

Cube527 Series

Quick Start Guide



First install the WinSPEC software on your PC. It is important to do this before the Cube527 is connected with the PC because required drivers are preinstalled during the software setup. (The software is included in the delivery or can be downloaded from our homepage www.gbs-elektronik.de).

Normally, the Cube527 is delivered together with a detector module or with a charge sensitive amplifier. In case it is a charge sensitive amplifier, connect your detector with it.

Connect the Cube527 with your PC and possibly with an external power supply. The variants of Cube527 series are equipped with different communication interfaces.

Cube527: This variant is equipped with a micro USB port only. It is always powered by USB.

Cube527E: This variant is equipped with a micro USB and an Ethernet port. It can be powered by USB or by PoE (Power over Ethernet). Furthermore it is possible to use a USB wall adapter as an external power supply and nevertheless communicate via Ethernet.

Cube527R: This variant is equipped with a micro USB and a RS485 port. It can be powered by USB or by wires within the RS485 cable. It is possible to use a USB wall adapter as an external power supply and nevertheless communicate via RS485. RS485 communication is possible in a point-to-point configuration and in bus mode. All devices are configured for point-to-point communication by default. The mode can be changed with a tool that can be downloaded from our internet page. If the device is configured for use within a RS485 bus system, its serial number must be entered in the communication build up dialog (see below). All devices of a RS485 bus system have to use the same baud rate.

When the device is powered by an USB communication port, make sure that it is a high power port (up to 500mA). It will not work on bus powered hubs (low power ports).

Start WinSPEC. The program starts with the detection of available MCAs. All detected MCAs are displayed in a list within the communication build up dialog. If your Cube527 is listed, mark it and press "Select". If your Cube527 is not listed, there are several reasons for it.

- If the Cube527 is connected via Ethernet, it takes up to some minutes until the connection is ready to use. Wait and press "Redetect".
- If the Cube527 is configured for use within a RS485 bus system, the serial number must be included for the detection. Insert the serial number in the provided text box and press "Redetect".
- Check cables and connectors and press "Redetect".

After power up, the Cube527 is configured with default parameters. There are detector modules which provide information about itself. If the Cube527 is equipped with such a detector module, the Cube527 is automatically configured and it is in principle ready to use.

If the Cube527 is not equipped with a detector module which provides information about itself or if it is equipped with a charge sensitive amplifier, it has to be configured by the user. In any case, the high voltage must be set according to the specifications of the detector manufacturer. For it, execute the "Setup"/"High voltage" menu command. Insert the recommended value into the text box and press "OK". In principle, the Cube527 is ready for use now.

In the next steps, the configuration is adapted to the special characteristics of your detector, to your measuring sample and to the task to be done.

Execute the "Setup"/"MCA ..." menu command. Select the channels number according to the resolution of your detector. (It makes no sense to use a high channels number if the resolution of the detector does not yield that.) The other parameters of the dialog should remain unchanged.

Execute the "Setup"/"Amplifier ..." menu command. In order to adjust the parameters of this dialog, you need a gamma reference source that is positioned in front of the detector.

First adjust the PZC (pole zero cancelation). For it, press "PZC adjustment" and subsequently press "Automatic PZC by offset minimization" in the appearing dialog. This starts a routine that tries to minimize the zero offset starts.

Now adjust the gain (represented by coarse and fine gain). The best way for the gain adjustment is to use "Visual amplifier adjustment ...". Change the gain as long as the energy peak is on the intended position.

The other parameters of the amplifier setup should remain unchanged. The defaults guarantee a good measurement result. The measurement result can be optimized by changing the remaining parameters. However, for it, expert knowledge is needed.

Execute the "Setup"/"Presets ..." menu command. The dialog allows presetting the stop condition for the measurement. If you want to use the ROI integral or area as stop condition, you have to set a ROI within the spectrum diagram before. In order to set a ROI (Range Of Interest), move the cursor (dotted line within the spectrum diagram) with the direction keys or the mouse pointer to the indented ROI begin. Press the shift key. Move the cursor to the indented ROI end. Release the shift key.

Optionally, the "Setup"/"Stabilization ..." menu command can be executed. Stabilization is useful for long measurements. Read the online help of WinSPEC for more information.

After you have completed the adjustment, the measurement can be started with the function key F4.

Learn more by reading the online help of WinSPEC and the MCA527 user manual.