

Generic Interface Simulator (GISim)



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Hardware-in-the-Loop Simulation for System Development, Test and Integration



Hardware-in-the-Loop (HIL) simulation plays an important role in the current industry. HIL simulation provides interaction between real hardware components of a system and a real-time simulator that computes the performance of specific (or rest of the) system. GISim is a HIL simulation which can be used in system development and test phases where real hardware does not exist. GISim provides interface communication simulation. Based on the received messages from the connected system GISim updates its configuration and provides the corresponding response message to the system at the interface.

GISim provides multiple communication port (designed on need basis) which can be used exchange data in parallel or one-at-a time. GISim includes current load which emulates current consumption of the simulated device. In addition, GISim has a USB port for updating the simulated device configuration. One of the most important feature of GISim is the flexible software simulation framework running inside the simulator. The simulation framework allows using custom messaging options without a firmware update. The object oriented design of the simulation framework gives the flexibility to update messaging behavior with a single configuration file using an USB drive.

Technical/Functional Description:

GISim consists of following parts:

- Multiple port simulation unit
- Connecting Cable
- Power Cable
- Transportation Case

Interfaces;

- Individually isolated serial interface
- Supports various communication interfaces (RS422/ RS485/ RS232/ Ethernet/ USB)
- LEDs and/or LCD monitor indicating fault message and power status

Capabilities;

- Providing simulated device communications protocol
- Providing simulated device electrical performance (Startup, power drain etc.)
- Providing simulated device behavior for testing the rest of the system
- Providing simulation of multiple devices in parallel.
- Flexible object oriented software simulation framework.
- Updating messaging behavior without updating the firmware.
- Low power consumption
- Fast boot-up time less than 1 second
- Compact design
- Flexible mounting options

Üniversiteler Mah. İhsan
Doğramacı Bulvarı No:17/B 06800
ODTÜ Kampüsü-Ankara/ TÜRKİYE

Tel +90(312) 218 89 00
Fax +90(312) 218 89 90

info@kocsavunma.com.tr

Ünalın Mah. Ayazma Cad.
Çamlıca İş Merkezi B3 Blok 34700
Üsküdar İstanbul/ TÜRKİYE

Tel +90(216) 556 11 00
Fax +90(216) 556 11 88

www.kocsavunma.com.tr