

## USB System Update Procedure For INSIGHTqcx and INSIGHTqcd controllers

### Note

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## 1 Purpose of this document

This document describes the procedure to perform a USB System Update (also known as USB Image Update) to update the software on the INSIGHT controllers.

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## 2 Procedures

To perform the USB System Update, you need the “USB Image Update” software file(s) appropriate for your controller. These are typically available via SendSafely. To register for our FileSafe Repository and to request access to our Global Releases see link: <https://irtoolhelp.ingersollrand.com/hc/en-us/sections/12286664085395-Software-Downloads>

In the following procedures these files shall be referred to as update files.

### Notes:

- a. Before performing the USB update, follow the migration process to restore Legacy QCX and QCD controller data to latest multi tool operation platform software (refer section 3.1 & 3.2 for more information)
- b. Before performing the procedures below, verify the checksum on the update file named rootfs.ext4 (refer section 3.3 for more information)

### 2.1 QCX and QCD controllers with external I/O (1000 series)

#### 2.1.1 Prepare the USB drive

- a. Use a USB 2.0 drive with at least 4GB space available, formatted to FAT32; SanDisk is tested to be compatible with the controller, but other USB drive brands may work.
- b. Copy the update files to the USB.

Name	Date modified	Type	Size
boot	8/7/2025 6:10 PM	File folder	
_bkupEmmclmage	8/7/2025 10:43 AM	File	0 KB
blast.sh	8/7/2025 2:46 PM	SH Source File	13 KB
env.txt	9/28/2015 8:17 PM	Text Document	1 KB
readme.txt	7/15/2020 5:25 PM	Text Document	3 KB
rootfs.ext4	8/7/2025 9:46 PM	EXT4 File	3,937,408 ...
tsinit	9/26/2015 2:29 AM	File	1 KB
tsinit.lub	9/25/2015 8:59 PM	UB File	1 KB

#### 2.1.2 Perform the system update


- a. Ensure the controller is OFF. Insert the USB drive into the controller.
- b. Power ON the controller and wait for all 4 LEDs on the front panel to turn GREEN; this may take up to 15 minutes.
- c. Turn OFF the controller and remove the USB drive.
- d. Wait for 1 minute and turn on the controller .

### 2.1.3 Login and check the software version on the About page

## 2.2 QCX and QCD controllers with internal I/O (2000 series)

### 2.2.1 Prepare the USB drive

- a. Use a USB 2.0 drive with at least 4GB space available, formatted to FAT32; SanDisk is tested to be compatible with the controller, but other brands may work.
- b. Copy the update file to the USB as below

Name	Date modified	Type	Size
 rootfs.ext4	4/22/2025 2:01 PM	EXT4 File	3,914,905 KB

### 2.2.2 Perform the system update

- a. Power OFF the controller and wait for 2-3minutes. Insert the USB drive to port number 3 OR 4 (Blue ports) of the controller.
- b. Power ON the controller and wait for 20 seconds. Confirm that the IR logo appears on the display and all four LEDs light up in RED, indicating that the update procedure has started.
- c. Wait up to 10 minutes for the update to complete; the controller will reboot automatically when complete.
- d. Once the controller reboots automatically, wait an additional 30 seconds for the home screen to fully load. After that remove the USB drive from controller.

### 2.2.3 Login & check the software version on the About page

## 3 Appendix

### 3.1 Data migration and restoration on QCX with external I/O (1000 series)

- a. For step-by-step guide see irtoolhelp:  
[Upgrading QCX to the MTC \(Multi Tool Controller\) Platform – IRToolHelp](#)
- b. For video guide see irtoolhelp:  
[\[Video Lecture\] - MTC Upgrade – IRToolHelp](#)

### 3.2 Data migration and restoration on QCD with external I/O (1000 series)

- a. For step-by-step guide see irtoolhelp:  
<https://irtoolhelp.ingersollrand.com/hc/en-us/articles/20072012542483-Updating-a-QCD-Controller-to-the-Multi-Spindle-Platform-Powerhead-or-Single-Spindle>
- b. For Video guide see irtoolhelp:  
[Powerhead - Multi spindle setup – IRToolHelp](#)

### 3.3 How to verify a checksum on Windows

1. Copy the file to a Windows machine
2. Open a Windows command prompt and go to the path where the file is located.
3. Enter the following command on the file called rootfs.ext4  
`certutil.exe -hashfile rootfs.ext4 MD5`
4. It will generate the MD5 checksum, compare this with what is noted in the release.

```
D:\>certutil.exe -hashfile rootfs.ext4 MD5
MD5 hash of rootfs.ext4:
68cb0d959aee48e8f94f5599c0ce01ee
CertUtil: -hashfile command completed successfully.
```

5. If the checksum does not match, it means that the file is not the same as the original file released and **cannot be used**.

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