

# LI-ION TAMER GEN 3 HUB / SENSOR FIRMWARE UPDATE PROCEDURE USER GUIDE



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### Preface

This Guide details how to update the Li-ion Tamer GEN 3 Hub and Sensor firmware using an Apache server. For firmware version release notes, please see their respective firmware release product bulletin's and contact an Li-ion Tamer representative to acquire the necessary firmware files.

### **Related Products**

Li-ion Tamer GEN 3

# 1 Introduction

The Li-ion Tamer GEN 3 Hubs (261003 and 261004) and Sensors (261001 and 261002) will periodically have new firmware released for the purposes of addressing field issues or modifying sensitivity of the system based on site-specific parameters. The following sections detail the required materials and how to update firmware on the hubs and sensors.

# 2 Apache Server Setup

The firmware update process requires the installation of XAMPP, which is a third-party software that runs an Apache server for hosting firmware files.

#### Note!

The XAMPP software has only been verified on Windows. Mac OS and Linux versions are available but this guide pertains to the Windows version.

The steps below detail how to download, install, and set up this software.

1. Download XAMPP version 8.0.25 for Windows with the following link: https://sourceforge.net/projects/xampp/files/XAMPP%20Windows/8.0.25/

Home / Browse Open Source / Database / Database Engines/Servers / XAMPP / Files           Image: Comparison of the source of the									
Summary	Files	Reviews		Support	Wiki	Co	de		
Downl xampp-windows-x64-4 Home / XAMPP Windows	oad Latest Version 8212-0-V\$16-installer.exe (157.6 8 / 8.0.25	MB)	Get Updates				<b>»</b>		
Name 🖨			Modified	Size	Downle	oads / Week	\$		
Parent folder									
xampp-windows-x64-8.0	.25-0-VS16.zip		2022-11	-22 240.0	MB	27 💶	(i)		
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xampp-windows-x64-8.0	xampp-windows-x64-8.0.25-0-VS16-installer.exe				7 MB	76 🖬	(i)		
xampp-portable-windows	xampp-portable-windows-x64-8.0.25-0-VS16-installer.exe 2022-11-22 128.9 MB 6 🗌 🕖								

- 2. Run the executable to install XAMPP.
- 3. Select "Next" to proceed with the install.



4. Uncheck all optional tools and select "Next".

📲 Setup		-		×
Select Components				ខ
Select the components you want to install; cle install. Click Next when you are ready to conti	ar the compone nue.	ents you do n	ot want	to
Server     Apache     MySQL     FileZilla FTP Server     Mercury Mail Server     Tomcat     Program Languages     PHP     Perl     Program Languages     phpMyAdmin     Muchalizer	Click on a com description	iponent to ge	t a detai	led
	< Back	Next >	Ca	ancel

5. Leave the default installation location and select "Next" on the following screens.

📲 Setup		_	
Installation folder			ខេ
Please, choose a folder to install XAMPP			
Select a folder C:\xampp	<b>1</b>		
VMware InstallBuilder			
	< Back	Next >	Cancel
Setup		_	
Ready to Install			
• Setup is now ready to begin installing XAMPP of	on your comp	uter.	
• Setup is now ready to begin installing XAMPP of	on your comp	uter.	
• Setup is now ready to begin installing XAMPP of	on your comp	uter.	
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• Setup is now ready to begin installing XAMPP o	on your comp	uter.	
Setup is now ready to begin installing XAMPP o	on your comp	uter.	
Setup is now ready to begin installing XAMPP o	on your comp	uter.	



6. Select the option to open the Control Panel now and select "Finish".

– – ×					
Completing the XAMPP Setup Wizard					
Setup has finished installing XAMPP on your computer.					
Do you want to start the Control Panel now?					
< Back Finish Cancel					

7. Open the folder C://xampp/htdocs and delete the following files.

Home Share View	tion							-	0	
⇒ 👻 🤚 > This PC > Wind	iows (C:) > xampp	> > htdocs >			¥	ۍ ک	arch htdocs			
Ouick access	1		B-1							
Deskton		dashboard	3/15/2023 12:24 PM	File folder						
Downloads		img	3/15/2023 12:24 PM	File folder						
Downloads		webalizer	3/15/2023 12:24 PM	File folder						
Documents		ampp	3/15/2023 12:24 PM	File folder						
Pictures		o applications.html	6/15/2022 9:37 PM	Chrome HTML Do	4 KB					
Videos	1	itnami.css	6/15/2022 9:37 PM	Cascading Style S	1 KB					
Binary		😫 favicon.ico	7/16/2015 9:02 PM	lcon	31 KB					
gen3_debug		index.php	7/16/2015 9:02 PM	PHP Source File	1 KB					
Gen3 Secure	- L.									
This PC										
3D Objects										
<ul> <li>3D Objects</li> <li>Desktop</li> </ul>										
3D Objects     Desktop     Documents	- I.									
30 Objects Desktop Documents Downloads										
3D Objects     Desktop     Documents     Downloads     Music										
3D Objects     Desktop     Documents     Downloads     Music     Pictures										
3D Objects Desktop Documents Downloads Music Pictures Videos										
3D Objects     Desktop     Decurrents     Downloads     Music     Pictures     Videos     Windows (C:)										
30 Objects     Desktop     Documents     Downloads     Music     Prctures     Videos     Windows (C)     User Data (Dr)										
30 Objects     Desktop     Decuments     Downloads     Music     Pictures     Videos     Windooss (Cl)     User Data (D2)     ESE-PE (1/12:24:87:15):hES):HECON	MMON/HECC									
30 Objects     Desktop     Decktop     Decuments     Decuments     Pictures     Videos     Videos     Uvideos     Uvideos	имом/несс									
30 Objects     Dexistop     Dexistop     Dexistop     Dexistop     Deximitads     Music     Pictures     Videos     Windows (C)     User Data (D)     ESE-PE (\\1722487.15\\he\$\inftyHe\$COh     Network     Network     Network	VIMON/HECC									

8. Create a new folder in C://xampp/htdocs and name it "firmware".



9. Open the "firmware" folder and create a new folder named "update".

📙   🛃 📑 🖛 İ firmwa	re					-	×
File Home Sha	re View						~ 🕐
← → ~ ↑ <mark>→</mark> > 1	This PC > Windows (C:) > xampp	> htdocs > firmware >	٩	Search firmware			
E. Desktop	* ^ Name	^	Date modified	Type	Size		
Downloads	* update		3/17/2023 5:56 PM	File folder			
Documents	*						
Pictures	*						
Videos	*						
Binary							
gen3_debug							
Gen3_Secure							
📑 mqtt							
OneDrive - Persona							
This PC							
3D Objects							
Desktop							
Documents							
Downloads							
b Music							
E Pictures							
Videos							
Windows (C:)	~						

10. Setup of the XAMPP software is now complete.

# 3 Running the Apache Server

The procedure for running the Apache server, which was set up in the previous section, is as follows:

1. Copy the firmware update files to C://xampp/htdocs/firmware/update as shown below. There are two files for the sensor firmware (.sfb and .json) and another two files for the hub firmware.

#### Note!

To update either the hub or the sensor, only move that device's files to the update folder. For example, to only update the sensor firmware, only copy the sensor's .sfb and .json files to the update folder.



2. On the XAMPP software control panel, select "Start". If there is a red "X" in the box next to the Apache service module, select that box and follow the prompts to enable the Apache service module. The Apache service box should either be empty, as shown below, or populated by a green check-mark before proceeding.

🔀 XAMPP	Control Pan	el v3.3.0 [ Com	piled: Apr 6th 202	]			-		$\times$
ខា	XAN	IPP Contro	ol Panel v3.3	3.0				de Ca	onfig
Modules Service	Module	PID(s)	Port(s)	Actions	•			🔞 Ne	etstat
	Apache		[	Start	Admin	Config	Logs	<b>E</b> S	hell
	MySQL			Start	Admin	Config	Logs	Exp	plorer
	FileZilla		1	Start	Admin	Config	Logs	Ser	vices
	Mercury			Start	Admin	Config	Logs	<b>O</b> H	lelp
	Tomcat			Start	Admin	Config	Logs		Quit
12:27:01   12:27:01   12:27:01   12:27:01   12:27:01   12:27:01   12:27:01   12:27:01	PM [main] PM [main] PM [main] PM [main] PM [main] PM [main] PM [main] PM [main]	All prerequi Initializing M The MySQL The FileZill The Mercur The Tomcal Starting Ch Control Par	sites found Adules - module is disal a module is disal y module is disal t module is disal eck-Timer tel Ready	bled bled bled bled					< >

3. After starting the Apache server, the control panel should appear as shown below.

ខ	XAN	IPP Contr	ol Panel v3	.3.0				Je Config
Modules Service	Modulo	DID(e)	Port(e)	Actions				Netstat
	Apache	11584 9804	80, 443	Stop	Admin	Config	Logs	Shell
	MySQL			Start	Admin	Config	Logs	Explore
	FileZilla			Start	Admin	Config	Logs	Service
	Mercury			Start	Admin	Config	Logs	😡 Help
	Tomcat			Start	Admin	Config	Logs	Quit
2:10:24 F 2:10:24 F 2:10:24 F 2:10:24 F 2:10:24 F 2:10:24 F 2:10:24 F 2:10:27 F 2:10:27 F	M [main] M [main] M [main] M [main] M [main] M [main] M [Apache] M [Apache]	The MySQ The FileZill The Mercu The Tomca Starting Cl Control Pa Attempting Status cha	L module is dis. la module is dis. Iny module is dis. at module is dis. heck-Timer nel Ready g to start Apache ange detected: n	abled abled abled abled abled e app unning				

4. Open the following link in a browser, confirming that the screen below appears with the update files listed: http://localhost/firmware/update



# 4 Firmware Update Procedure

Follow the procedure below to update sensor and hub firmware.

#### **Required Materials for Testing:**

- Laptop with ethernet port or adapter
- WiFi (from local network or cellphone hotspot) or LAN connection
- Li-ion Tamer Gen3 system, setup as typical

#### Option A (WiFi):

- 1. Power OFF the hub and sensor chains that require the firmware update. Multiple hub and sensor chains can be updated simultaneously.
- 2. Set the laptop ethernet port to a static IP address of 172.16.0.2, as shown below.

Internet Protocol Version 4 (TCP/IPv4) Properties							
General							
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.							
Obtain an IP address automatically							
• Use the following IP address							
IP address:	172.16.0.2						
Subnet mask:	255.255.0.0						
Default gateway:							
Obtain DNS server address	automatically						
Use the following DNS serve	r addresses:						
Preferred DNS server:							
Alternate DNS server:							
Validate settings upon exit Advanced							
	OK Cancel						

- 3. Setup the system as shown below.
  - Connect laptop to WiFi from either a local network or cellphone hotspot.
  - Connect the laptop ethernet port (set to a static IP from Step 1) to the ethernet switch that is connected to the Network 1 port of the Li-ion Tamer Controller.
  - Hubs and sensors are powered OFF and connected as typical to the ethernet switch. PoE hubs will be unplugged from the PoE switch so they are powered OFF.



- 4. Verify that the controller and ethernet switch are powered ON.
- 5. Load the firmware files and run the Apache server according to Section 3.
- 6. Power ON all hubs and sensors that require the firmware update. The firmware update process will typically begin in about 1 minute after powering ON.
  - When the process is running, the devices receiving the firmware update will flash white LEDs.
  - Firmware update typically takes 5 minutes. If device LEDs flash white for more than 10 minutes, contact a Li-ion Tamer representative as further troubleshooting may be needed.
  - When sensor firmware update is complete, their LEDs will stop flashing white and will transition to a slow blue flash, followed by the green blip indicating normal operation.
  - When hub firmware update is complete, their LEDs will stop flashing white and will transition to a slow blue flash, followed by fast blue flashing indicating they are connecting to the sensors.
- 7. Once the sensor LEDs indicate a green blip and the hub LEDs indicate a fast blue flash, power OFF all hubs and sensors that received the firmware update.
- 8. Stop the Apache server.
- 9. Power the hubs and sensors ON and confirm that they have received the new firmware version via the controller's software interface dashboard.

#### Option B (LAN):

- 1. Power OFF the hub and sensor chains that require the firmware update. Multiple hub and sensor chains can be updated simultaneously.
- 2. Set the laptop ethernet port to a static IP address of 172.16.0.2, as shown below.

Internet Protocol Version 4 (TCP/IPv4) Properties							
General							
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.							
Obtain an IP address automatio	cally						
<ul> <li>Use the following IP address:</li> </ul>							
IP address:	172.16.0.2						
Subnet mask:	255.255.0.0						
Default gateway:							
Obtain DNS server address aut	tomatically						
Use the following DNS server a	ddresses:						
Preferred DNS server:							
Alternate DNS server:							
Validate settings upon exit	Advanced						
	OK Cancel						

- 3. Setup the system as shown below.
  - Connect the laptop ethernet port (set to a static IP from Step 1) to the ethernet switch that is connected to the Network 1 port of the Li-ion Tamer Controller.
  - Connect Controller Network 2 port to a LAN.
  - Hubs and sensors are powered OFF and connected as typical to the ethernet switch. PoE hubs will be unplugged from the PoE switch so they are powered OFF.



4. Follow Steps 4 through 9 from Option A to update sensor and hub firmware.



# 5 Further Support

Contact a Li-ion Tamer representative for further information.

### www.liiontamer.com

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