



WHAT YOU GET FROM US

- **System Prediction** - With your devices and network descriptions, we can map your setup into the MSE and can assess the stability of the system.
- **Measurement Results** - Within the MSE we measure and analyze the signals on the physical. Therefore we can provide extensive measurement results especially for the critical paths.

WHAT WE NEED FROM YOU

- **Topology Description** - The MSE can model a wide variety of different topologies, ranging from simple star to complex tree topologies.
- **Devices** - You provide the devices that you want us to verify. This can be M-Bus slaves as well as masters. The MSE is able to handle 2 masters and up to 250 slaves.
- **Problem Statement** - If you provide us the conditions, under which your installations are not working properly, we can emulate this and analyze under lab conditions.

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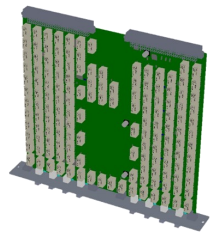
M-BUS SYSTEM EMULATOR (MSE)

M-BUS ISSUES IN REAL LIFE

The M-Bus protocol (EN13757) is in widespread use for metering applications in home and neighborhood area networks. Many installations are using legacy wiring. This may lead to incompatibilities in real-life installations and to problems in the deployment of new M-Bus networks. Those problems are often only found during the installation and when it is too late. The issue of incomplete specifications has been recently addressed in the OMS AG4.

NETWORK EMULATION

A network emulator allows the dynamical variation of the network parameters without having real physical wires. This allows changing of the physical topology without manually changing wires. The M-Bus System Emulator (MSE) operates as a black box with several devices connected to it. It mainly concentrates on providing bus oriented topologies as they are the only relevant setups for M-Bus in practice. Therefore, the M-Bus network emulation supports the test of multiple different M-Bus topologies.



NETWORK PREDICTION, TEST AND MEASUREMENT

The main goal of the MSE is to provide an environment to test real M-Bus based metering installations. It provides an easy to use web interface to define different topologies with different cable lengths. There might be several km² on our lab table. Furthermore it gives the possibility to install additional measurement or interference equipment to identify potential problems in the anticipated setup.

