K Firmware Updater			—		×
Updating firmware Updating the firmware of detected Xsens devices	X	(56	21		5
Updating firmware for					
MTi-630-8A1G6_80000011.00000000.1_0 (MTi-630-8A1G6)		(1 of 1)			
From v1.0.0 build 1353 rev 93765 To v1.0.0					
	70%	Writing Settings	Bank 0 Pa	ige 2	
	0%	Update Settings			
Do NOT turn off or unplug your device!!!					
About Help < Back	N	ext > Ca	incel	v4.	3.0

Document FU0100P, Revision 2020.C, Aug 2020



Firmware Updater Manual

For all Xsens Devices

Revision	Date	Ву	Changes
А	Dec 2008	PRI/MMI	Initial release
K	23 December 2015	MHA	New FW Updater online v4.0.4
L	9 August 2017	MHA	New FW Updater v4.08
M	1 April 2019	SGI	New FW Updater V4.2.6
2020.A 2020.B	Jan 2020 Aug 2020	AKO PRI	New Xsens brand identity Updated screenshots, remark about multiple available firmware versions.
2020.C	Aug 2020	GLS	Updated screenshots, table of contents

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## List of Abbreviations

The MT Family Reference Manual  $^{\rm 1}$  provides a list of abbreviations used across our MT documentation.

<sup>&</sup>lt;sup>1</sup> The latest available documentation can be found in your MT Software Suite installation folder or via the following link: <u>https://xsens.com/xsens-mti-documentation</u>



### 1 Xsens Help Centre and User Community

Xsens has an extensive help centre, a place where users of Xsens and Xsens employees (support, field application engineers, sales and R&D engineers) meet. The knowledge base contains tips and tricks, guidance and answers to frequently asked questions. News is also shared at the knowledge base and it is possible to ask additional questions (registration required).

The user community is the place to ask questions. Answers may be given by other users or by Xsens employees. The response time in the user community is significantly shorter than the response time at Xsens support.

The knowledge base and user community are searchable simultaneously. A search query thus shows results irrespective of the source.

Please visit <u>https://base.xsens.com</u> to complete your 1-minute registration.



### 2 Introduction

Using the Firmware Updater, it is possible to update the firmware of your Xsens product. Always follow the instructions shown in the Firmware Updater very carefully.

*Note*: Do NOT run other programs while updating MT firmware. Do NOT run the Firmware Updater in a Windows emulation environment or virtual PC environment. Do NOT disconnect the device during an update in progress.

When updating the firmware in your device, please make sure to use the <u>latest</u> <u>Firmware Updater</u>, which is available at our website <u>www.xsens.com</u>. Not using the latest Firmware Updater can render your sensor inoperable in which case the sensor may need to be returned to Xsens for recovery.

To start the Firmware Updater, go to Start  $\rightarrow$  All Programs  $\rightarrow$  Xsens  $\rightarrow$  Firmware Updater 4.X.X  $\rightarrow$  Firmware Updater 4.X.X.

For MTi 1-series modules that are already integrated and are therefore unable to connect to a PC, an alternative Firmware Updater is available. This Firmware Updater requires the use of an ST Nucleo board. It can be found via the following link: https://os.mbed.com/teams/Xsens/code/MTi-1 fwu example/



### 3 Firmware Updater functionality

The Firmware Updater downloads the latest released firmware by connecting to the Xsens server. A connection with internet is required at some point to perform a firmware update. It is possible to download firmware onto e.g. a laptop for updating the firmware of a Motion Tracker on a remote location. This procedure is described in section 3.2.

K Firmware Updater	-		×
Perform Firmware Update Update the firmware of Xsens devices	9		5
The Firmware Updater updates any connected Xsens devices			
Press "Next" to scan for attached devices			
Show advanced options			
About Help < Back Next >	Cancel	v4.	3.0

Figure 1: The start screen of the Firmware Updater



### 3.1 Standard firmware update process

When starting the Firmware Updater, click Next to Scan for devices.



Figure 2: Scanning for devices

When devices are found, select the devices you want to update. If multiple firmware versions are available for download then choose the desired version from the dropdown box.



Figure 3: A list of detected hardware





Click Next to download the firmware (if not already downloaded to cache before).

Figure 4: Downloading firmware

The Firmware Updater will indicate if the firmware can be updated.

K Firmware Updater		_		×
Ready to update	XS	e	٦	5
Ready to update the firmware of the connected devices Press "Next" to begin the update process				
!! Do NOT open any applications or files while the update is in process!!				
!! Do NOT turn off or unplug your device during the update procedure!!				
About Help < Back	<u>N</u> ext >	Cancel	v4.	3.0

Figure 5: The firmware can be updated

Pressing Next will start the Firmware Update process.





Figure 6: The status bars show the progress of the update

When the update process is finished, the Firmware Updater provides a summary of the updated devices and their firmware versions.

×	Firmware Upd	ater					-	-		×
	Firmware upda	ate(s) done					<b>5e</b>		٦	5
	Product Code MTI-630-8A1G6	DeviceID 0080000011	Previous 1.0.0 build 1353 rev 93765	New 1.0.0	Result Successful					
	About	Help		<	Back	Restart	Finish		v4.	3.0

Figure 7: After the firmware update, the results are shown



### 3.2 Updating Motion Trackers in offline mode

This feature can be used if it is not possible to connect to internet when the Motion Tracker is connected to the Firmware Updater. This is a two-step procedure:

#### 3.2.1 Download Only

This section details the 'Download Only' feature that downloads firmware files to cache, in order to update Motion Trackers. First, click Show Advanced Settings and select "Download Only"

K Firmware Updater	_		×
Perform Firmware Update Update the firmware of Xsens devices	58	Π	S
The Firmware Updater updates any connected Xsens devices			
Press "Next" for download options			
Hide advanced options			
Advanced options			
O Update			
O Update from Cache			
Download Only			
Clear cached information			
About Help < Back Next >	Cancel	v4	.3.0

Figure 8: It is possible to download firmware to cache for future use when there is no live internet connection available

Click "Next" to make a selection of the firmware files to download. The numbers between brackets are the first digits of the DeviceID. In this case, the firmware files for all products of the MTi 600-series modules are selected. Click Next to download the firmware.



Firmware Updater	- U >
Choose devices Choose devices to fetch from the server	Xsens
MTi-1 (0188)	MTI-610 (MTI-610)
MTi-2 (0288)	MTI-620 (MTI-620)
MTI-3 (0388)	MTi-630 (MTi-630)
MTi-7 (0788)	MTi-670 (MTi-670)
MTi-2GO (02D)	MTi-680 (MTi-680*)
	MTw 2nd generation (00B4)
MTi-10 (016)	Awinda Station/Dongle 2nd generation (012)
MTi-20 (026)	
MTi-30 (036)	MTx2 (00B2)
	Bodypack (00A0)
MTi-100 (017)	BPACK-V2 (BPACK-V2)
MTi-200 (027)	
MTi-300 (037)	
☐ MTī-G-700 (077)	
About Help	< Back Next > Cancel v4.3.0

Figure 9: Selecting the firmware files to download

It is now possible to review the firmware files that will be downloaded. You can also check whether the firmware files are newer than those already in the cache. If multiple firmware versions are available for download then choose the desired version from the dropdown box.

Plea	ase select firmware(	(s) to download.					ì
Click "1	Next" to download f	îrmware(s)					
	Product Name	Device Type	Cached	New	Additional information		_
$\checkmark$	MTi-610	MTi-610		1.0.0	Ok		
$\checkmark$	MTi-620	MTi-620		1.0.0	Ok		
$\checkmark$	MTi-630	MTi-630	1.0.0	1.0.0	Ok		
$\checkmark$	MTi-670	MTi-670		1.0.0	Ok		

Figure 10: Review the firmware files that will be downloaded

Click Next to download the firmware files.





Figure 11: The downloading process of firmware for the cache



 Firmware Updater
 C
 C
 C

 Retrieving firmware information
 Download complete
 Download complete
 Download complete

 Download complete
 Download complete
 Download complete
 Download complete
 Download complete

 Download complete
 Download complete
 Download complete
 Download complete
 Download complete

 Download complete
 C
 Download complete
 C
 Download complete

 Immware(6) for MT-60 (8000....) successfully download complead complexes
 Firmware(6) for MT-670 (8000....) successfully download complead complexes
 Firmware(6) for MT-670 (8000....) successfully download complead complexes
 Firmware(6) for MT-670 (8000....) successfully download complexes

 Mout
 Help
 C Back
 Restart
 Finsh
 v4.3.0

When all firmware files are downloaded, the Firmware Updater shows the following log.

Figure 12: The Firmware Updater showing the result of the download operation to cache

Now it is possible to update Motion Trackers from cache (see section 3.2.2).



#### 3.2.2 Updating firmware from cache

Firmware files are downloaded to cache with the "Download Only" step (as described in section 3.2.1). Firmware files are also downloaded to cache when performing a standard firmware update (see section 0), but this cache file may not contain settings for all Motion Trackers. Always download firmware to cache manually (section 3.2.1) before updating from cache.

Click Show Advanced Options and select "Update from Cache". Click Next to start scanning for devices.

K Firmware Updater		_		×
Perform Firmware Update Update the firmware of Xsens devices	XSE	21	ר	5
The Firmware Updater updates any connected Xsens devices				
Press "Next" to scan for attached devices				
Hide advanced options				
Advanced options				
Update     Update     Update				
About Help < Back	Next > Ca	ncel	v4.	3.0

Figure 13: Start screen updating MTi's from cache

The Firmware Updater will check whether the firmware is available in the cache. If it is, the following screen will be shown:



X Firmware	e Updater					_		×
Detected Please	hardware select the device	s to update			XS			5
	Product Code	DeviceID	Current	New	Hardware Version			
	MTi-630-8A1G6	0080000011	1.0.0 build 1353 rev 93765	1.0.0	1.0.0			
About	Help		< <u>B</u> ac	k	<u>N</u> ext > 0	ancel	v4.	3.0

Figure 14: Hardware detected plus new firmware available in the cache

When the firmware for the connected Motion Tracker is not present in the cache, the Firmware Updater will indicate that there is no new firmware file available.

Product Code	DeviceID	Current	New	Hardware Version	
select all MTi-680G-8A1G6	0080021001	1.1.12 build 2290 rev 102954	Not available	1.0.0	

Figure 15: The screen that is shown when a firmware is not available in the cache



If the firmware file is available in the cache, the remainder of the firmware update process is identical to the standard firmware update process, as described in section3.1.

### 3.3 Clearing cache

It is possible to clear the cache. In most cases however, this will not be necessary. Press "Show Advanced Options" and press the button "Clear cached information". Confirm by pressing Yes.

Perform Firmware Updat Update the firmware of 2	e Xsens devices	<b>5</b> 2	Π.
he Firmware Updater updates	any connected Xsens devices		
ress "Next" to scan for attach	ed devices		
Hide advanced options			
	Firmware Updater ×		
	Are you sure you want to clear the cache:		
	Ver No		
Advanced options			
Update			
O Update from Cache			
O Download Only			
Clear cached information			

Figure 16: Clearing the cache

