

Product Change Notification

MultiConnect® rCell 100 Series Cellular Routers

LTE Category 4 Devices Only

- **Substitute Components Available**
- **mPower™ Edge Intelligence Software**
mPower MTR 5.3.6



Date: November 1, 2021

Product Change Notification (PCN) Number

PCN 10272021-003 (mPower - MTR)

I. Overview

In response to the global demand for semiconductors and microelectronics, MultiTech has qualified substitute components for LTE Category 4 models of MultiConnect rCell 100 Series Cellular Routers (MTR). In addition to substitute components, an updated version of mPower Edge Intelligence Software is required.

Schedule:

- Starting in December 2021, MultiTech will also ship MTR LTE Category 4 devices with substitute components
- Starting in December 2021, MTR LTE Category 4 devices shipping from MultiTech will require mPower MTR 5.3.6
- See [part numbers impacted](#) for details
- See [mPower MTR 5.3.6 Schedule](#) for Date of Manufacture details

II. Suggested Action Plan

Customers

1. Download mPower MTR 5.3.6
2. Evaluate in their environment
3. Additional information
 - Technical inquiries: support.multitech.com
 - Sales inquiries: email sales@multitech.com

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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 that MTR LTE Category 4 devices are also shipping with substitute components and an updated version of mPower firmware
- Encourage customers to evaluate mPower MTR 5.3.6 in their environment and update deployed devices as needed.

Overview of Changes

MultiConnect rCell 100 Series Cellular Routers	MTR Original Design	MTR Substitute Components
Models Impacted	MTR-LEU7 MTR-LNA7	MTR-LEU7 MTR-LNA7
New Model Numbers	Existing model numbers will continue to be used regardless of design and components	
Technical Overview of Hardware Change	Peripherals connected to microprocessor using an internal USB Hub	Peripherals connected directly to the microprocessor
Hardware Version (*)	MTRV1-0.3	MTRV1-0.4
Legacy mPower Versions	MTR 5.3.X MTR 5.2.X MTR 5.0.X	MTR 5.3.6 only
mPower Downgrade Protection	n/a	Downgrade protection prevents earlier versions of mPower from being loaded
Date of Manufacture	Starting February 2020 DOM 2020.02.01	Starting December 2021 DOM 2021.12.01

III. MTR Substitute Components

The original MTR LTE Category 4 devices requires a USB hub to connect device peripherals (GPS, cellular, Ethernet, etc.) to the MTR processor. The longer lead time associated with the USB hub (and other components) challenges MultiTech's shipping schedule and our customers' deployment schedules.

MultiTech has qualified substitute components for MTR LTE Category 4 devices to reduce the need for longer lead time components. Starting in December 2021, MTR LTE Category 4 devices ship with:

1. Original components (including USB hub)
and
2. Substitute components (USB hub removed)

IV. Identifying MTR Hardware

Some customers may need to understand if they are using an MTR LTE Category 4 device with original components or substitute components.

- MTR device with original components -- “MTRV1-0.3”
- MTR with substitute components -- “MTRV1-0.4”

1. **Model Numbers:** New model numbers are not required. Existing model numbers will continue to be used regardless of components.

2. **API Commands:**

The MTR uses RESTful JSON API for managing configurations, polling statistics, and issuing commands. Executing either of the following API commands will return the hardware version of the MTR device:

- API Commands:
 - <https://192.168.2.1/api/system>
 - <https://192.168.2.1/api/system/hardwareVersion>
- Instructions:
 1. Log into the MTR device using a web browser
 2. Open a new tab and enter <https://192.168.2.1/api/system> or <https://192.168.2.1/api/system/hardwareVersion>
 - Command is case sensitive
 - Change the device IP address if necessary
 3. Press Enter
 4. MTR device returns one of the following responses
 - “**hardwareVersion**” : “**MTRV1-0.3**”, - MTR device with original components
 - “**hardwareVersion**” : “**MTRV1-0.4**”, - MTR with substitute components
- API Reference: http://www.multitech.net/developer/software/mtr-software/mtr-api-reference/rcell_api_appendix/find-out-the-hardware-version/

3. DeviceHQ:

MultiTech DeviceHQ® is a cloud-based tool set for managing the latest generation of MultiTech devices, including the MTR devices. On the **DeviceHQ Device Page**, ensure that the Hardware field is chosen as a column selection in order to identify the hardware version.

The screenshot shows the MultiTech DeviceHQ interface. The 'Columns' menu is open, and the 'Hardware' option is selected. A callout box highlights the 'Hardware' selection.

Description	Product	Serial	MAC	Group	Device Logs	Actions	Firmware	Hardware	Cell Provider	Checked-in	Location
Device 1	MTR-LEU7	12345678	00:00:00:00:00:00		Every check-in		5.3.6	MTRV1-0.3	Unknown	20 minutes	
Device 2	MTR-LNA7	23456789	00:00:00:00:00:00		Every check-in		5.3.6	MTRV1-0.4	Unknown	20 minutes	

Once this selection is made, the DeviceHQ dashboard will show the hardware version of each device:

- **MTRV1-0.3** - MTR device with original components
- **MTRV1-0.4** - MTR with substitute components

The screenshot shows the MultiTech DeviceHQ interface with the 'Hardware' column selected in the device list table.

Description	Product	Serial	MAC	Group	Device Logs	Actions	Firmware	Hardware	Cell Provider	Checked-in	Location	Interval	Uptime
Device 1	MTR-LEU7	12345678	00:00:00:00:00:00		Every check-in		5.3.6	MTRV1-0.3	Unknown	20 minutes		4.00 hrs	1 day
Device 2	MTR-LNA7	23456789	00:00:00:00:00:00		Every check-in		5.3.6	MTRV1-0.4	Unknown	20 minutes		4.00 hrs	1 day

V. mPower MTR 5.3.6 Overview

MTR 5.3.6 is built upon MTR 5.3.5.

For details about MTR 5.3.5, refer to [Software Release Notes - MTR 5.3.5](#)

New Hardware Support (mPower MTR 5.3.6)

mPower MTR 5.3.6 includes support for MTR LTE Category 4 devices:

- Original components (including USB hub)
- Substitute components (USB hub removed)
- mPower MTR 5.3.6 is required for all MTR LTE Category 4 devices that ship from MultiTech starting in December 2021.
- See [mPower MTR 5.3.6 Schedule](#) for Date of Manufacture details
- [GP-1386]

New Features (mPower MTR 5.3.6):

- mPower MTR 5.3.6 includes the features and bug fixes introduced in mPower MTR 5.3.5 and earlier mPower versions.
- mPower MTR 5.3.6 is required for all MTR LTE Category 4 devices that ship from MultiTech starting in December 2021.
- See [mPower MTR 5.3.6 Schedule](#) for Date of Manufacture details

Feature Enhancement (mPower MTR 5.3.6):

1. Downgrade Protection:
 - a. mPower 5.3.6 includes a means of identifying the MTR LTE Category 4 device (original components or substitute components) and limit the version of mPower that customers can use
 - i. Original Components: Downgrade to legacy mPower MTR versions is allowed
 - ii. Substitute Components: Downgrade is not available.
 - Devices with substitute components can only be used with mPower MTR 5.3.6 and later
 - Future mPower versions will not downgrade to versions of mPower prior to mPower MTR 5.3.6
 - b. The downgrade protection feature prevents customers from downgrading the MTR device to an unsupported version of mPower software.
 - c. DeviceHQ will include a similar feature that prevents customers from downgrading the MTR device to an unsupported version of mPower software.
 - d. Error Messages:

If a user attempts to downgrade the MTR with substitute components to an incompatible firmware version, an error message will be displayed:

 - Downgrade using API Command: "Firmware check failed. Invalid firmware version for [MTRV1-0.4] hardware."
 - Downgrade using DeviceHQ: "Software check failed. Invalid firmware version for [MTRV1-0.4] hardware."
 - e. [GP-1386]

VI. mPower MTR 5.3.6 Schedule

mPower Edge Intelligence firmware is available for customer evaluation and final release. In addition to the MTR devices shipping from MultiTech, DeviceHQ and the MTR device user interface can be used to update devices with earlier versions of mPower.

- Manufacturing (MTR LTE Category 4 devices with original components or substitute components)
 - mPower MTR 5.3.6 Availability: December 2021
 - Date of Manufacture: 2021.12.01
 - See [part numbers impacted](#) for details
 - Identifying Date of Manufacture (chassis label)



DOM: 2021.12.01
DOM = Date of Manufacture
2021 = Year
12 = December
01 = Day

- DeviceHQ
 - Cloud-based IoT Device Management
 - mPower MTR 5.3.6 Availability: November 2021
 - DeviceHQ login: https://www.devicehq.com/sign_in
 - Instructions: [Upgrading Firmware Using DeviceHQ](#)
- Downloadable Versions
 - mPower MTR 5.3.6 Availability: November 2021
 - Visit <https://www.multitech.com/brands/multiconnect-rcell-100-series>
 - Locate and select the correct model number from the Product Listing
 - Visit DOWNLOADS tab and select mPower 5.3.6 from the list of available firmware downloads
 - Instructions: [Upgrading Firmware Using Device Web Interface](#)
- Delta File Versions
 - mPower MTR 5.3.0 – mPower MTR 5.3.6 delta file
 - Availability: November 2021
 - Available by request through the MultiTech Support Portal (support.multitech.com)
 - Only needed for MTR LTE Category 4 devices with original components

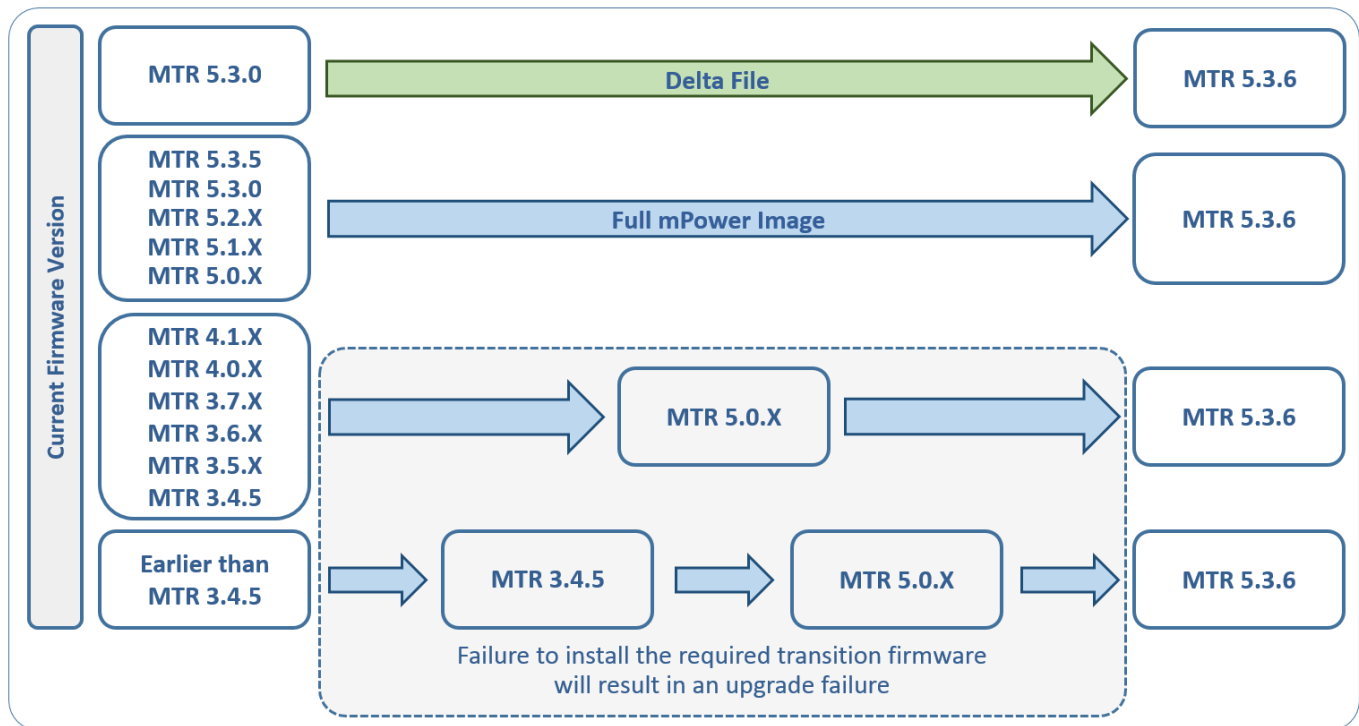
VII. mPower MTR 5.3.6 Upgrade Process

At any time in the upgrade process, customers can contact support.multitech.com.

Minimum System Requirements (mPower MTR 5.3.6) – MTR LTE Category 4 Device with Original Components

To install mPower MTR 5.3.6, the MTR LTE Category 4 device must be upgraded to MTR 5.0.0 or higher.

Customers that are running earlier versions of mPower must use the following upgrade process:



Minimum System Requirements (mPower MTR 5.3.6) – MTR LTE Category 4 Device with Substitute Components

mPower MTR 5.3.6 is already installed on MTR LTE Category 4 devices with substitute components.

VII. mPower MTR 5.3.6 Upgrade Process (continued)

Upgrade Using MultiTech DeviceHQ

At any time in the upgrade process, customers can contact support.multitech.com.

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**.

Updating Multiple Devices

- It is recommended that updates be scheduled for no more than 25 devices at one time
- If more than 25 devices are to be updated, schedule the second group of 25 devices after the first 25 updates are complete
- Continue scheduling groups of 25 devices until the entire fleet is updated
- Refer to help file within DeviceHQ for more information

Upgrade Using Device Web Interface

At any time in the upgrade process, customers can contact support.multitech.com.

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. Before upgrading, reboot the device.
2. Visit <https://www.multitech.com/brands/multiconnect-rcell-100-series>
3. Locate and select the model number from the product listing
4. For the model number selected, open the DOWNLOADS menu
5. Select the latest firmware version. Download and unzip it to a known location
6. Open the device web interface
 - a. Select **Administration > Firmware Upgrade**. The Administration: Firmware Upgrade pane opens
 - b. Click **Choose Firmware Upgrade File** button:
 - i. Click **Browse** to find where the firmware file resides that you want to apply

- ii. Select the file and click **Open**. The file name appears next to the **Choose Firmware Upgrade File** button. Make sure you select the correct BIN file; otherwise, your device can become inoperable.
- c. Click **Start Upgrade**.
- d. A message about time needed to upgrade appears. Click **OK**. A progress bar appears indicating the status of the upgrade. When upgrade is completed, your device reboots.
- e. After the firmware upgrade is complete, verify your configuration to make sure it is what you expected.

Notes:

- The new firmware is written into flash memory.
- It may take up to 10 minutes to upgrade the firmware. Do not interfere with the device power or press the reset button during this time.

VIII. Ordering Part Numbers Impacted

The following ordering part numbers are impacted by the MTR with substitute components and mPower MTR 5.3.6:

Model Name Ordering Part Numbers	
MultiConnect® rCell 100 Cellular Routers	
Status: Active ⁽¹⁾	Status: Active ⁽¹⁾
MTR-LNA7-B07 ⁽¹⁾	MTR-LEU7-B07 ⁽¹⁾
MTR-LNA7-B07-US ⁽¹⁾	MTR-LEU7-B07-EU-GB ⁽¹⁾
MTR-LNA7-B10 ⁽¹⁾	MTR-LEU7-B10 ⁽¹⁾
MTR-LNA7-B10-US ⁽¹⁾	MTR-LEU7-B10-EU-GB ⁽¹⁾

Footnotes:

	Hardware Status	Manufacturing Updates	Comments
(1)	Active	December 2021	<ul style="list-style-type: none"> • Active devices will start shipping with mPower MTR 5.3.6 • Customers are encouraged to evaluate mPower MTR 5.3.6 and update deployed devices as needed

IX. 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.

X. 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:

support.multitech.com

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

MultiTech Website:

www.multitech.com

ATTACHMENT I

Identifying mPower MTR Version

There are multiple ways of identifying the mPower version on an MTR device:

1. mPower User Interface

- The Home page (dashboard) displays a summary of the configuration settings for the MTR device
- Device - Firmware: mPower Edge Intelligence version

2. DeviceHQ

- MultiTech DeviceHQ® is a cloud-based tool set for managing the latest generation of MultiTech devices, including the MTR devices.
- On the **DeviceHQ Device Page**, ensure that the “Firmware” field is chosen as a column selection
- For all MTR devices assigned to the account, the mPower version will be displayed

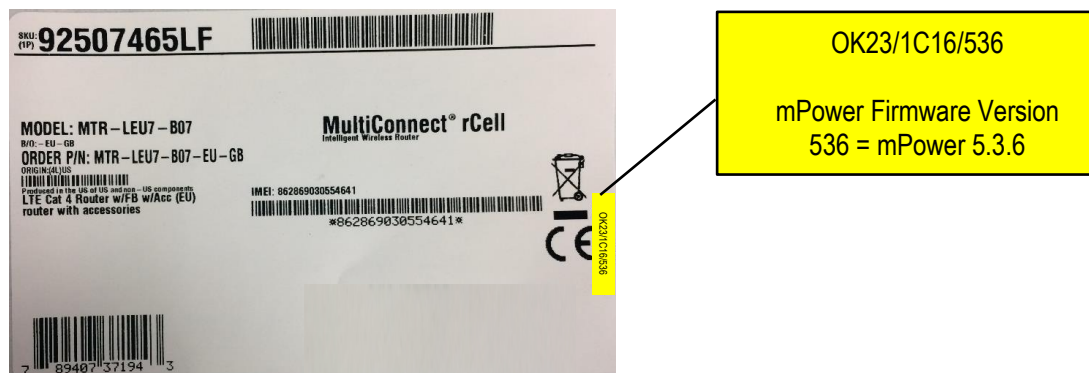
3. API Command

The MTR uses RESTful JSON API for managing configurations, polling statistics, and issuing commands. Executing the following API command will return the mPower version of the MTR device:

- API Command: `https://192.168.2.1/api/system/firmware`
- Instructions:
 1. Log into the MTR device using a web browser
 2. Open a new tab and enter `https://192.168.2.1/api/system/firmware`
 - Command is case sensitive
 - Change the device IP address if necessary
 3. Press Enter
 4. MTR device returns the following. In this example, the mPower version is MTR 5.3.6:
“code” : 200,
“result” : “5.3.6”,
“status” : “success”

4. Product Packaging

The carton label for each MTR includes an indication of the firmware version included.



Revision History

Version	Author	Date	Change Description
-001	DT	10/08/2021	Original version
-002	DT	10/11/2021	Team comments added. DeviceHQ and API Commands added
-003	DT	10/27/2021	Overview of changes added to Section II Error messages added to Section V Attachment I added