



**Liebert® GXT5™**

**Firmware Update Procedure**

**5-10K HV, & I Models**

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## Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

# 1. Overview

The GXT5 UPS firmware is easily updated by downloading zip files from the Vertiv website to your computer and then using one of two methods to update the UPS detailed in this document.

- Web interface on the IntelliSlot RDU101 communication card. (Recommended) [Section 3](#)
- Command line interface using a serial connection to the RS-232 port of the UPS. [Section 4](#)

## 2. Preparation

- 2.1 Reserve approximately 10-15 minutes for this update procedure.
- 2.2 If your UPS has a serial number with the first five digits of 20305\*\*\*\*\* or higher, the UPS output will remain on throughout the update.  
**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V140 or lower, you must switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit.**  
**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V150 or higher, you can update the UPS firmware remotely HOWEVER the connected equipment powered from the controllable outlets will be cycled at the end of the update, as the UPS needs to cycle power to the DSP processor to complete the update. Or you can switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit.**  
See [Appendix A](#). Serial numbers can be found on the web interface of the network card in the System folder, on the UPS LCD by selecting the About screen, or on a barcode label on the UPS rear panel.
- 2.3 Power the UPS by the nominal utility AC input source during the update. Battery mode cannot be used. Be sure there are no expected utility outages during the update. If a utility outage happens during the update, the update needs to be restarted.
- 2.4 Download to your computer and unzip the latest update zip file from the [Vertiv website](#) to be used for the update.

## 3. Updating Firmware with RDU101 Card Connection

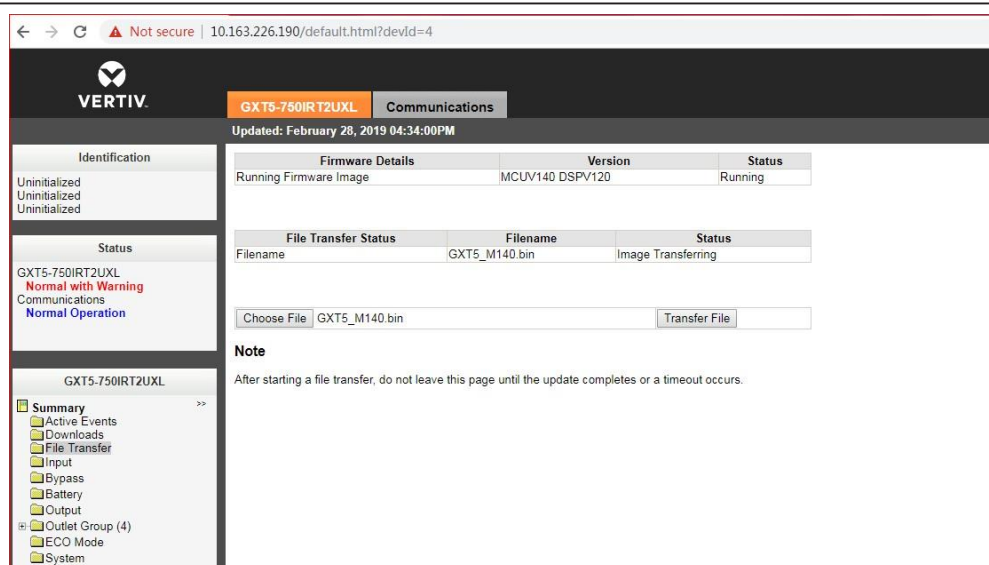
- 3.1 Connect network
  - 3.1.1 Connect a network cable to the RJ-45 Ethernet port of the RDU101 card indicated in Figure 1. For detailed operating instructions for the card, refer to the RDU101 Communications Card Installer/User Guide, available [here](#).
  - 3.1.2 On a computer connected to the same network as the UPS, open a browser window and enter the IP address of the RDU101 card in the address bar. You can get the card's IP address from the UPS LCD. Select the About menu then the Product tab and locate IPv4 address. You may need to scroll up or down to find the correct field. Alternatively, contact your network administrator for the IP address assigned to the UPS. An ad-hoc network directly between the UPS and a PC may also be used with the default IP of [169.254.24.7](#).

**Figure 1 – Network connection to RDU101**



- 3.2 Confirm Bypass Disabled alarm is not active
  - 3.2.1 On the RDU101 web interface, select the GXT5 tab at the top of the page.
  - 3.2.2 Click the Active Events folder in the tab-menu on the left side of the page. Confirm that Bypass Disabled is not shown. If Bypass Disable is shown, see [Appendix B](#). If it is not, proceed to the next step.
- 3.3 Determine Current UPS Firmware Version
  - 3.3.1 On the RDU101 web interface, select the *GXT5* tab at the top of the page.
  - 3.3.2 Click the *File Transfer* folder in the tab-menu on the left side of the page. The current firmware versions will be displayed at the top of the page. Take note of the MCUVXXX version.

**Figure 2 – File Transfer page on the RDU101 Web Interface**



### 3.4 Remove REPO Terminal Block

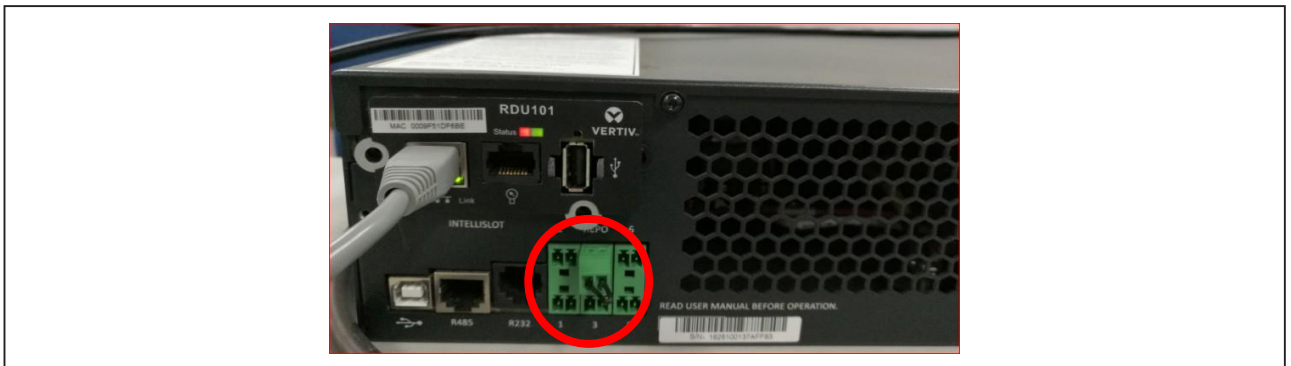
If your UPS has a serial number with the first five digits of 20305\*\*\*\*\* or higher, this step is not necessary. The UPS output will remain on throughout the update.

**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V140 or lower, you must switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit as you MUST remove the small green terminal block labeled *REPO* on the rear panel, see Figure 3.**

***Reminder: This will turn off the UPS output if you did not transfer to maintenance bypass. See Section 2.2 for details.***

**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V150 or higher, you can update the UPS firmware remotely HOWEVER the connected equipment powered from the controllable outlets will be cycled at the end of the update, as the UPS needs to cycle power to the DSP processor to complete the update. Or you can switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit.**

Figure 3 – REPO connection



### 3.5 Firmware File Transfer to UPS

With the 5.30.2020 firmware release (UPS firmware version MCVU180), Vertiv has put in place a security enhancement to only allow Vertiv authentic encrypted firmware files to be transferred to the UPS. Therefore, when updating UPS firmware that is older than the 5.30.2020 release (UPS firmware versions MCVU170, MCVU160, etc.), it will be necessary to first update the UPS to this secure method, and then repeat the update to the latest version. The secure update file is included with each zip download and is named *GXT5LA-EncryptedUpdate-5-10kHV,1.bin*.

3.5.1 On the *File Transfer* page, click *Choose File*, select the upgrade file, and click *Transfer file*.

3.5.2 Enter the Username and Password, then click *Login*. The username and password may have been changed from the default. If so, contact your company's administrator for credentials.

The factory defaults are:

Username: Liebert (case-sensitive)

Password: Liebert (case-sensitive)

3.5.3 Confirm the Firmware Transfer Status field first changes to Image Transferring and then cycles through additional status. Do not leave or close this page.

3.5.4 Confirm after approx. 5 mins the Firmware Transfer Status field changes to Update complete, the UPS restarts, and the web page refreshes after the restart.

3.5.5 Confirm both firmware versions on the File Transfer page match the file loaded.

### 3.6 Reinstall the REPO Terminal Block if Removed

### 3.7 Transfer the UPS to Normal Operation

3.7.1 If the UPS was transferred to Maintenance Bypass, transfer back to Normal operation. See [Appendix A](#) for instructions.

## 4. Updating Firmware with a CLI Connection

You can use the GXT5 command-line interface to update firmware with a computer connected to the RS-232 (RJ-45) port on the rear of the UPS.

### 4.1 Preparation

To perform the update via CLI, you need the following:

- Serial-terminal emulator with Ymodem file transfer capability (for example: ExtraPuTTY)
- RJ-45-to-DB9 serial cable or RJ-45-to-USB serial-to-USB adaptor cable



### 4.2 Serial Connection

- 4.2.1 Connect the RJ-45 connector to the RS-232 port on the UPS. This may be labeled RS-232 or R232 depending on model. See Figure 3 for port location.
- 4.2.2 Connect the DB9/USB connector to the computer with the serial-terminal emulator installed.

Figure 3 – RS-232 Port



### 4.3 Determine Current UPS Firmware Version

- 4.3.1 Determine the version of MCU firmware currently running on the UPS using the UPS LCD by selecting the About menu, then the Product tab, and locate the *Monitor FW version* (MCU) and *DSP FW version* (DSP). You may need to scroll up or down to find the correct field.

### 4.4 Confirm Bypass Disabled alarm is not active

- 4.4.1 On the UPS LCD, select the Log, and confirm that Bypass Disabled is not active in the Current tab. If Bypass Disable is shown, see [Appendix B](#). If it is not, proceed to the next step.

#### 4.5 Remove REPO Terminal Block

If your UPS has a serial number with the first five digits of 20305\*\*\*\*\* or higher, this step is not necessary. The UPS output will remain on throughout the update.

**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V140 or lower, you must switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit as you MUST remove the small green terminal block labeled *REPO* on the rear panel, see Figure 3.**

***Reminder: This will turn off the UPS output if you did not transfer to maintenance bypass. See Section 2.2 for details.***

**If your UPS has a serial number with the first five digits of 20304\*\*\*\*\* or lower, AND your DSP Version is V150 or higher, you can update the UPS firmware remotely HOWEVER the connected equipment powered from the controllable outlets will be cycled at the end of the update, as the UPS needs to cycle power to the DSP processor to complete the update. Or you can switch to maintenance bypass prior to the update to keep the connected equipment powered directly by utility. This requires physical access to the unit.**

#### 4.6 Firmware File Transfer to UPS

With the 5.30.2020 firmware release (UPS firmware version MCUV180), Vertiv has put in place a security enhancement to only allow Vertiv authentic encrypted firmware files to be transferred to the UPS. Therefore, when updating UPS firmware that is older than the 5.30.2020 release (UPS firmware versions MCUV170, MCUV160, etc.), it will be necessary to first update the UPS to this secure method, and then repeat the update to the latest version. The secure update file is included with each zip download and is named *GXT5LA-EncryptedUpdate-5-10kHV,I.bin*.

- 4.6.1 Open the serial-terminal emulator and adjust the settings to communicate with the UPS. Select *Serial* connection for the session.
- 4.6.2 Check the computer *Device Management* settings to determine the correct the communication port (for example, COM6) and select it in the emulator.
- 4.6.3 Select 115200 for the connection speed and open the terminal emulator session.
- 4.6.4 On the CLI, enter the username and password. The username and password may have been changed from the default. If so, contact your company's administrator for credentials.  
The factory defaults are:  
Username: user (case-sensitive)  
Password: 123456 (case-sensitive)
- 4.6.5 On the command line, enter *update*, then press *d* on the keyboard, see Figure 4 on the next page.
- 4.6.6 In the menu bar, select *Files Transfer*, then *Ymodem*, select the upgrade file, and click *Send*.
- 4.6.7 The status of the transfer displays in a status dialog. After about 5 minutes, the UPS restarts and the CLI exits update mode. Do not close the status dialog.
- 4.6.8 After the UPS restarts, confirm both firmware versions on the UPS LCD *About* menu *Product* tab match the file loaded.

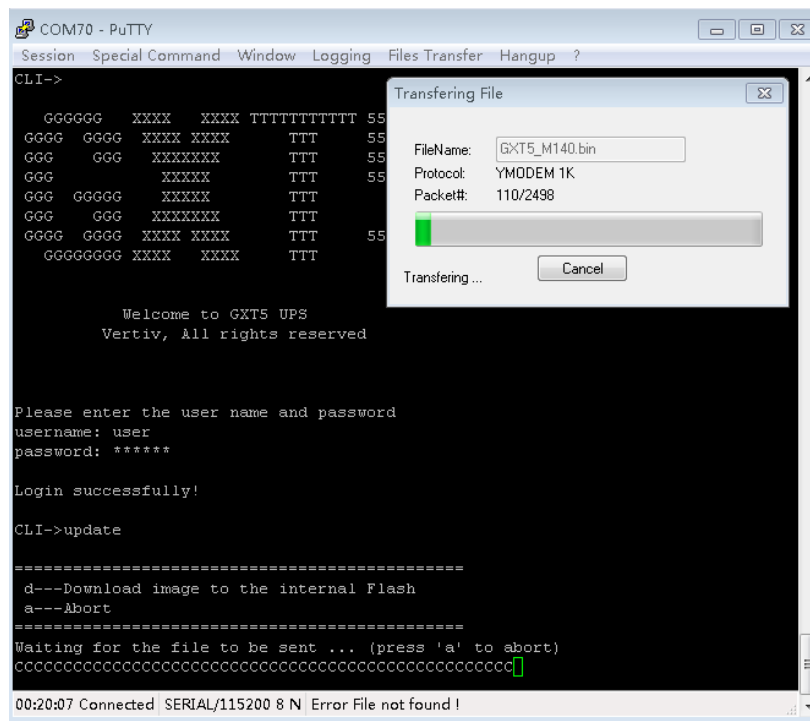
#### 4.7 Reinstall the REPO Terminal Block if Removed

#### 4.8 Transfer the UPS to Normal Operation

- 4.8.1 If the UPS was transferred to Maintenance Bypass, transfer back to Normal Operation.  
See [Appendix A](#) for instructions.



Figure 4 - File Transfer with the CLI



## Appendix A – Maintenance Bypass Operation

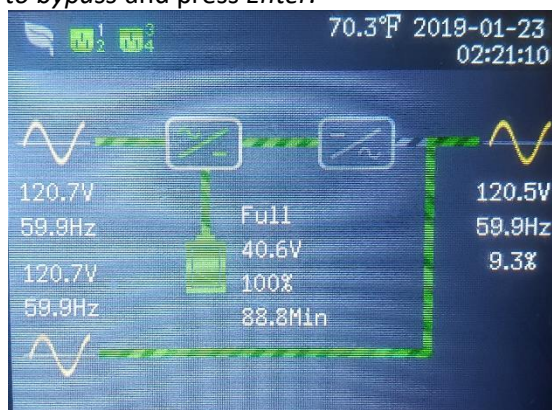
### Transfer to Maintenance Bypass

**NOTE: The load is unprotected from disturbances in the power supply while the UPS is in maintenance bypass mode.**

1. Loosen the upper captive screw over the maintenance bypass breaker.
2. Lift the maintenance-bypass breaker cover up and tighten the lower captive screw.
3. Confirm that the UPS is operating in internal bypass mode. If not, then manually transfer the connected equipment to internal bypass as follows:
  - a. Hold the power button for 3 seconds.
  - b. Select *Turn to bypass* and press *Enter*.
4. Turn the maintenance-bypass breaker *On*.
5. The UPS is now in maintenance bypass mode.

### Transfer to Normal Operation from Maintenance Bypass

1. Confirm that the UPS is operating in internal bypass mode by confirm the lower path on the flow screen is green as shown below. If not, then manually transfer the connected equipment to internal bypass as follows:
  - a. Hold the power button for 3 seconds.
  - b. Select *Turn to bypass* and press *Enter*.



2. Turn the maintenance-bypass breaker *Off*.
3. Loosen the lower captive screw over the maintenance bypass breaker and allow the maintenance bypass breaker cover to slide down.
4. Tighten the upper captive screw.
5. Confirm that the UPS is operating in normal mode. If not, then manually transfer the connected equipment to normal mode as follows:
  - a. Hold the power button for 3 seconds.
  - b. Select *Turn On* and press *Enter*.
6. The UPS is now in normal mode.

## Appendix B – Firmware Update with Bypass Disabled

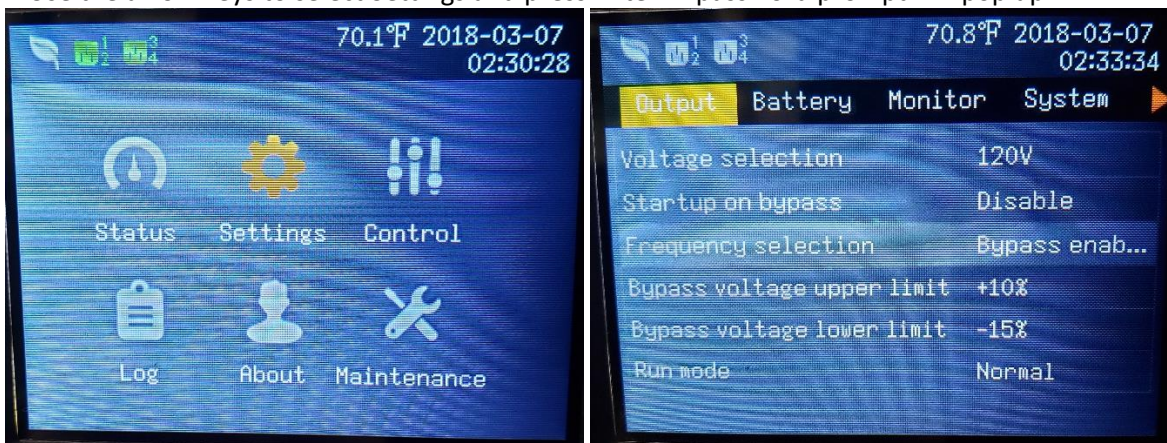
If the UPS output is on, it must switch to bypass during the update process. The update may also be performed with the UPS output off. If bypass is disabled, it is recommended to simply turn off the output, perform the update, and turn the output back on. You may also wish to consider changing the Frequency selection setting to enable the bypass while the UPS is off so that any future updates may be done remotely and with the output remaining on. To adjust this setting, you must have physical access to the UPS LCD and output must be turned off.

To turn off the UPS output:

1. Power must be removed from all connected devices to perform the update with Bypass Disabled. You may wish to gracefully shutdown the devices manually now rather than remove power from them by turning off the UPS.
2. Turn the UPS output OFF by holding the Power button, selecting *Turn off output*, and then selecting *Yes* to confirm. Reminder: This will remove power from all connected devices.

To change the Frequency Selection setting and enable the bypass:

1. From the flow screen, press Enter to go to the main menu.
2. Use the arrow keys to select Settings and press Enter. A password prompt will pop up.



3. Enter the password for the settings menu using the up arrow to increase the current digit and the down arrow to move to the next digit. The default password is 111111.
4. Press Enter to select the Output tab.
5. Use the arrow keys to select *Frequency selection* and press Enter.
6. Change the setting value to *Auto*, *bypass enabled* and press Enter to save your selection.
7. Use the Esc key to return to the flow screen.

To turn on the UPS output:

1. Turn the UPS output ON by holding the Power button, selecting *Turn on UPS*, and then selecting *Yes* to confirm.



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