

Wireless Communication for MC6 family calibrators



Quick-Reference Guide

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Introduction

Wireless Communication feature enables Bluetooth data transfer between an MC6 family calibrator and Beamex CMX or LOGiCAL Calibration Management Software. This feature eliminates the need for USB cables, simplifying the communication.

The Wireless Communication option is delivered with a Bluetooth adapter and requires installing a software. Connect the adapter to the calibrator's USB port, enable Bluetooth communication in the calibrator's settings and pair it with a PC. Data can then be transferred between the calibrator and Beamex Sync application, CMX's Send/Receive window or CWSI client. For more information see chapter [Enable communication between an MC6 family calibrator and a Client device](#).

Detailed system requirements can be found in chapter [Requirements](#).

Safety and connection security

Beamex wireless communication utilizes Bluetooth Low Energy (BLE) technology. We ensure security through authenticated pairing and encrypted connections, employing 128-bit AES encryption. This approach corresponds to Security Mode 1, Level 3, providing robust protection.



Warning: MC6-Ex calibrators: The USB Bluetooth adapter must not be used in hazardous (Ex) area, please remove the adapter before entering hazardous area. The Wireless Communication may only be used in safe areas.

A warning (see picture below) is shown when the device is started up with the adapter, or when the adapter is inserted.



Figure 1: The hazardous area warning prompt

Requirements

For Wireless Communication to function the following criteria must be fulfilled:

- MC6 family calibrator (MC6, MC6-WS, MC6-Ex or MC6-T) with firmware version 4.50 or later and Wireless Communication option installed on the calibrator
 - MC6, MC6-WS and MC6-T calibrators: updated GEN2 mainboard with IN module's serial number 30 000 or higher (to check the IN module's serial number go to **Home View** > **Settings** > **About** and see the second page, Installed Modules, IN).
- USB Bluetooth adapter provided by Beamex



Note: If Beamex provided Bluetooth adapter is not approved in your country, a locally sourced Micro Bluetooth adapter (max. 8 mm / 0.315" height) can be used.

Requirements for the adapter: Bluetooth Low Energy and at least Bluetooth 4.2 support.



Note: It is recommended to use adapters from known manufacturers with all required approvals like CE/UKCA.

- Computer or Smart device with Bluetooth Low Energy and at least Bluetooth 4.2 support, from this point onwards referred to as Client device.



Note: CMX Calibration Management Software: Bluetooth is supported in version 2.15.1 or later.

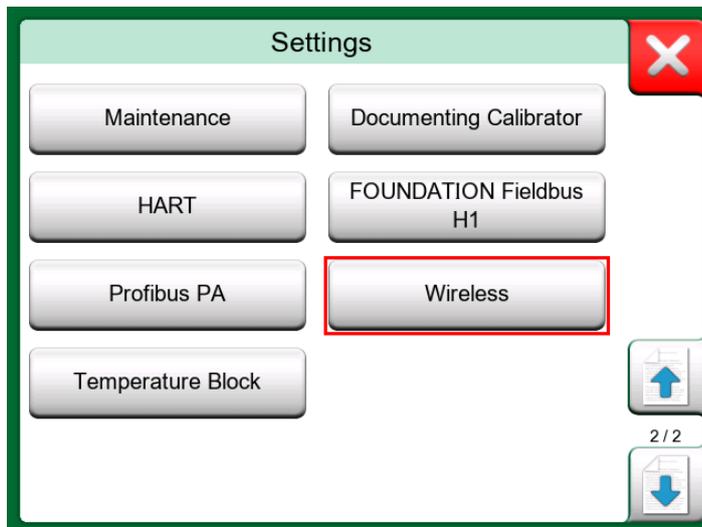


Note: MC6 calibrators: an updated connector cover is needed. To replace it, pull the old cover out with circular movements and then push the new cover in. Based on parts tolerances, in some cases you may need to use pliers in order to push the new connector cover in.

Enable communication between an MC6 family calibrator and a Client device

To enable Wireless Communication between an MC6 family calibrator and a Client device, they need to be paired first. Follow the steps below to pair your MC6 family calibrator with the Client device:

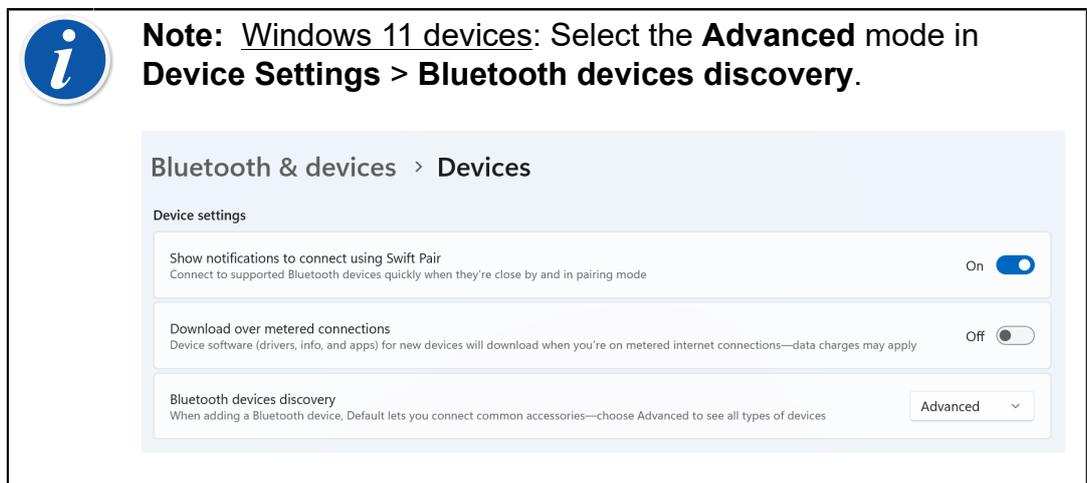
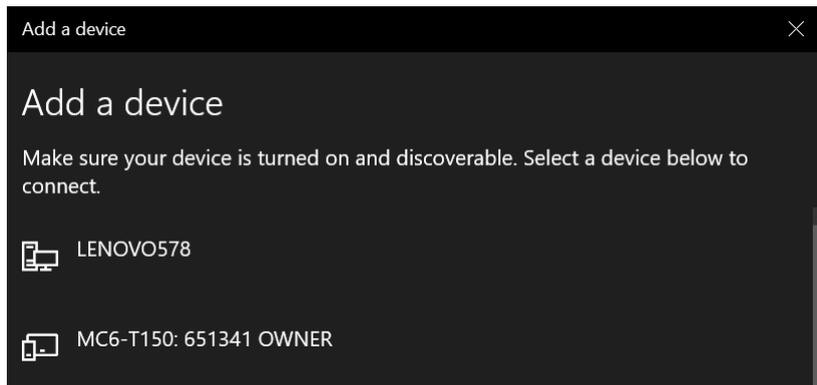
1. Plug the USB Bluetooth adapter to your MC6 family calibrator.
2. Go to **Home View > Settings > Wireless**. Wireless button should be visible and accessible on the second page of Settings. If it is not visible, check the [Troubleshooting](#) chapter.



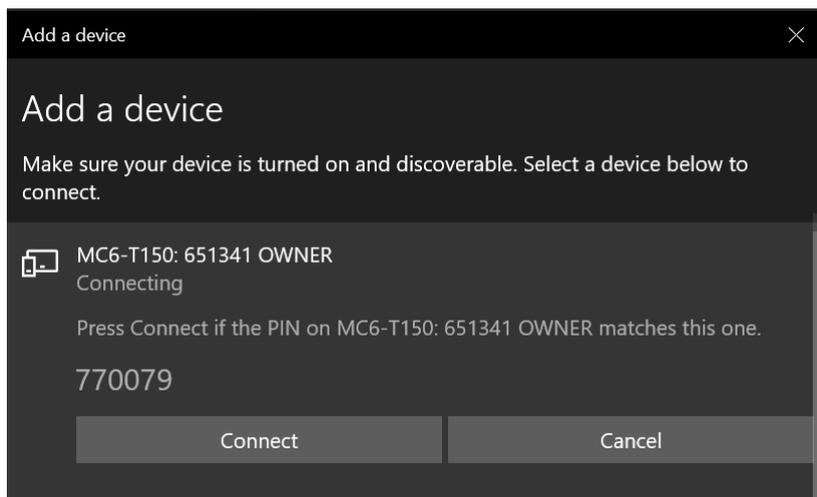
3. Switch the Bluetooth On.



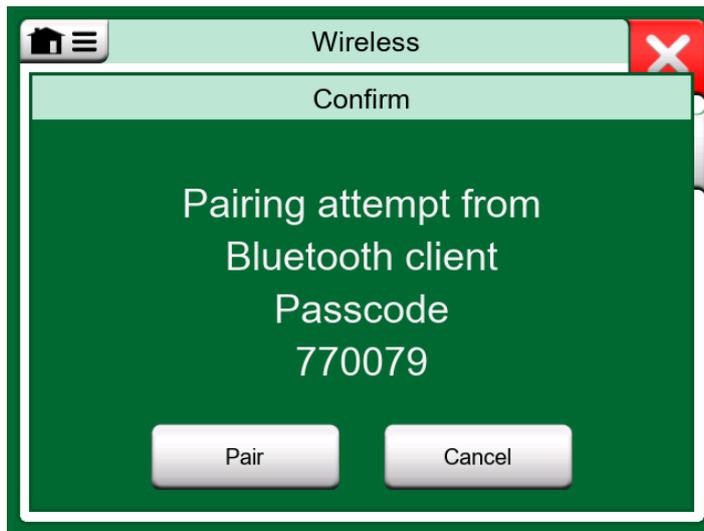
4. Search for available Bluetooth devices on the Client device.



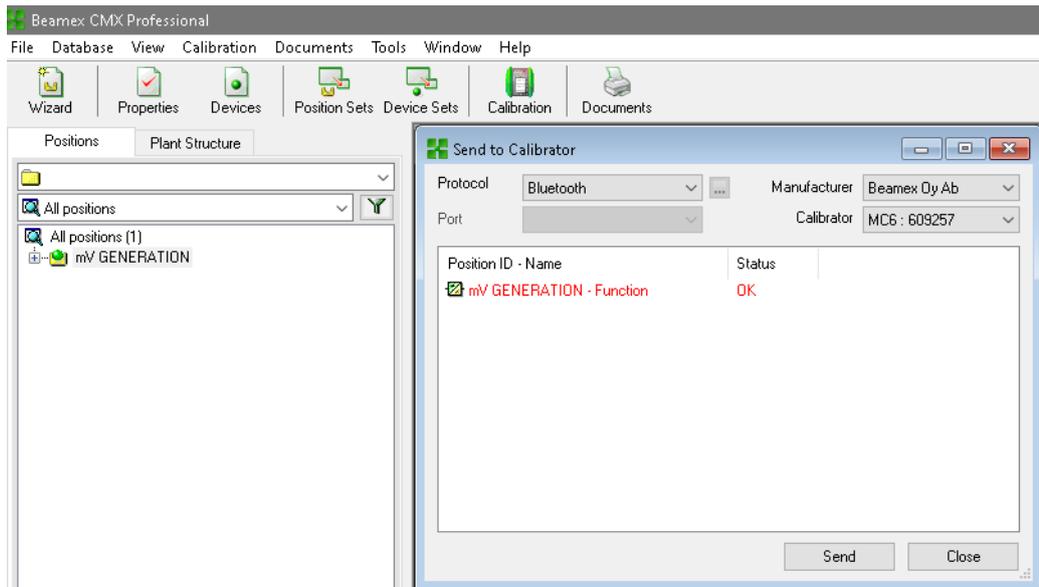
5. Select your MC6 family calibrator.



6. Check that the passcode on both MC6 family calibrator and the Client device matches and press Connect/Pair.



7. After successful pairing, your MC6 family calibrator can be found in Beamex Calibration Management Software. See the example below (CMX Calibration Management Software).



Information window

Wireless Communication Information window can be accessed by pressing the Info button (see the picture below).

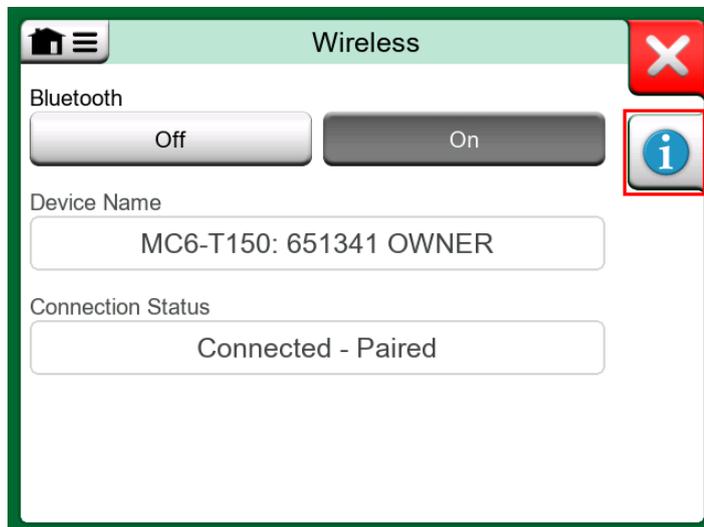


Figure 2: Wireless window, Info button highlighted

Information window shows the main parameters of the connection e.g. host's and client's MAC address and name. For detailed description and example of the parameters see the picture and the explanation table below.

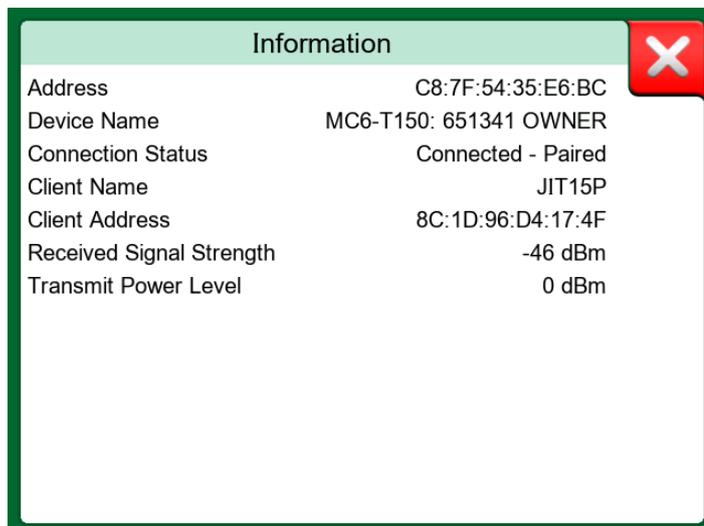


Figure 3: An example of Information window

Table 1: Information window - parameters and their description

Address	MAC address of the host device
Device Name	Name of the host device in following format: " <i>Device model: Serial number Owner</i> "
Connection Status	Connection Status as follows: <ul style="list-style-type: none"> • <i>Disconnected</i>: the devices are not connected • <i>Connected - Not Paired</i>: the devices are connected but not paired • <i>Connected - Paired</i>: the devices are connected and successfully paired
Client Name	Name of the client device
Client Address	MAC address of the client device
Received Signal Strength	Strength of received radio signal
Transmit Power Level	Level of transmit power that is automatically controlled by the Bluetooth protocol

Troubleshooting

No Wireless button visible in the second page of Settings.	
POSSIBLE REASON	SOLUTION
MC6 family calibrator's firmware is not 4.50 or later.	Update the firmware. The latest firmware is available at https://www.beamex.com/ .
MC6 family calibrator has the first generation mainboard (IN Module serial number <30 000).	Contact Beamex Sales for an upgrade.

Wireless button is greyed out.	
POSSIBLE REASON	SOLUTION
Wireless Communication option has not been installed.	Contact Beamex Sales for an upgrade.
No compatible Bluetooth adapter present.	Check that the adapter fulfills the requirements or insert a Beamex recommended adapter.

It is not possible to pair or make the connection.	
POSSIBLE REASON	SOLUTION
USB Bluetooth adapter was swapped between different MC6 family calibrators.	Unpair the USB Bluetooth adapter from both MC6 family calibrator and the Client device to make new pairing possible. For an MC6 family calibrator, unpairing is possible only when Bluetooth is on.

MC6 is not advertising or the wireless connection process is not running correctly.	
POSSIBLE REASON	SOLUTION
	Turn the Bluetooth off and back on to possibly resolve the issue

Connection is lost.	
POSSIBLE REASON	SOLUTION
Noisy environment	Try changing the Connection to Maximum Range (see picture below). It has lower speed, but better coverage.
Great distance between Client device and MC6 family calibrator.	

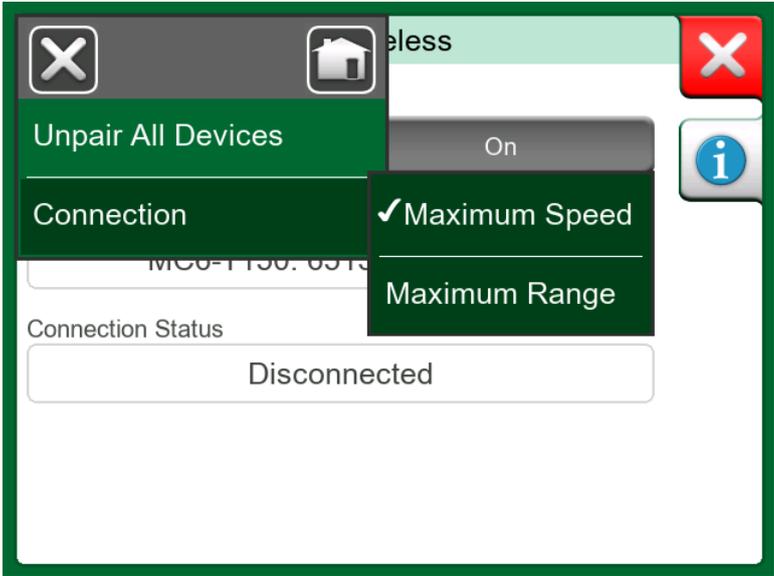


Figure 4: Connection, Maximum Range