MC_Card Installation
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1 About this Manual

Information in this document is provided for distributors of Multi Channel Systems products, technical support, and for very advanced users that need to install the MC_Card or related components.

The MC_Card is the data acquisition card of MEA and ME Systems from Multi Channel Systems MCS GmbH. Please see also the separate documentation of the systems and its components for more information about the setup and operation.

Generally, users should not modify delivered MEA and ME Systems. MCS cannot guarantee a proper behavior of the system if hardware or software components of the data acquisition computer have been modified.

As computer components may interfere with the data acquisition, use only computer components recommended for the use of MEA and ME Systems. Please ask your local retailer for an up-to-date information on this issue.

Warning: Switch off the computer and disconnect it from the power before opening the case. Make sure not to touch metal circuits to avoid damage by the body's electrostatic charge. Do not touch any components except those described below. Do not let drop screws or other small parts into the computer case. Be extremely careful in handling the computer and all components.

2 MC_Card Setup

MC_Card standard setup for MEA-60-System

![MC_Card, IPS10W, and connectors](image)

Figure 1  **MC_Card, IPS10W, and connectors**
The photograph shows the components of a standard MEA-60-System that will be integrated into the data acquisition computer.
The analog input signals are acquired and digitized by the **MC_Card**, a PCI slot board. The computer supplies power via the **isolated supply IPS10W** for all devices of the setup, except the temperature controller or programmable gain amplifier.

The **MC_Card** supports 64 analog channels and 128 analog channels with expansion. **All MEA Systems** have 3 analog inputs (BNC connectors) for accessing channels 61–63 (A1–A3). The **MC_Card** expansion for channels 65 to 128 is delivered with **ME128** and **MEA120** systems.

A digital channel with 16 digital in- and output bits is available. **All MEA Systems** are delivered with 3 digital input sockets (BNC connectors, input bits 0–2). A digital IN/OUT expansion supporting all 16 digital input and output bits is available on request. Please state this on the **order**, as the MC_Card needs to be modified at the manufacturer’s site for supporting this feature!
3 System Components

3.1 MC_Card

**MC_Card connectors**

- Electrode IN (Ch. 1-64)
- Analog IN (A1-A3)
- MC_MX64 (Ch. 65-128)
- Digital IN (Bits 0-2)
- IPS10W

**Note:** If you observe any unexpected behavior or malfunctions after installation, try switching the PCI slot first. There is sometimes an interference with other computer components, which can be easily resolved by switching the PCI slot.

→ Insert the MC_Card into a free **PCI slot** of the data acquisition computer. Note that there is a break in the pins, which must fit over the plastic bridge across the PCI slot. You should not touch the metal circuitry to avoid damaging the card by your body’s static charge.

→ Secure the MC_Card by screwing the angled part of the metal plate to the screw hole for that slot.

3.2 Isolated Power Supply

→ Connect the isolated power supply (IPS10W) to the internal 12 V power supply of the computer. If the connector is already occupied, you have to disconnect the computer’s power supply, connect it to one connector of the IPS10W (in the middle between the IPS10W and the other connector), and connect the other connector of the IPS10W to the component that had been connected previously to the computer’s power supply. The power is then delivered to both the previously connected component and to the IPS10W.

→ Connect the IPS10W to the MC_Card.
3.3 MC_Card Expansion for Channels 65 to 128 (ME-128 and MEA-120 Systems Only)

MC_Card expansion for channels 65 to 128

→ Connect the MC_Card expansion to the MC_Card and secure the metal plate with a screw.

3.4 Additional Analog Inputs (MEA Systems Only)

→ Plug the analog input connector into the analog input socket of the MC_Card or the MC_Card expansion. Make sure to orient the connector in the correct way. The connector has to be positioned in such a way that the red stripe at the side of the strip shows directly to pin 1.

→ Secure the metal plate with a screw.
3.5 Digital Inputs (Standard BNC Interface)
The standard version of the digital interface for MEA and ME Systems includes 3 BNC sockets for input bits 0–2.

Plug the digital input connector into the digital input socket of the MC_Card and secure the metal plate with a screw.

3.6 Digital IN/OUT Extension (68-Pin, Available On Request)
The extended version of the digital interface that supports all available 16 input and output bits is a 68-Pin socket.

Note: The socket required for connecting the 68-Pin interface is not included in the standard scope of delivery anymore, but available on request. If a customer decides to use this interface later, the MC_Card needs to be upgraded at the MCS site.

Plug the digital IN/OUT extension connector into the digital input socket (see figure) of the MC_Card and secure the metal plate with a screw.