

multichannel*
systems

MEA*

USB-MEA-Systems System Suggestions



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The USB-MEA-Systems from Multi Channel Systems MCS GmbH

USB based MEA Systems

The new USB-MEA product line from Multi Channel Systems MCS GmbH has essential advantages: Up to 256 recording channels, USB 2.0 High Speed data transfer, flexibility in data processing, and independency from a specific computer.

The **USB-MEA**-Systems are a new generation of universal recording systems that realize data transfer to **any** computer via USB. The USB 2.0 High Speed cable provides data transfer with a sampling rate of up to 50 kHz per channel (40 kHz in case of 256 channels).

The standard MEA product line is based on a data acquisition card, the MC_Card, which is installed in the data acquisition computer. The USB-MEA-Systems are independent from the MC_Card. They use an external data acquisition device with 64, 128 or 256 channels, and can be connected to any computer via USB 2.0. Thus the USB-MEA-Systems are more flexible and easier to transport. It is possible to connect one, two or four MEA amplifiers to one USB-MEA data acquisition device, and each amplifier can be operated independently.

USB-MEA60-, 120- and 240-Systems

The **USB-MEA** devices can replace the MC_Card as data acquisition for MEA recording systems. The system is high flexible: It is possible to connect via 68-pin MCS standard connector up to four MEA1060 amplifiers to the USB-MEA240-System, or two MEA120-Systems. In dependency which amplifiers are used up to 240 electrode channels can be recorded. The analog raw data are digitized and transferred to the computer via USB 2.0 High Speed cable.

The USB-MEA devices have 60, 120 or 240 electrode channels, 4 additional analog channels, 16 digital IN / OUT channels and one real time audio channel.

Parallel to the MEA60- and MEA120-Systems, the USB-MEA60-, 120- and 240-Systems are available with MEA1060 or MEA1060 BC amplifier(s). Temperature controller(s) TC01 or TC02 are always included. Perfusion cannula(s) PH01 (E) are optional.

USB-MEA256-System

The **USB-MEA256-System** is a very compact stand alone solution. The 256-channel recording system with integrated data acquisition and integrated MEA amplifier for MEAs with 252 recording and 4 reference electrodes and heating element (PT100 sensor) transfers amplified and digitized raw data via USB 2.0 High Speed cable with a sampling rate of up to 40 kHz per channel. The small sized device has 252 recording channels, 4 additional analog channels, 16 digital IN / OUT channels and one real time audio channel.

The amplifier can be used together with upright or inverse microscopes. The microelectrode array MEA chip for this amplifier is equipped with 252 electrodes and 4 reference electrodes.

Not integrated in the USB-MEA256-System is a temperature controller TC01 for regulation of the PT100 sensor of the heating element in the ground plate of the amplifier. If you like to use also a perfusion cannula PH01, you need the TC02 temperature controller with two channels.

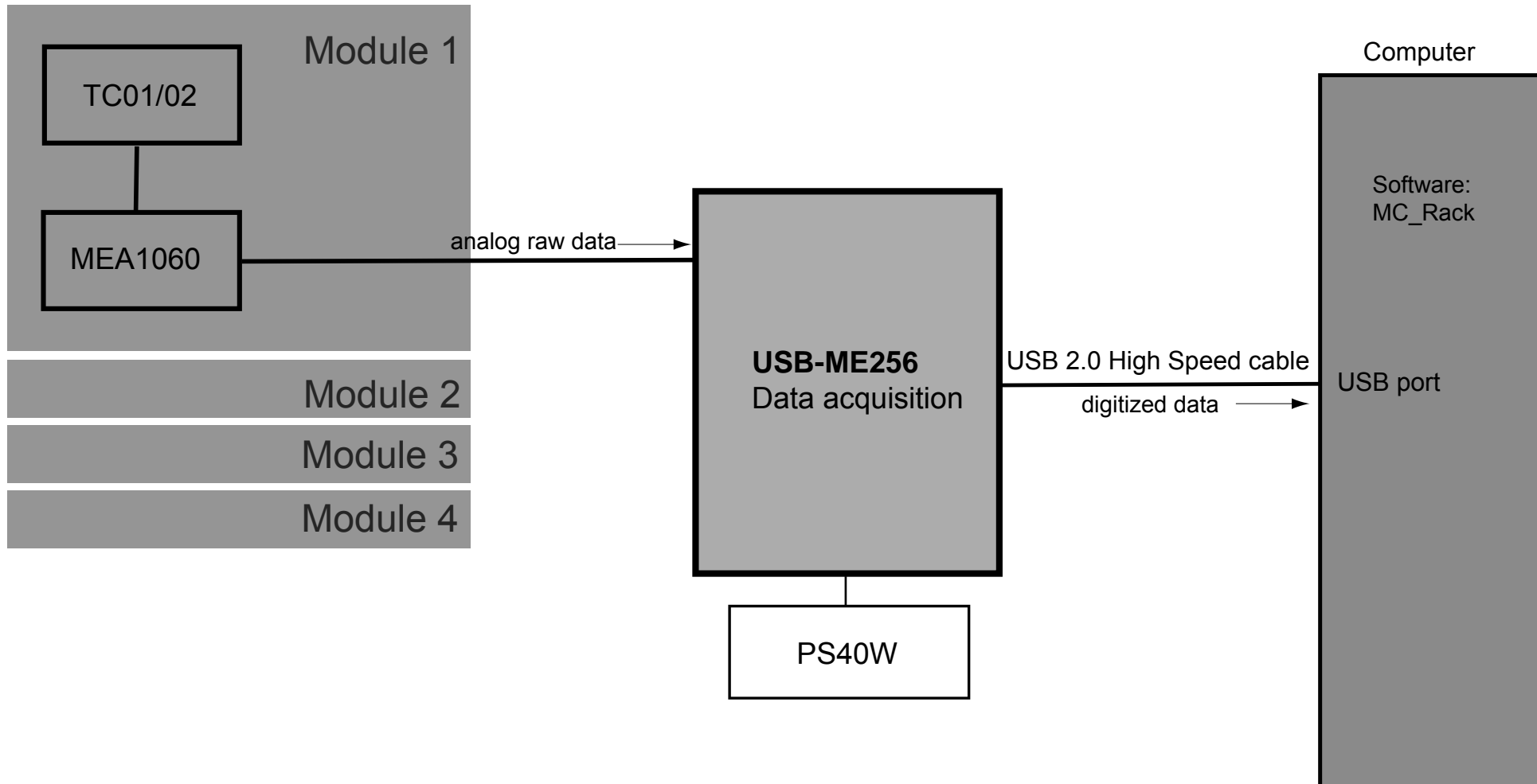
USB-MEA-Systems with external data acquisition device USB-ME and data transfer via USB 2.0 connection to any computer

	MEA Microelec trode array	Data Acquisi tion device	FA Amplifier	TC01/02 1- or 2- channel temperature controller	PH01 Perfusion cannula with programmable temperature	MEA1060- Inv/Up 60-Channel Amplifier with integrated FA	MEA1060-Inv/Up-BC 60-Channel Amplifier Stimulus artifact Suppression	Number of Electrode Channels
USB-ME240-Inv/Up-4-System	5 x	USB- ME256		2 x TC02		4 x		240
USB-ME240-Inv/Up-4-System-E	5 x	USB- ME256		4 x TC02	4 x PH01	4 x		240
USB-ME240-Inv/Up-4-BC-System	5 x	USB- ME256	4 x FA60	2 x TC02			4 x	240
USB-ME240-Inv/Up-4-BC-System-E	5 x	USB- ME256	4 x FA60	4 x TC02	4 x PH01		4 x	240
USB-ME120-Inv/Up-2-System	5 x	USB- ME128		1 x TC02		2 x		120
USB-ME120-Inv/Up-2-System-E	5 x	USB- ME128		2 x TC02	2 x PH01	2 x		120
USB-ME120-Inv/Up-2-BC-System	5 x	USB- ME128	2 x FA60	1 x TC02			2 x	120
USB-ME120-Inv/Up-2-BC-System-E	5 x	USB- ME128	2 x FA60	2 x TC02	2 x PH01		2 x	120
USB-ME60-Inv/Up-System	5 x	USB-ME64		1 x TC01		1 x		60
USB-ME60-Inv/Up-System-E	5 x	USB-ME64		1 x TC02	1 x PH01	1 x		60
USB-ME60-Inv/Up-BC-System	5 x	USB-ME64	1 x FA60	1 x TC01			1 x	60
USB-ME60-Inv/Up-BC-System-E	5 x	USB-ME64	1 x FA60	1 x TC02	1 x PH01		1 x	60
USB-MEA256-System	5 x	integrated	integrated	*1 x TC01/02				252

* = Not included in the USB-MEA256-System, has to be ordered separately.

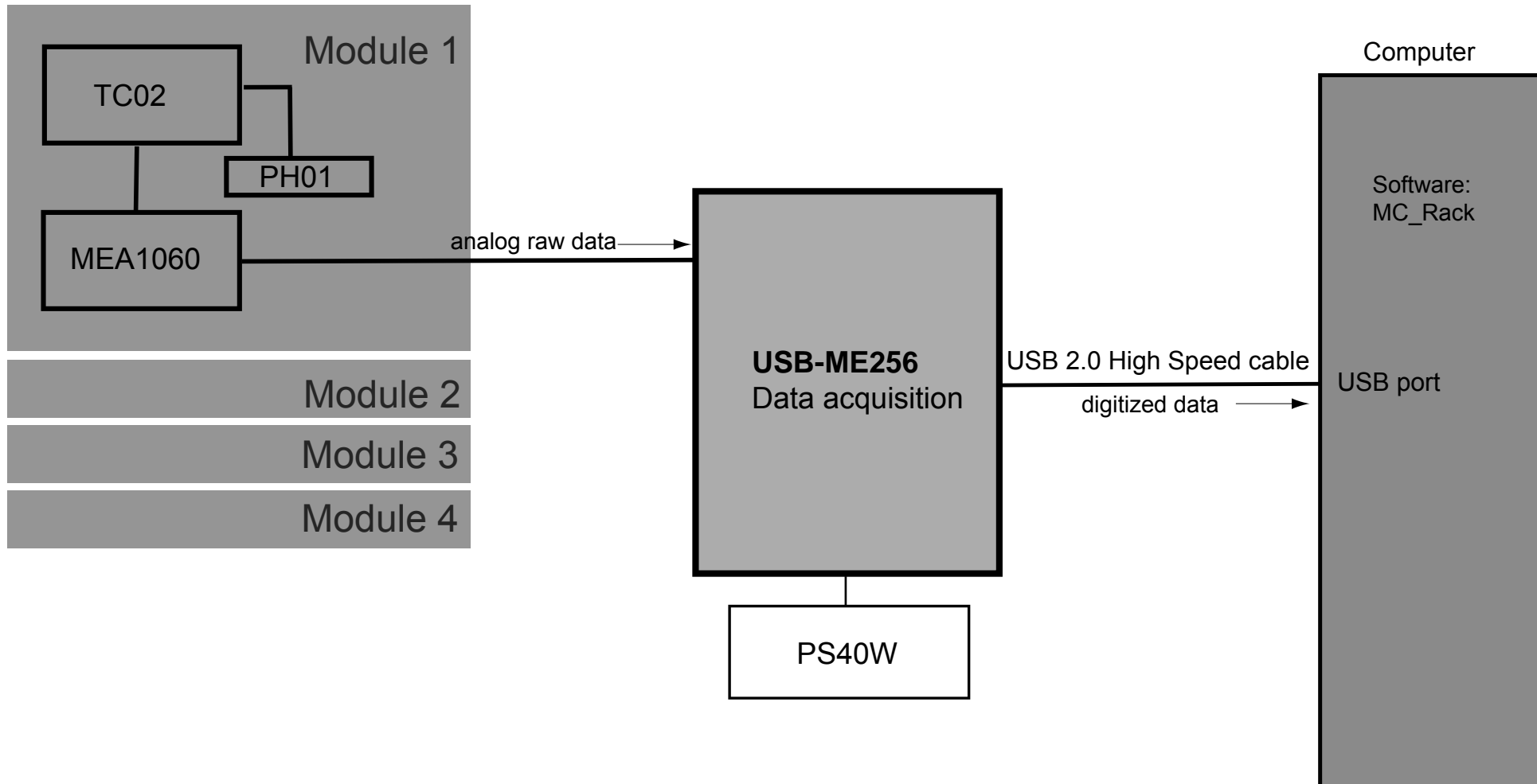
USB-MEA240-Inv/Up-System

240 channel MEA recording system with four independent recording modules, external power supply PS40W and USB based data acquisition USB-ME256 (Stimulator not shown). Each module consists of one recording unit with MEA1060 amplifier and temperature controller TC01/02. Each module is connected to the USB-ME256.



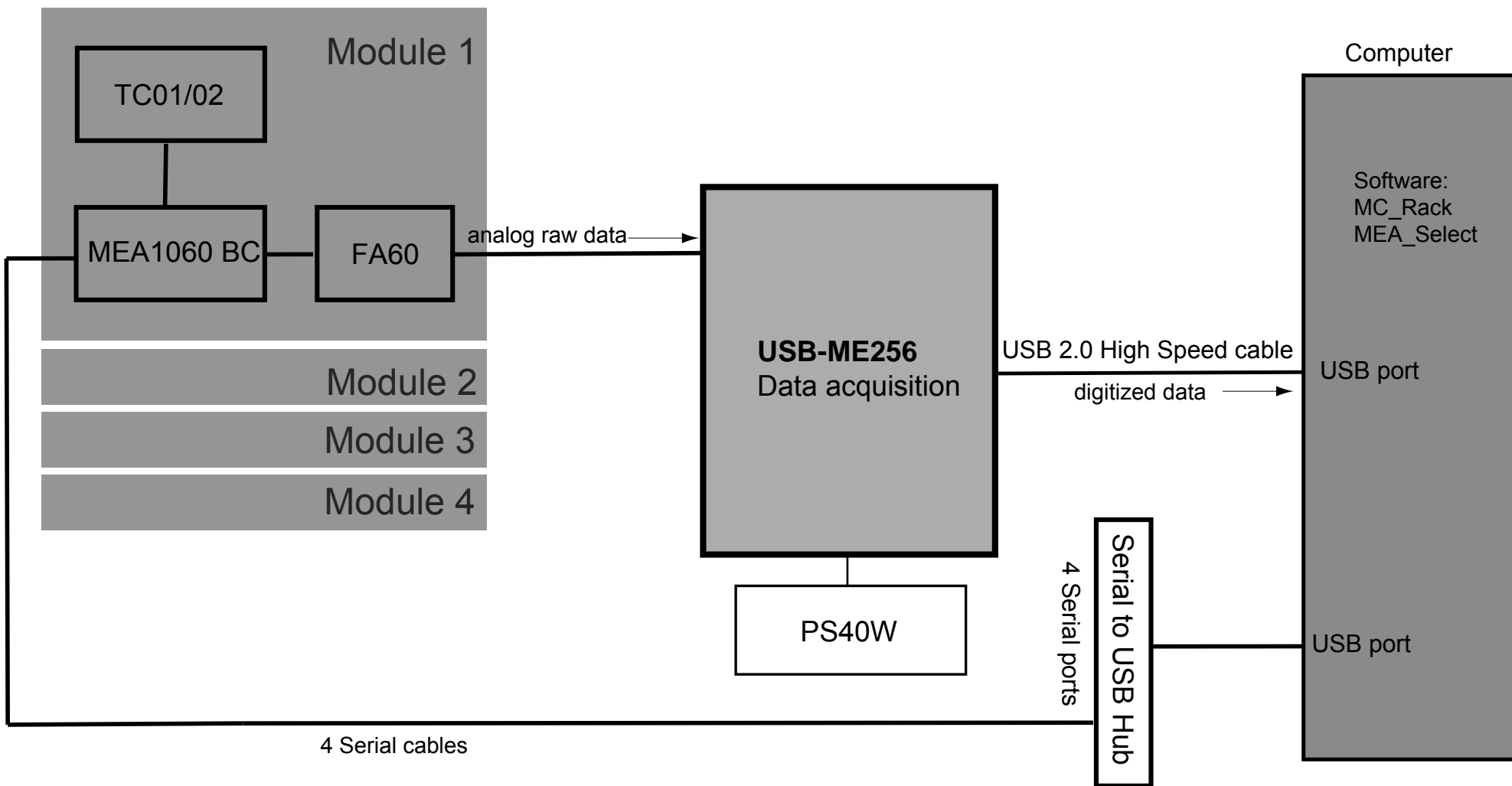
USB-MEA240-Inv/Up-System-E

240 channel MEA recording system with four independent recording modules, external power supply PS40W and USB based data acquisition USB-ME256 (Stimulator not shown). Each module consists of one recording unit with MEA1060 amplifier, temperature controller TC02 and perfusion heating PH01. Each module is connected to the USB-ME256.



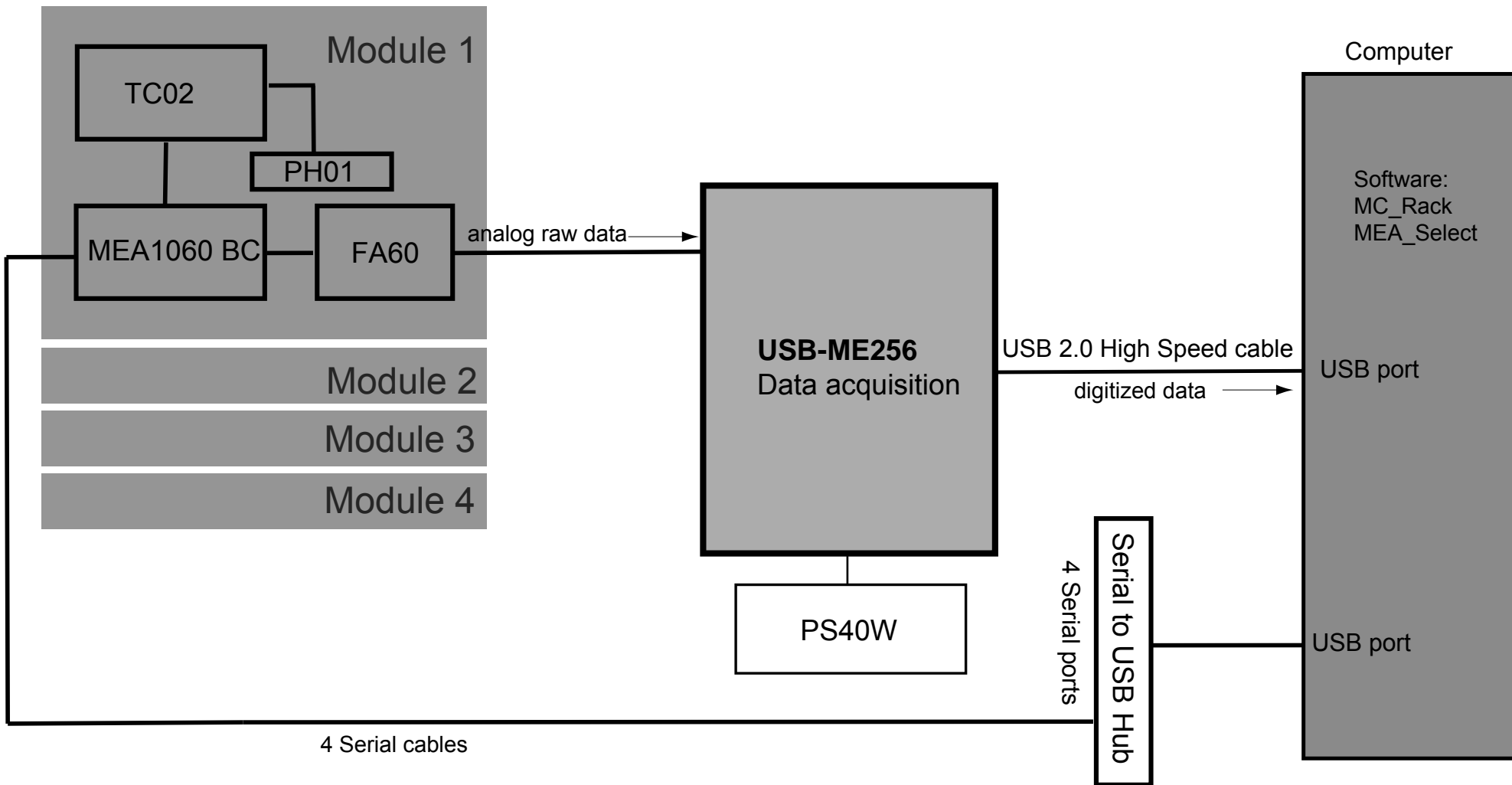
USB-MEA240-Inv/Up-BC-System

240 channel MEA recording system with four independent recording modules, external power supply PS40W and USB based data acquisition USB-ME256 (Stimulator not shown). Each module consists of one recording unit with MEA1060 BC headstage, FA60 filter amplifier and temperature controller TC01/02. Each module is connected to the USB-ME256 and to the computer.



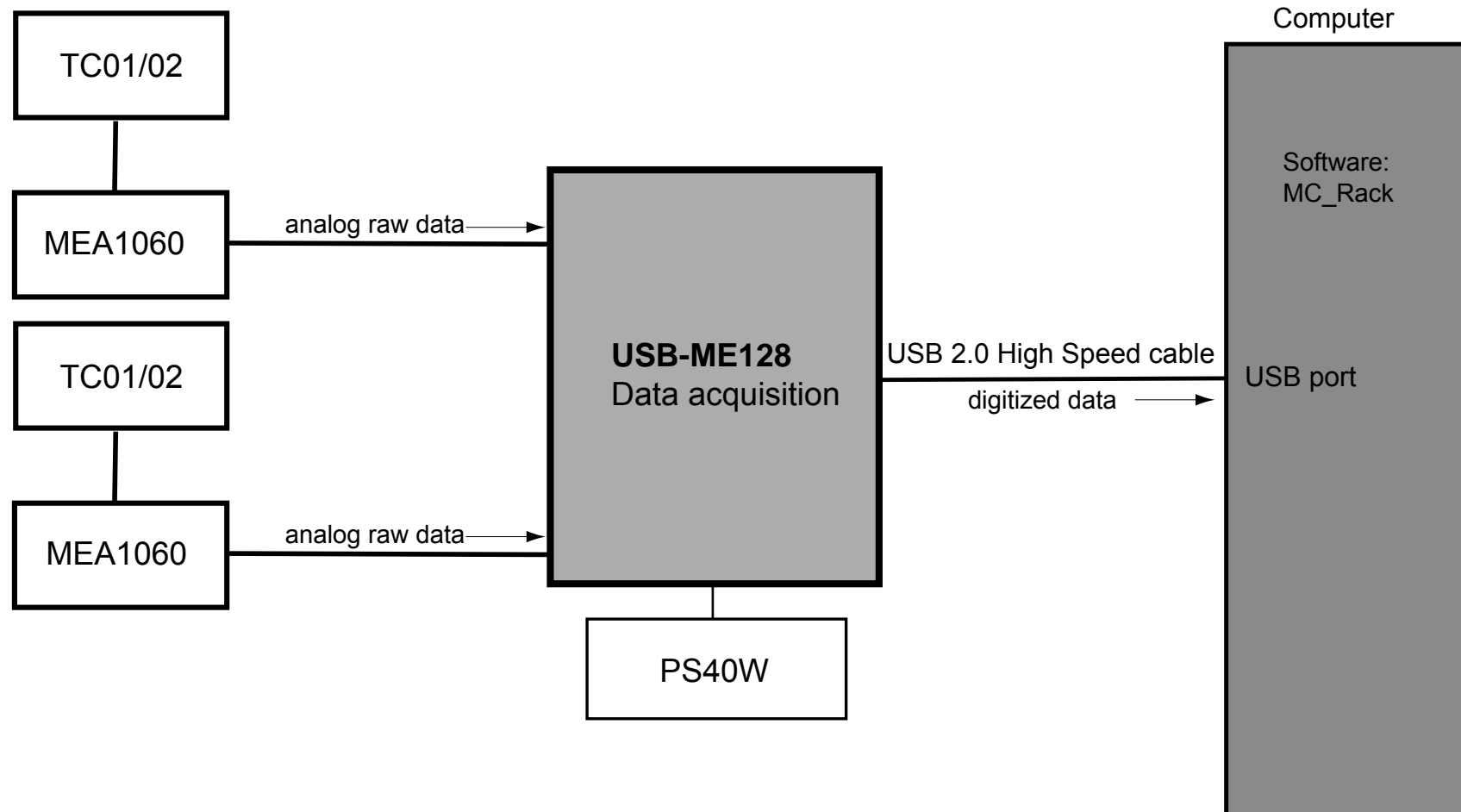
USB-MEA240-Inv/Up-BC-System-E

240 channel MEA recording system with four independent recording modules, external power supply PS40W and USB based data acquisition USB-ME256 (Stimulator not shown). Each module consists of one recording unit with MEA1060 BC headstage, FA60 filter amplifier, temperature controller TC02 and perfusion heating PH01. Each module is connected to the USB-ME256 and to the computer.



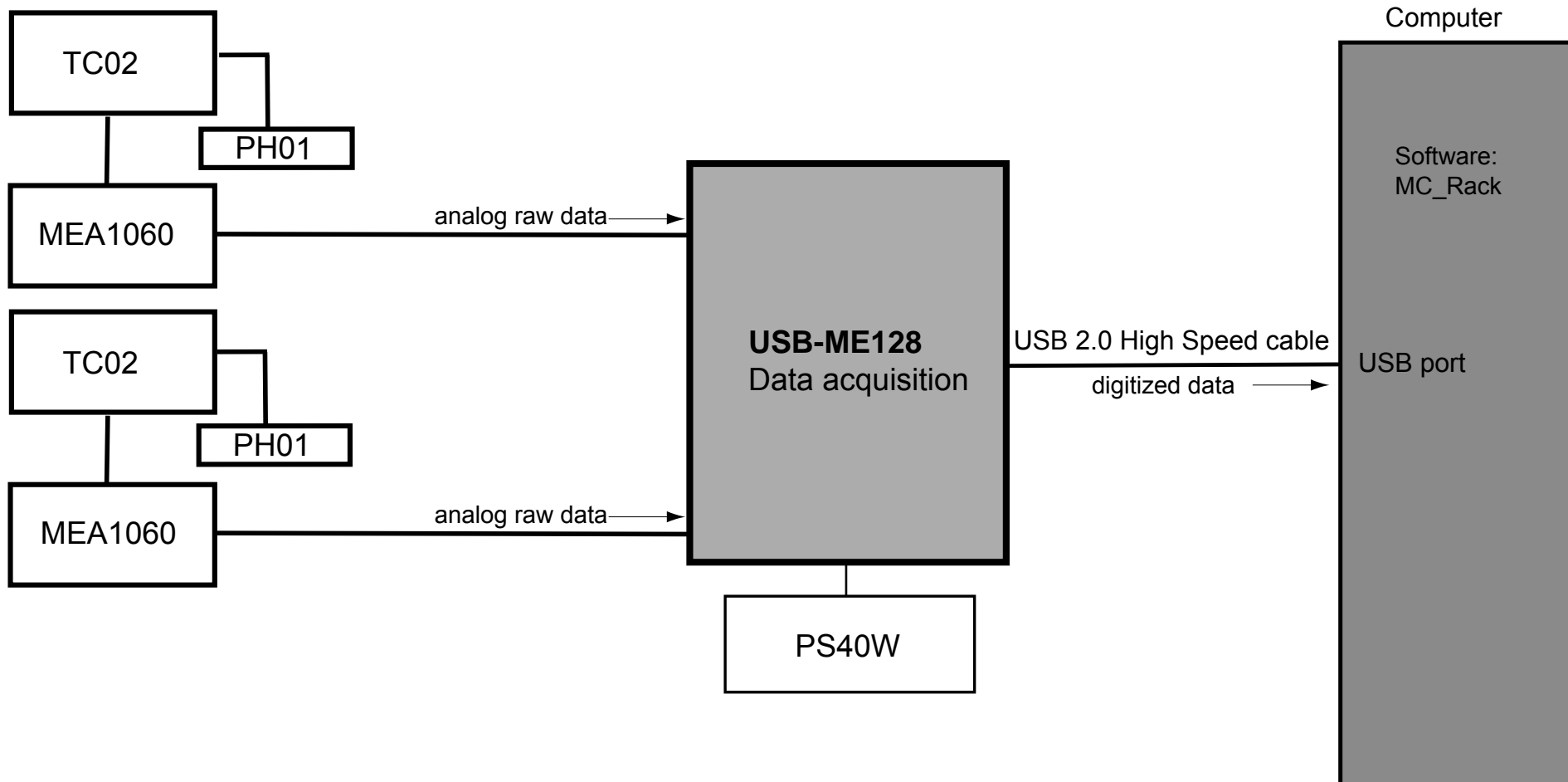
USB-MEA120-Inv/Up-System

120 channel MEA recording system with two MEA1060 amplifiers, two temperature controllers TC01/02, external power supply PS40W and USB based data acquisition USB-ME128 (Stimulator not shown).



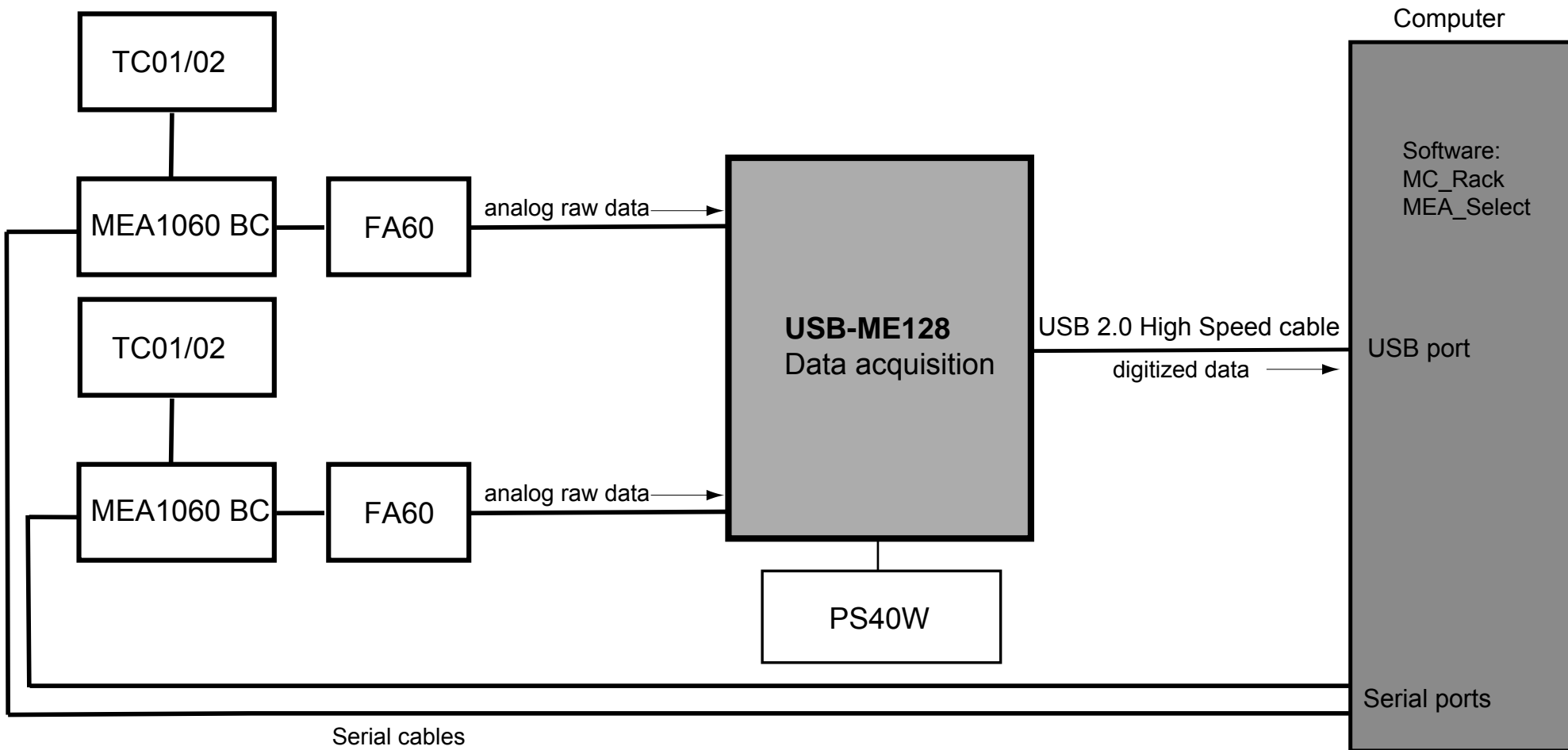
USB-MEA120-Inv/Up-System-E

120 channel MEA recording system with two MEA1060 amplifiers, two temperature controllers TC02, two perfusion heatings PH01, external power supply PS40W and USB based data acquisition USB-ME128 (Stimulator not shown).



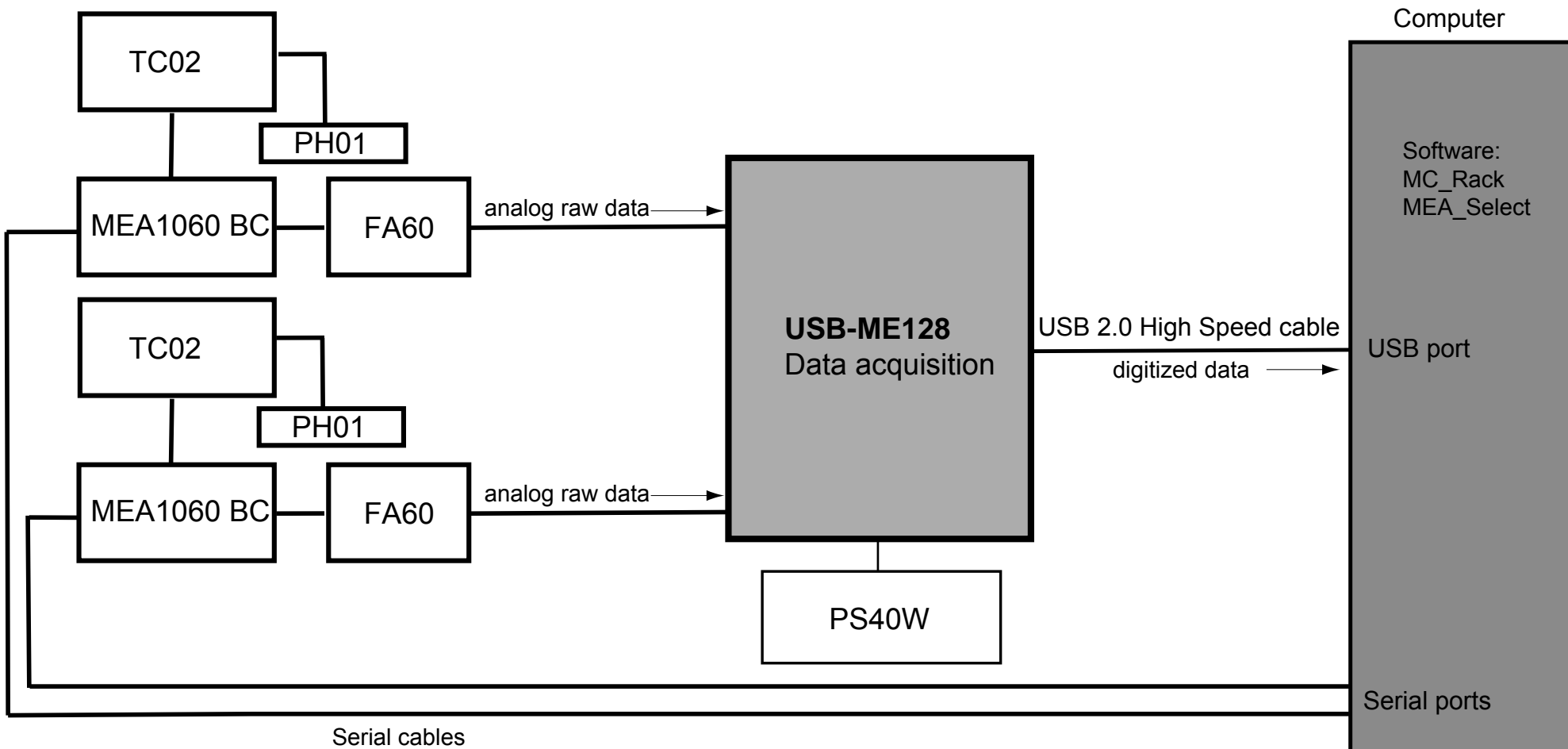
USB-MEA120-Inv/Up-BC-System

120 channel MEA recording system with two MEA1060 BC headstages, two filter amplifiers FA60, two temperature controllers TC01/02, external power supply PS40W and USB based data acquisition USB-ME128 (Stimulator not shown).



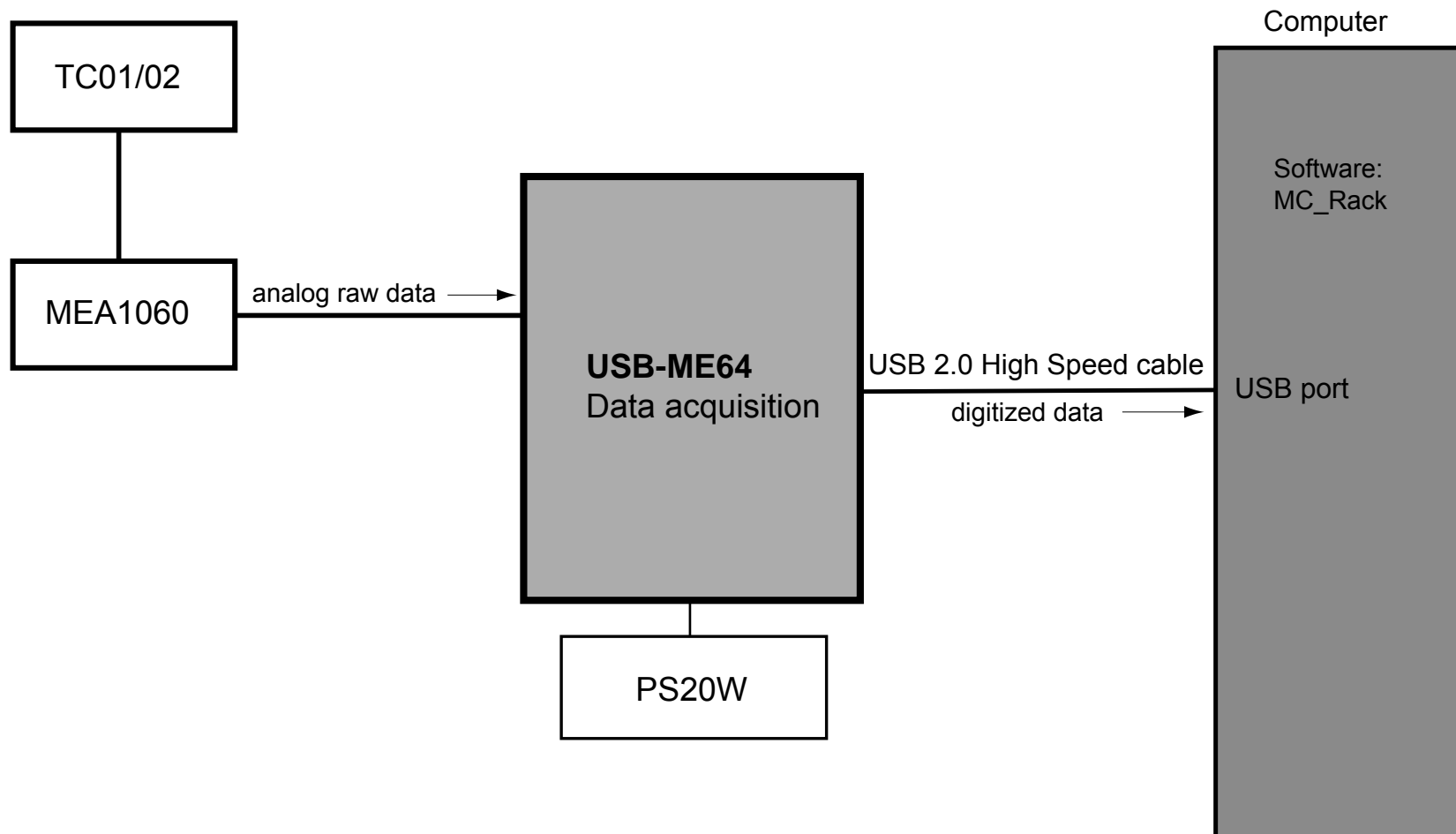
USB-MEA120-Inv/Up-BC-System-E

120 channel MEA recording system with two MEA1060 BC headstages, two filter amplifiers FA60, two temperature controllers TC01/02, perfusion heatings PH01, external power supply PS40W and USB based data acquisition USB-ME128 (Stimulator not shown).



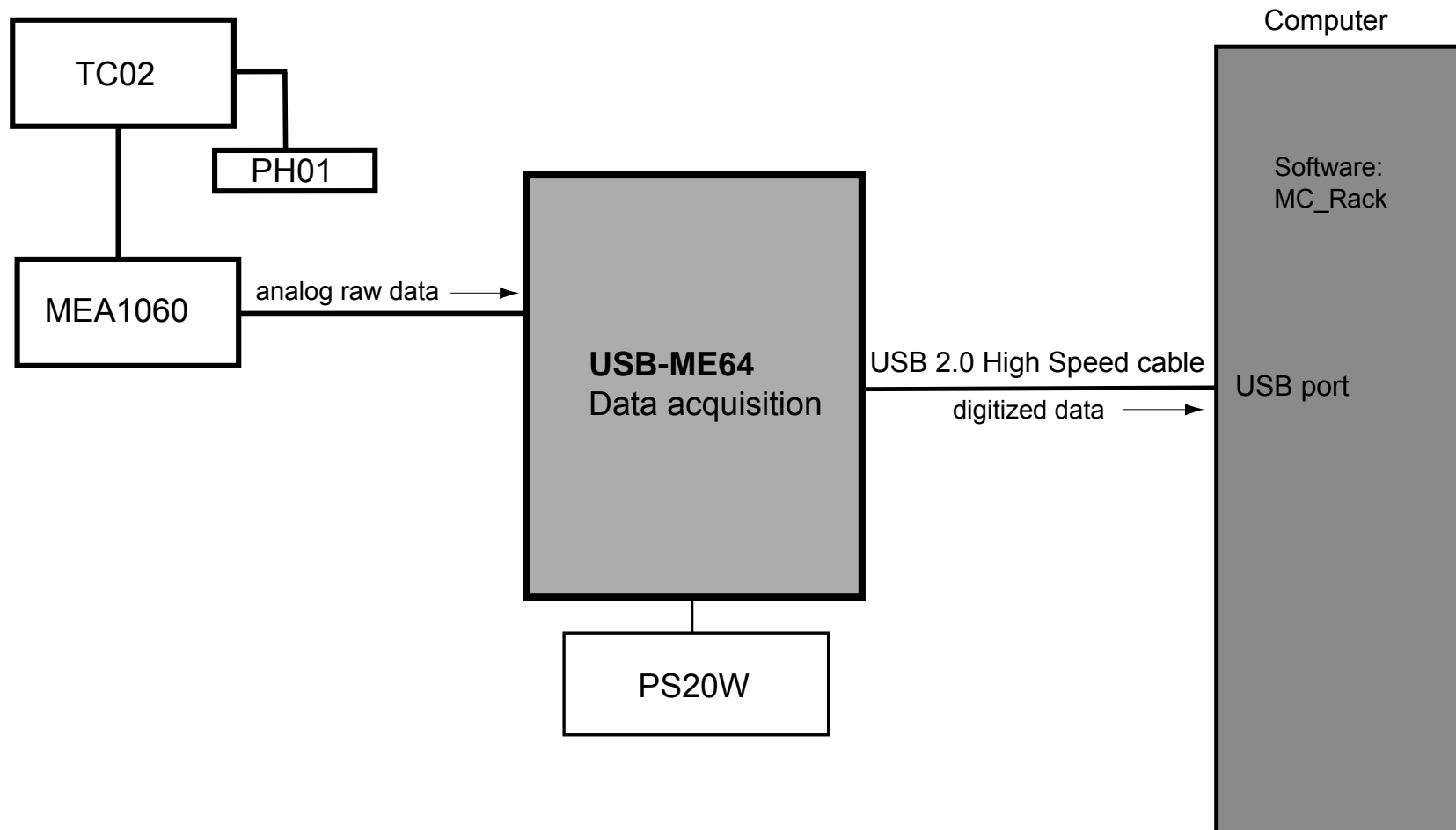
USB-MEA60-Inv/Up-System

60 channel MEA recording system with temperature controller TC01/02, external power supply PS20W and USB based data acquisition USB-ME64 (Stimulator not shown).



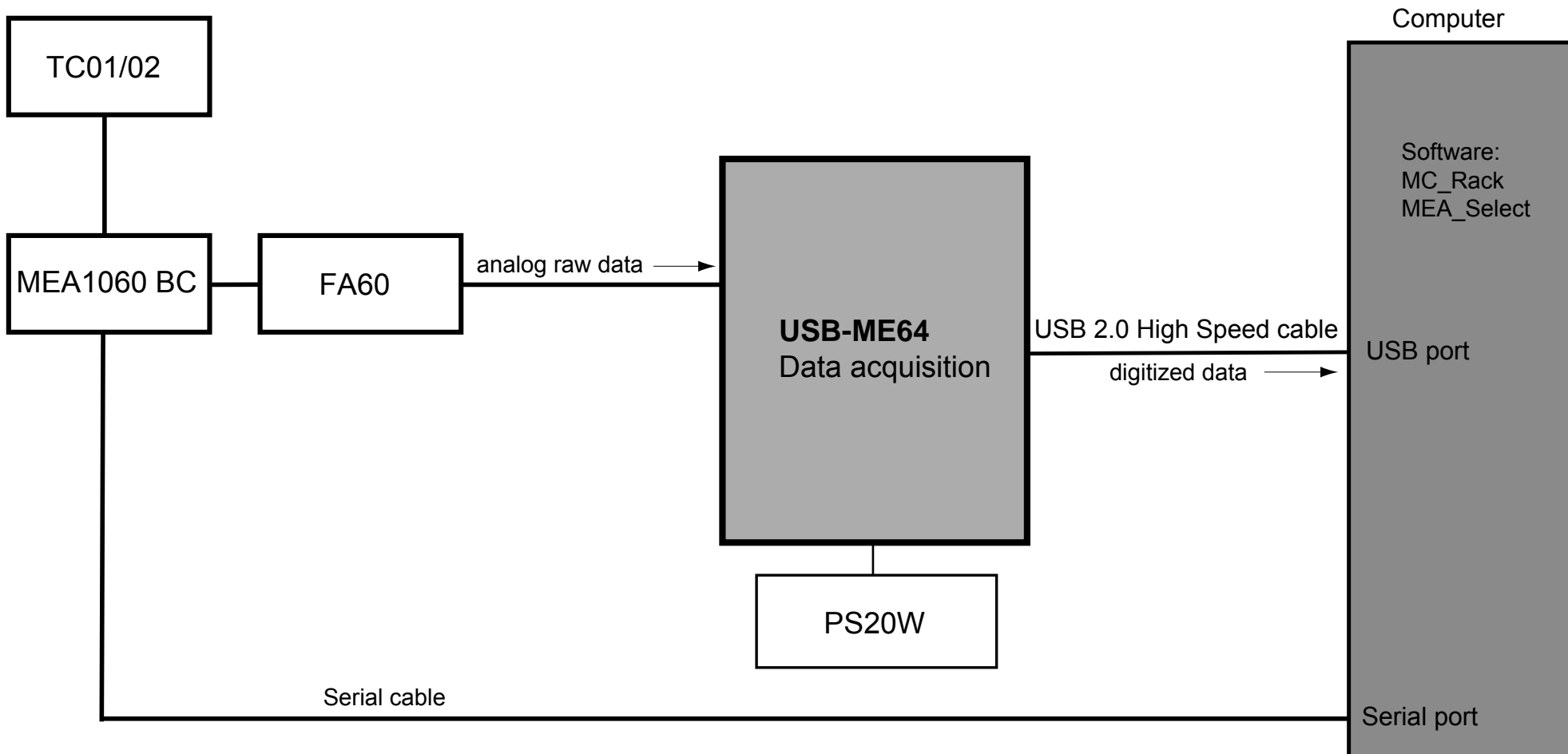
USB-MEA60-Inv/Up-System-E

60 channel MEA recording system with temperature controller TC02, perfusion heating PH01, external power supply PS20W and USB based data acquisition USB-ME64 (Stimulator not shown).



USB-MEA60-Inv/Up-BC-System

60 channel MEA recording system with MEA1060 BC headstage, filter amplifier FA60, temperature controller TC01/02, external power supply PS20W and USB based data acquisition USB-ME64 (Stimulator not shown).



USB-MEA60-Inv/Up-BC-System-E

60 channel MEA recording system with MEA1060 BC headstage, filter amplifier FA60, temperature controller TC01/02, perfusion heating PH01, external power supply PS20W and USB based data acquisition USB-ME64 (Stimulator not shown).

