# BRIGHTSPEC

# **USB Driver Upgrade Guide**



Version 1.0 August 2015

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# I. INTRODUCTION

With the recently introduced Topaz-X series of MCA devices, BrightSpec is switching to a new version of the USB driver. The updated driver is needed to access the extended features of the new devices, and is backwards compatible with the older MCA series like the bMCA-USB and the Topaz-Pico.

The old USB driver was built around libusb-0.1, which is now being phased out and no longer updated, while the new one is based on libusb-1.0, which is also supported natively by Linux, FreeBSD and Mac-OS.

Beginning from August 2015, our Basic Acquisition and Spectrometry software will make use exclusive of the new driver. Fresh installations will be straightforward, while upgrades will require updating the USB driver as described further on this manual.

Future versions of the bMCA-USB and Topaz-Pico (with firmware version V2.2.001 and later) will work solely with the new driver.

# **II.** Which USB driver do I have?

To determine which version of the USB driver is installed in your system, open Window's 'Device Manager' and locate the 'BrightSpec USB device' entry.

If it is located under 'libusb-win32 devices', as shown below, then you have the old version of the driver and will need to follow the instructions on this guide in order to upgrade it:



If the entry appears instead under 'Universal Serial Bus devices', then you already the new version of the driver and no further actions need to be taken:



Finally, if the entry appears under 'Other devices' with a yellow question mark icon next to it, then that means that no driver is found for the USB device and that the new driver needs to be installed as described in this guide:

🛃 Device Manager 📃 🖃 🔤 🕰							
<u>File Action View H</u> elp	<u>File Action View H</u> elp						
🔶 🤿 📰 🔄 🚺 🖬 😣 😭	15						
Brightspec-PC     Bightspec-PC     Bightspec-PC     Bightspec-PC     Bightspec-PC     Disk drives     Dis	es Update Driver Software Disable Uninstall Scan for hardware changes Personation						
Properties							

# **III.** DRIVER UPGRADE FOR WINDOWS XP

#### Uninstalling the old USB driver

Before proceeding to install the new USB driver for BrightSpec MCA's, we need first to ensure that the old drivers are removed:



Make sure the MCA USB device is connected to the computer.

2. Go to 'Device Manager' and find the entry 'BrightSpec USB device' under 'libusb-win32 devices'. Right-click on it and select 'Uninstall':



3. Who

When the confirmation dialog appears, click 'OK' to complete the device removal:

Confirm	Device Removal 🔹 💽					
÷	BrightSpec USB device					
Warning	Warning: You are about to uninstall this device from your system.					
	OK Cancel					



Care must also be taken to ensure that all locations which still contain old driver files are removed or renamed. If an old driver was installed once on a Windows system, the OS may keep trying to use those drivers even if the user doesn't want that. Removing or renaming folders and/or files that were used *at least once* for the driver installation fixes this:

🚘 USB Driver							
File Edit View Favorites Tools Help							
G Back 🝷 🌍 - 🎓 Search 🔊 Folders 🔢 +							
Address 🛅 C:\Program Files\Brightspec\bMCA\USI	Driver	▼	🔁 Go				
File and Folder Tasks     *	AMD64	IA64					
Copy the selected items     Selected items     Lenail the selected items     Delete the selected items	license	×86					
Other Places	BSUSB_device.inf Setup Information 8 KB	n installer_x64.exe					
bMCA     My Documents     Characterized	installer_x86.exe	8					
Shared Documents  My Computer  My Network Places							
	Confirm M	Muttiple File Delete 🛛 🔀					
Details ¥	3	Are you sure you want to send these 7 items to the Recycle Bin?					

**5**• After the removal of the old drivers, disconnect and reconnect the USB device. Follow the steps listed in the following section to install the new drivers.

## Installation of the new USB driver



Connect the MCA USB device to the computer.

• 'New hardware detected' balloon appears:



**3** Click on the 'New Hardware' pictogram in the system tray. The 'Found New Hardware Wizard' appears:





Select 'No, not this time' and click 'Next':

Found New Hardware Wizard	
	This wizard helps you install software for:
	bMCA - BrightSpec USB MCA
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do?
	Install the software automatically (Recommended)
	Install from a list or specific location (Advanced)
	Click Next to continue.
	< <u>B</u> ack <u>N</u> ext > Cancel

**5**. Select 'Install from a list or specific location (Advanced)':

Found New Hardware Wizard
Please choose your search and installation options.
● Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
✓ Include this location in the search:
C:\Program Files\Brightspec\bMCA\USB Driver\Win 💌 Browse
O Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cancel



Click 'Browse' to select the driver location on the system. Click 'Next'.





8. Click 'Finish' to end the driver installation:



10

# 9.

The 'Found New Hardware' balloon text appears showing the driver was installed successfully:



10. The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'BrightSpec USB device':

🖳 Device Manager	_ 🗆 🔀
Eile Action View Help	
🔁 💘 Batteries	^
Electooth Radios	_
Em 😨 Computer	
E Sector Disk drives	
E Standard Street	
Hoppy alsk controllers	
Him 🚯 Hoppy alsk anves	
	=
Fine 👽 Ports (COM & LPT)	
Final Processors	
🗄 🖑 SCSI and RAID controllers	
🕀 🕘 Sound, video and game controllers	
🕀 🥷 System devices	
🕀 🕰 Universal Serial Bus controllers	
🗄 🕰 Universal Serial Bus devices	
🔤 🥰 BrightSpec USB device	~

# **IV.** DRIVER UPGRADE FOR WINDOWS 7

#### Uninstalling the old USB driver

Before proceeding to install the new BrightSpec USB driver we need to ensure first that the old drivers are removed:



Make sure the MCA USB device is connected to the computer.

2. Go to 'Device Manager'. Find the entry 'BrightSpec USB device' under 'libusb-win32 devices' and right-click. Select 'Uninstall':

🛃 Device Manager						
File Action View Help						
🧼 🔿   🖬   🗐   📝 (	TT 🔯 🔛 🙀 😼					
▲ → Brightspec-PC						
Batteries						
Bluetooth Radio	DS					
Computer						
Disk drives			1			
Display adapter	5					
DVD/CD-ROM C	drives					
Floppy disk drive	res ntrollers					
Human Interfac	re Devices					
	controllers					
Keyboards						
a 🍦 libusb-win32 de	evices					
🚽 🖗 BrightSp	Undate Driver Software					
Mice and ot	Disable					
Monitors	Disable					
Network add	Uninstall					
Ports (COM	Scan for hardware changes					
Processors						
Sound, vide	Properties					
P - Storage Concroments						
Universal Serial Bus controllers						
· · ·						
4						
Uninstalls the driver for the	selected device.					

**3** Make sure the 'Delete the driver software for this device' checkbox is checked. Click 'OK' to complete the device removal:



**4**. Care must also be taken to ensure that all locations which still contain old driver files are removed or renamed. If an old driver was installed once on a Windows system, the OS may keep trying to use those drivers even if the user doesn't want that. Removing or renaming folders and/or files that were used *at least once* for the driver installation fixes this:

				1000		- 0	X	
Comput	🚱 👽 🎍 🔸 Computer 🕨 Local Disk (C:) 🔸 Program Files (x86) 🔸 Brightspec 🔸 bMCA 🔸 USB Driver 🔸 🔶 🗲 4 🖌 Search USB Driver 🔎							
Organize 👻 🔭 🔭 Oper	Organize 🔻 🎇 Open New folder 🔠 👻 🗍 🔞							
☆ Favorites	Name	Date modified	Туре	Size				
🧮 Desktop	AMD64	4/22/2015 1:03 PM	File folder					
鷆 Downloads	🌗 IA64	4/22/2015 1:03 PM	File folder					
📃 Recent Places	🌗 license	4/22/2015 1:03 PM	File folder					
	ル х86	4/22/2015 1:03 PM	File folder					
🥽 Libraries	BSUSB_device	8/27/2014 2:42 PM	Setup Information	8 KB				
Documents	installer_x64	8/27/2014 2:42 PM	Application	25 KB				
🌙 Music	🔜 installer_x86	8/27/2014 2:42 PM	Application	23 KB				
Pictures								
🛃 Videos	G	Delete Multiple Items		_	×			
Computer		Are you sure you want to n	nove these 7 items to the	he Recycle Bin?				
🗣 Network		3	<u> </u>	es <u>N</u> o				
	L							
					_			
7 items selected Date modified: 8/27/2014 2:42 PM - 4/22/2015 1:03 PM								

5. After the removal of the old drivers, disconnect and reconnect the USB device. Follow the steps listed in the following section to install the new drivers.

## Installation of the new USB driver

The installation of the new USB driver for Windows 7 is different depending on the MCA device used during the process.

#### Older devices with original firmware (without MS descriptors)

These include bPAD, bMCA-USB and Topaz-Pico devices made before January 2016:

**1**. Connect the MCA USB device to the computer.

2. A 'Device driver software was not successfully installed ' balloon appears:



Click on the balloon to open the 'Device Manager'. A device 'bMCA – BrightSpec USB MCA' can be seen under 'Other devices'. Right click on the device name and select 'Update driver software...' from the context menu:

🛃 Device Manager 📃 📃 🔤							
<u>File Action View H</u> elp							
■ 🚔 Brightspec-PC							
Batteries							
Bluetooth Radios							
⊳							
Disk drives							
Display adapters							
DVD/CD-ROM drives							
Floppy disk drives							
Floppy drive controllers							
🔈 🕼 Human Interface Devices							
D IDE ATA/ATAPI controllers							
⊳ ·  Keyboards							
Mice and other pointing devices	s						
Monitors							
Network adapters							
▲ ① Other devices							
bMCA - BrightSpec USB_MC							
Ports (COM & LPT)	Update Driver Software						
Processors	Disable						
Sound, video and game cor	Uninstall						
System devices	System devices Scan for hardware changes						
🔈 🖣 Universal Serial Bus controll	Properties						

Select 'Browse my computer for driver software':

4.



5 Click 'Browse' and select the directory where the drivers are located. Click Next:



Driver installation begins. A window appears stating that the publisher of the driver can't be verified. Click 'Install this driver software anyway'. The installation continues:

6.



**7**. The wizard finishes and shows the device being installed as a 'BrightSpec USB device':



# 8.

The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'bMCA - BrightSpec USB MCA':



# 17

#### Later devices with new firmware (with MS descriptors)

These include the Topaz-X and Topaz-HR family of devices:

#### *If you have an Internet connection*

If the computer is connected to the internet the MCA, then the drivers can be automatically installed by the OS:



Connect the MCA USB device to the computer.

2. If 'Automatic updates' is enabled, the following steps can be skipped up to the automatic driver installation (step 6 below).



If 'Automatic updates' is disabled, the 'Device driver software was not successfully installed' balloon appears:



4. Click on the text balloon to show the 'Driver Software Installation' window.

Click on 'Change Settings...' to show the 'Device Installation Settings' window. Select 'Always install the best driver software from Windows Update' and click 'Save changes':

U Driver Software Installation	×
Device driver software was	not successfully installed
bMCA - BrightSpec USB MCA	XNo driver found
You can change your setting to aut Change setting	comatically search Windows Update for drivers
What can I do if my device did not	install properly?
	Close
A CONTRACTOR OF THE OWNER	
evice Installation Settings	
<u>Y</u> es, do this automatically (reco	mmended)
<ul> <li>Yes, do this automatically (reco</li> <li>No, let me choose what to do</li> </ul>	mmended)
<ul> <li><u>Y</u>es, do this automatically (reco</li> <li><u>No, let me choose what to do</u></li> <li><u>A</u>lways install the best do</li> <li><u>Install driver software frocomputer.</u></li> </ul>	mmended) river software from Windows Update. ım Windows Update if it is not found on my
<ul> <li>Yes, do this automatically (reco</li> <li>No, let me choose what to do</li> <li>Always install the best do</li> <li>Install driver software fro computer.</li> <li>Never install driver software software</li> </ul>	mmended) river software from Windows Update. Im Windows Update if it is not found on my rare from Windows Update.
<ul> <li>Yes, do this automatically (reco</li> <li>No, let me choose what to do</li> <li>Always install the best da</li> <li>Install driver software fro computer.</li> <li>Never install driver software</li> </ul>	mmended) river software from Windows Update. Im Windows Update if it is not found on my rare from Windows Update. cons with enhanced icons
<ul> <li>Yes, do this automatically (reco</li> <li>No, let me choose what to do</li> <li>Always install the best du</li> <li>Install driver software fro computer.</li> <li>Never install driver software</li> <li>Replace generic device in</li> </ul>	mmended) river software from Windows Update. Im Windows Update if it is not found on my vare from Windows Update. cons with enhanced icons
<ul> <li>Yes, do this automatically (reco</li> <li>No, let me choose what to do</li> <li>Always install the best du</li> <li>Install driver software fro computer.</li> <li>Never install driver software</li> <li>Replace generic device in</li> </ul>	mmended) river software from Windows Update. om Windows Update if it is not found on my vare from Windows Update. cons with enhanced icons

6.

5.

Windows will start searching Windows Update to find the right driver online:



• After Windows finds the driver online, the download will start:



8. When the installation finishes, the device is recognized as 'WinUsb Device':

U Driver Software Installation		
WinUsb Device installed		
WinUsb Device	🗸 Ready to use	
		Close

**9.** The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'WinUsb Device':



7.

#### If you do not have an Internet connection

**1**. Connect the MCA USB device to the computer.

2. A 'Device driver software was not successfully installed ' balloon appears:



3.

Go to 'Device Manager'. A device 'bMCA – BrightSpec USB MCA' is available under 'Other devices'. Right click on the device name and select 'Update driver software...' from the context menu:



Select 'Browse my computer for driver software':

4.



**5** Click 'Browse' and select the directory where the drivers are located. Click Next:



Driver installation begins. A window appears stating that the publisher of the driver can't be verified. Click 'Install this driver software anyway'. The installation continues:

6.



**7.** The wizard finishes and shows the device being installed as a 'BrightSpec USB device':



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The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'bMCA - BrightSpec USB MCA':



# V. DRIVER UPGRADE FOR WINDOWS 8

#### Uninstalling the old USB driver

Before proceeding to install the new BrightSpec USB driver we need to ensure first that the old drivers are removed:



Make sure the MCA USB device is connected to the computer.

2. Go to 'Device Manager'. Find the entry 'BrightSpec USB device' under 'libusb-win32 devices' and right-click on it. Select 'Uninstall' from the context menu:



**3** Make sure the 'Delete the driver software for this device' checkbox is checked. Click 'OK' to complete the device removal:



4. Care must also be taken to ensure that all locations which still contain old driver files are removed or renamed. If an old driver was installed once on a Windows system, the OS may keep trying to use those drivers even if the user doesn't want that. Removing or renaming folders and/or files that were used *at least once* for the driver installation fixes this:

🛃 🚺 🖛			USB Driver				- 🗆 🗡
File Home Sha	re View						~ (
€ ∋ - ↑ 퉫 ⊦	This PC → Local Disk (C:) → Program Fil	les (x86) → Brightspec → bMC4	A → USB Driver		~ ¢	Search USB Driver	م ر
🔶 Eavorites	Name	Date modified	Туре	Size			
Deskton		30/04/2015 16:21	File folder				
Downloads		30/04/2015 16:21	File folder				
Recent places	✓ ↓ license	30/04/2015 16:21	File folder				
	▼ ▲ x86	30/04/2015 16:21	File folder				
🍓 Homegroup	BSUSB device	27/08/2014 14:42	Setup Information	8 KB			
	✓ III installer x64	27/08/2014 14:42	Application	25 KB			
🛤 This PC	✓ III installer x86	27/08/2014 14:42	Application	23 KB			
		installer_x86 Date created: 27/08/2014 14:42 Size: 23,0 KB	2				
	🗌 Do this	for all current items		_			
		Tontinue	<u>3</u> kip Can	icei			
	V More	details					

5. After removing the old drivers, disconnect and reconnect the USB device. Follow the steps listed in the following section to install the new drivers.

#### Installation of the new USB driver

The installation of the new USB driver for Windows 8 is different depending on the MCA device used during the process.

#### Older devices with original firmware (without MS descriptors)

These include bPAD, bMCA-USB and Topaz-Pico devices made before January 2016.

Disabling Windows 8 driver enforcement option

The installation the new device driver might fail under Windows 8 due to its restrictive policy regarding the installation of third party drivers (\*.INF files) that do not contain a digital signature. Therefore, in order to proceed with the BrightSpec USB driver installation you must disable first the Windows 8 *driver signature enforcement* option:

**1** Using the PC Settings, press the SHIFT key while clicking on the Restart menu option 'Power':



# 2. Click on 'Update and restart':





Choose the option 'Troubleshoot' in the screen that appears:





From the 'Troubleshoot' menu choose 'Advanced options':





From 'Advanced options' select 'Startup Settings':





In 'Startup Settings' click on the 'Restart' button:

# Startup Settings Restart to change Windows options such as: Enable low-resolution video mode Enable debugging mode Enable boot logging Enable Safe Mode Disable driver signature enforcement Disable early-launch anti-malware protection Disable automatic restart on system failure



Restart

7.

From the next boot screen, select option 7 'Disable driver signature enforcement' by pressing 'F7' on the keyboard:

Startup Settings
Press a number to choose from the options below:
Use number keys or functions keys F1-F9.
1) Enable debugging
2) Enable boot logging
3) Enable low-resolution video
4) Enable Safe Mode
5) Enable Safe Mode with Networking
6) Enable Safe Mode with Command Prompt
7) Disable driver signature enforcement
8) Disable early launch anti-malware protection
9) Disable automatic restart after failure
Press F10 for more options
Press Enter to return to your operating system

Once the driver signature enforcement has been disabled, the driver installation should proceed normally by following the steps listed below:

1. 2.

Connect the MCA USB device to the computer.

The OS makes a sound meaning that the new hardware was recognized.

Go to 'Device Manager'. A device 'bMCA – BrightSpec USB MCA' is available under 'Other devices'. Right click the on the device name and select 'Update driver software...' from the context menu:



**4**. Select 'Browse my computer for driver software':

G	<u>n</u> u	Ipdate Driver Software - bMCA - BrightSpec USB MCA	×
	Hov	v do you want to search for driver software?	
	٢	Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.	
	•	B <u>r</u> owse my computer for driver software Locate and install driver software manually.	
			Cancel

3.

Click 'Browse' and select the directory where the drivers are located. Click Next:

5.

6.



Driver installation begins. A window appears stating that the publisher of the driver can't be verified. Click 'Install this driver software anyway'. The installation continues:

		×				
📀 🧕 Update	Driver Software - bMCA - BrightSpec USB MCA					
Installing driver software						
8	Windows Security ×					
$\mathbf{\hat{x}}$	Windows can't verify the publisher of this driver software					
	Don't install this driver software You should check your manufacturer's website for updated driver software for your device.					
	Install this driver software anyway Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.					
⊙ 9	See <u>d</u> etails					

**7.** The wizard finishes and shows the device being installed as a 'bMCA - BrightSpec USB device':



8. The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'bMCA -BrightSpec USB MCA':



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#### Later devices with new firmware (with MS descriptors)

On Windows 8 the driver installation for MCAs with newer firmware (Topaz-X and Topaz-HR series) is done completely automatic. No user intervention is required:

**1**. Connect the MCA USB device to the computer.



Windows automatically installs the driver for the connected MCA:



3.

The bMCA appears in 'Device Manager' under 'Universal Serial Bus devices' as a 'bMCA – BrightSpec USB MCA':

