

SIP Connectivity Solutions

Challenges facing smart buildings

The technologies used in our buildings are becoming more numerous and more complex, making them work together to create a co-ordinated and energy efficient building has become more of a challenge.

Additionally every building has individual demands and requirements, and each customer has to balance a unique combination of factors including security, usability, visibility, environmental considerations, user comfort, and of course both build cost and long-term running cost.

Innovative communication interfaces

This is where the need for interfacing these systems back to a central Building or Energy Management system well as other systems becomes vitally important. Its is an essential step in ensuring all systems work together seamlessly to balance the requirements of the building users and energy efficiency targets.

Synapsys cost-effective interfacing solutions have been designed to simplify communications between a wide variety of plant and equipment. They have been developed by our experienced engineers to be straightforward to install and easy to use, and all products can be developed into bespoke systems for specific applications when required. Our interfacing solutions save not only valuable engineering time, but also the associated costs which can come from difficult to engineer solutions.

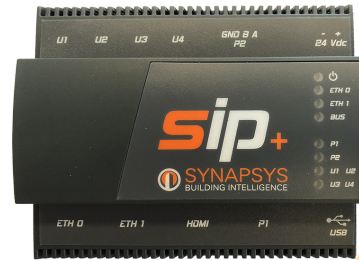
Whatever your requirement, our flexible and practical products combine with our support services to help you deliver projects to your customers on time and within budget.

Keeping data secure

The Synapsys range of products and software solutions ensures your building data is held, accessed and transferred securely when required. All Synapsys devices and software solutions are password protected and the data transferred to and from them can be via secure FTP connections.

Our SIP devices support the two mainstream protocols available for Secure FTP transfers named SFTP (FTP over SSH) and FTPS (FTP over SSL).

The ability to enable secure file transfer coupled with the password requirements for accessing our hardware and software solutions ensure our products meet the requirements expected by our customers.



SIP products at a glance

- Cost-effective solutions
- Easy to install and commission
- No ongoing licenses or maintenance fees
- Comprehensive technical and software support
- Simple web based configuration
- Proven hardware reliability
- An extensive range of protocols and applications available
- SIPeasy file compatible for easy commissioning
- Time saving solutions
- Open supply to all with competency to use the products
- No need for specialist tools or software

SIP2 Interface Solutions

SIP2 is your gateway to efficient interfacing, ensuring meter data can be seamlessly integrated into both Building Management Systems (BMS), Energy Monitoring Systems and our own INSIGHT Billing and Energy platforms. The hardware is equipped with a range of features to meet your specific needs, including:

- MQTT for IoT connectivity
- REST Server for IoT connectivity
- Synapsys Virtual IQ (vIQ)
- Synapsys BACnet Integration Controller (BIC) Server
- Data Acquisition
- ModBus
- M-Bus
- Digital input/Pulse counter



SIP+ Solutions

SIP+ EMT IF is the energy variant of our successful and established range of SIP interface devices and work on the same principals, delivering a simple but effective solution to meet your exact requirements for integration and energy monitoring applications.

SIP+ Data IF Acquisition, simplifies and accelerates BMS data collection, integration, and data transfer from your building's plant, meters, sensors and systems. Designed to handle vast amounts of data, enabling in-depth analysis of building performance.

All variants of our SIP+ hardware use our latest multiprotocol platform which enables the user to connect to, collect and display data from devices via:

- M-Bus
- ModBus
- BACnet
- Trend
- MQTT
- REST
- LoRaWAN
- and many other protocols.



Virtual IQ (vIQ)

Our SIP solutions for interfacing to Trend BMS systems have Virtual IQ (vIQ) software included that enables the SIP device to sit straight onto the Trend network. Each third party device interfaced can then be presented as if it were a Trend controller. Additionally, each value transferred is provided as a standard Trend module - sensor, knob, switch and digital input and have the full complement of functionality such as labels, alarms and plots.

BACnet Integration Controller (BIC)

Our latest SIP+ multi protocol hardware now comes with all of the features of our standard SIP interfaces, plus our latest BACnet Integration Controller (BIC), all inside one device. BIC's present third party devices as BACnet devices, with values transferred as BACnet object types, with Notification Class and Trendlog functionality. Our BIC software simplifies the application of BACnet by making the head end engineering easy and simply to apply.

SIP IP Converter

Streamline the integration of electricity, water, gas and other meters in your building with ease. Effortlessly connect to your Building Management System using an IP connection.

Designed to efficiently convert ModBus, M-Bus, or pulse/digital input values to ModBus, M-Bus TCP/IP. It utilises built-in web pages for configuring the necessary communication parameters required to make the transformation from serial communications to the TCP/IP network.

Once configured, the SIP IP Converter enables the seamless transfer of information from a network of ModBus and/or M-Bus serial slave addresses to ModBus and/or M-Bus TCP/IP Master(s). The digital/pulse acquisition input becomes a unique address on the fieldbus TCP/IP network.

The hardware's small footprint makes it ideal for integration within panels and other space-constrained locations.



SIPslice communication interfaces

We now provide a range of our own SIPslice communications level converters that can be used with our SIP+, and other integration technologies.

SIPslice M-Bus Level Converter

SIPslice M-Bus Level Converters have been developed to provide a simple and efficient way of interfacing third party M-Bus meters such as Heat, Gas, Water, Electricity or Pulse counters to an M-Bus master, for example our own SIP+ or other hardware provided by Distech, Tridium, Trend, etc.

Designed for receiving and transmitting data from multiple 1.5mA meter loads utilising the M-Bus protocol. The converter is also resistant to sustained short circuit and is available for a wide power supply range.

With a small footprint and variants ranging from 3 to 250 slave devices, supporting M-Bus communications via both RS232 and RS485.

- Available in 3, 20, 60, 120 or 250 unit load variants
- Transmission rate 300 to 9600 Baud
- 1 x RS232 connection
- 1 x RS485 connection
- 1 x M-Bus protocol (M+ and M-)
- Small footprint
- LED's for power, Bus activity, Health and Comms
- DIN rail mounting solution



SIP ModBus slice

The SIP ModBus Slice has been developed to extend the number of RS232 and RS485 ports available to the SIP+ device for use with multiple ModBus network applications or additional devices which communicate on RS485 or RS232.

Designed for receiving and transmitting data utilising the ModBus protocol. SIP ModBus Slices have a small footprint supporting communications via RS232 or RS485. The SIP Serial Slice is also resistant to sustained short circuit and available for a wide power supply range.

RS232 permitting a connection to a single device, RS485 permitting a connection to a network of up to 32 devices.

- 1 x RS232 connection
- 1 x RS485 connection
- Cost effective solution
- Small footprint
- LED's for power, Bus activity, Health and Comms
- DIN rail mounting solution



SIPslice LoRa

The Synapsys SIPslice LoRa has been developed to provide a simple and efficient way of interfacing third party LoRaWAN devices, such as Heat, Gas, Water, Electricity meters, Sensors or Pulse counters for integration to third party systems, including BMS/IoT/SCADA via the SIP+ product range.

Designed for receiving data from LoRaWAN devices utilising the LoRaWAN network.

Installed with a SIP+ via the DIN Rail connector, which provides power and communications between the SIP+ and the installed SIPslice LoRa device. The SIP+ requires the LoRa driver, which includes decoders to read a predetermined list of available devices, with the functionality to add more LoRaWAN compatible devices as required. This is done by selecting a suitable licence for your application when ordering.

The SIPslice LoRa is not compatible with third party gateway products or application servers, and does not support an independent Power supply. Maximum of one SIPslice LoRa device per SIP+.



Commissioning and support

As with all Synapsys products and software solutions, SIP hardware devices have been designed to be simple to deploy and use.

Our Commissioning engineers, Software and Technical support teams are available to support installation and set-up, right through to handover to the end user.

We also provide customers with access to our SIP Integrator support website, which contains all of our technical data sheets and information about our latest technical updates.

Through our SIP Integrator support website we also give customers access to our catalogue of free SIPeasy files which simplify the commissioning and configuration of our products, saving you time and money.

SIPeasy pre-characterised files are available for a wide range of third party network devices, which are easily searched and downloaded for free from the site.



For more information about Synapsys and our product range please visit www.synapsys-solutions.com.

Alternatively to speak with one of our team in more detail or to arrange a demonstration of our products and solutions, please contact us on 01444 246 128 and we will be happy to discuss your requirements.