be changed by this feature) force this feature to require a reboot also.
Cellular Configuration	Enable/Disable PPP/WWAN will require a reboot
Wi-Fi as WAN	Enable/Disable WLAN0 (WiFi-As-WAN)

1. Radio Support:
   - It has been deemed best practice to de-register the cellular radio before setting the PDP context and re-registering [GP-438]
   - The firmware will check if the PDP context values are correct. If the IP mode and APN are already correct, do not make changes to PDP context. In earlier mPower versions, PDP context changes were applied no matter what the state in the PDP context, which proved to be problematic [GP-439]
   - When checking registration on LTE cellular radios, if CREG, CGREG, and/or CEREG are available, the firmware needs to check for registered status. If any one of these returns a registered status, then device can proceed to connect [GP-440]
   - When using roaming SIMs, if 0,5 is returned by any of the registration check commands, the device can be treated as "registered" and create a connection to the network [GP-441]
2. SMS Storage:
   - Earlier versions of mPower firmware stored SMS messages on the SIM card.
   - In mPower 5.2.X, this has been changed and now SMS messages are stored on the cellular radio.
   - This change resolves SMS send and receive failures. [GP-515]
3. ppp_pre_chat Updates: Earlier mPower versions execute some separate paths for FWSWITCH radios that do the exact same thing for the different modes including PDP context handling. mPower 5.2.X has been updated to handle these requests in the same manner whenever possible [GP-327]
4. Cellular Radio Reset: Customer feedback has reported that occasionally, the cellular radio needs to be reset when it is unable to register on the wireless network. mPower 5.2.X has been updated to include a new option to help resolve this issue: "Radio Reset Registration Failure" [GP-443]
5. Node-Red Log: Node-Red log and log rotate updates. This change supports Node-RED logging and rolling the log as it grows. Previously Node-RED logging has been turned off by default, causing some devices to reboot due to the RAMFS taking up all the memory. [GP-354 and GP-147]
6. LoRa Network Server Update: The LoRa Network Server has been updated to v 2.3.10. Previous mPower releases supported version 2.3.0
7. LoRa WAN Updates:
   - SPI path added to all utilities [GP-448]
   - Add Multicast option to session pop-up box. Three options: OFF, B or C [GP-474]
   - LoRa Channel Plans: Added support for ISM2400 channel plan and MTAC-LORA-2G4-3 gateway access card
8. Support for Passive FTP Sessions: Users can enable nf_conntrack_helper when they create FTP rules in the web user interface [GP-516]
9. Web User Interface: HTML 5 Updates: Local storage issue was causing unresponsive user interface after device was updated to mPower 5.1.5. mPower 5.2.X has been updated to correct this issue. [GP-521]
10. DeviceHQ Custom Application Support: When installing a new application, the backup of the original application will now be optional. If the installation of the new application fails, the original application will not be restored. [GP-540]
11. Lightpd Version Update: lighttpd updated to version 1.4.48 [GP-552]

Bug Fixes (MTCAP 5.2.X, MTCDT 5.2.X):
mPower 5.2.X versions include the following fixes to bugs that were identified in earlier mPower versions:
1. GRE Tunnel. In mPower 5.0 versions, the network interface configuration was changed and in some cases worked incorrectly. In mPower 5.2.X, GRE Tunnel IP address has been added to the GRE tunnel configuration page to correct this issue. [GP-336]
2. Tx Continuous Attenuator: Util Tx continuous attenuator setting was not getting set. This has been corrected in mPower 5.2.X [GP-449]

3. Remote Management Repeatable Time Option: When Remote Management (DeviceHQ) is enabled and repeatable option set at Daily, an extra colon is added to the end of the time (i.e. 9:00:). Functionally, this works but the user receives an "Invalid Repeat Time" message because of the extra colon. This has been corrected in mPower 5.2.X [GP-499]
4. LoRaWAN: Downlink queue page shows the same packet for each detail link. Page has been updated and shown as packets deleted based on packet if field. [GP-508]
5. User-Interface Dialog Box Update: When the browser window is small enough for a hidden left menu, if the user selects one of the Commands options a pop-up with "OK | Cancel" is provided. The user cannot reach the dialog as it is behind the progress overlay. In full size browser this does not happen. This has been corrected in mPower 5.2.X [GP-522]
6. API Updates: Several API commands have been reported to be susceptible to OS command injection strings. In mPower 5.2.X, the following characters and sequences (separated by commas) are now prohibited in API commands that use the system() call: &, &&, |, ||, ;, $ `, 0x0a, \n [GP-541]
7. –L4E1 (3G behavior): Improved performance with configurable MTU size. Default is set at 1228. [GP-542]
8. User Interface Updates: The following user interface issues have been corrected in mPower 5.2.X [GP-543]
   - NodeRed: The development app is in the "Updating" state when trying to run it instead of other Node Red app [GP-549]
   - Firmware Upgrades: On firmware upgrade, some downloads can result in memory overuse. If firmware upgrade is successful, there is no issue [GP-550]
   -

Known Behaviors (MTCAP 5.2.X, MTCDT 5.2.X)
1. Packet Forwarder, Listen before Talk. After several hours, the listen before talk functionality fails to block transmission (FPGA firmware V33, MTCAP and MTAC-LORA-XXX)
2. OpenVPN Tunnel Names. [MTX3353]
   - In earlier versions of mPower firmware, customers have created OpenVPN tunnel names that include spaces.
   - After upgrading to mPower 5.0, mPower 5.1, or mPower 5.2.X, the device can become inaccessible due to the spaces in the OpenVPN tunnel name.
   - Customers are encouraged to rename OpenVPN tunnel names and remove spaces prior to upgrading to mPower 5.2.X.

Cellular Radio Support (MTCAP 5.2.X, MTCDT 5.2.X):

mPower 5.2.X supports the following cellular radios:

Cellular WAN Support	Wireless Carrier	Firmware Version	
		MTCDT 5.2.X	**MTCAP 5.2.X**
		Conduit & Conduit IP67	Conduit Access Point
3G-HSPA+ Global (-H5 models) Telit HE910-D and Telit HE910-G	AT&T Global	X	
4G-LTE Category 1 Australia (-LAP3 models) Telit LE910C1-AP	Telstra	X	
4G-LTE Category 1 North America (-LAT3 models) Telit LE910-NA1	AT&T	X	
4G-LTE Category 1 North America (-LSP3 models) Telit LE910C1-NS	Sprint		X
4G-LTE Category 1 North America (-LNA3 models) Telit LE910-NA1 ATT-VZW	AT&T Verizon		X
4G-LTE Category 1 Japan (-LDC3 models) Telit LE910-JN1	NTT Docomo	X	
4G-LTE Category 1 Japan (-LSB3 models) Telit LE866A1-JS	Softbank	X	
4G-LTE Category 1 North America (-LVW3 models) Telit LE910-SV-1	Verizon	X	
4G-LTE Category 3 Europe (-LEU1 models) Telit LE910-EUG	European Carriers	X	X
4G-LTE Category 3 North America (-LAT1 models) Telit LE910-NAG	AT&T	X	
4G-LTE Category 3 North America (-LVW2 models) Telit LE910-SVG	Verizon	X	
4G-LTE Category 4 Europe (-L4E1 models) Telit LE910C4-EU	European Carriers	X	X
4G-LTE Category 4 North America (-L4N1 models) Telit LE910C4-NF	AT&T Verizon	X	X

VII. Upgrading Firmware

Upgrading Using DeviceHQ

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

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

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

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_5.2_upgrade-signed.bin**
    - **conduit_5.2_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.
7. If you want to save any Node-RED applications, you have two options:
    - If you have a DeviceHQ account, upload Node-Red apps to DeviceHQ. (Recommended)
    - If you do not have a DeviceHQ account, save Node-RED apps you want to keep. Node-RED flows are stored on the Conduit at **/var/config/app/current/flows.json**. You can export flows to the clipboard from the Node-RED menu or use a tool like WinSCP or SCP in Cygwin to copy **flows.json** to your PC.

VIII. 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]

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**	May 2020	• 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 5.2.X firmware
(2)	**Active**	August 2020	• Active devices continue to ship with earlier mPower versions for the next 60 to 90 days • Customers are encouraged to evaluate mPower 5.2.X firmware prior to this transition
(3)	**NEOL**	n/a	• NEOL devices continue to ship with earlier mPower versions • Devices can be individually updated by customers

IX. Future mPower Firmware Release

The next version of mPower is anticipated to be released in the autumn of 2020. This release will include:

- New cellular radio support
- New features, feature improvements and bug fixes

This release will also some major changes that customers should be aware of:

1. Upgrade to Yocto 2.6.4 (codename: Thud)
    - Current mPower versions are built using Yocto 2.2.4 (codename: Morty).
2. Upgrade to TLS 1.3
    - 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
3. Node RED support removed
    - The requirement to add TLS 1.3 comes at the expense of Node RED
    - Node RED is a flow-based development tool for visual programming
    - Current mPower versions support Node RED version 0.15.3
    - Customers that are interested in continued use of Node RED should plan on using mPower 5.2.X or earlier mPower versions
    - Customers that are interested in transitioning their Node RED flows to JavaScript programming language should contact https://support.multitech.com
    - MultiTech plans to continue support of Node RED in a new product: Conduit 300. The Conduit 300 is currently available as a developer kit and is expected to be released for general availability in late 2020.

X. 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.

XII. 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

mPower Edge Intelligence Firmware: Currently Shipping Versions (May 12, 2020)

Conduit Model Number	mPower Firmware Version	Link to Release Notes
MTCAP (EN-Only) models	MTCAP 5.1.6	5.1.6 RELEASE NOTES
MTCAP-LEU1 models	MTCAP 1.7.5	1.7.4 RELEASE NOTES
MTCAP-LNA3 models	MTCAP 5.1.6	5.1.6 RELEASE NOTES
MTCAP-LSP3	MTCAP 5.1.6	5.1.6 RELEASE NOTES
MTCAP-L4E1	MTCAP 5.1.6	5.1.6 RELEASE NOTES
MTCDT (EN-Only) models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-H5 models	MTCDT 5.0	5.0 RELEASE NOTES
MTCDT-L4E1 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-L4N1 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-LAP3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-LAT1 models	MTCDT 5.0	5.0 RELEASE NOTES
MTCDT-LDC3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-LEU1 models	MTCDT 1.7.4	1.7.4 RELEASE NOTES
MTCDT-LSB3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDT-LVW2 models	MTCDT 5.0	5.0 RELEASE NOTES
MTCDTIP (EN-Only) models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-L4E1 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-L4N1 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-LAP3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-LAT1 models	MTCDT 5.0	5.0 RELEASE NOTES
MTCDTIP-LDC3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-LEU1 models	MTCDT 1.7.4	5.0 RELEASE NOTES
MTCDTIP-LSB3 models	MTCDT 5.1.6	5.1.6 RELEASE NOTES
MTCDTIP-LVW2 models	MTCDT 5.0	5.0 RELEASE NOTES

All models can be upgraded to mPower MTCAP 5.2.X or MTCDT 5.2.X using the DeviceHQ or the Web Interface.