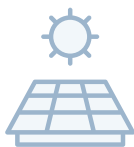
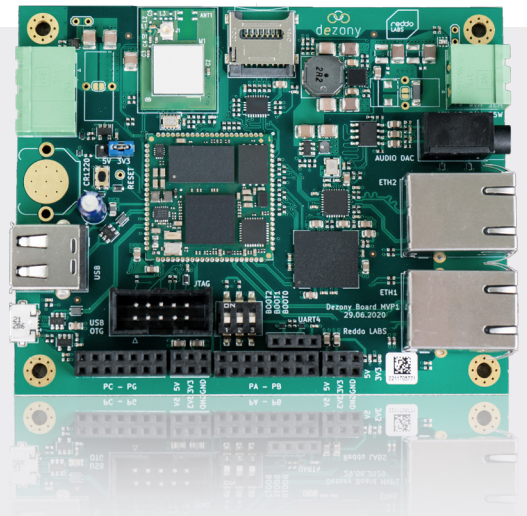




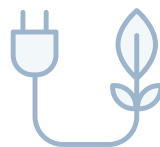
# SMART CHARGING OF ELECTRIC VEHICLES

dezony IQ Charging Station - More than just a Wall Box

The dezony IQ charging station offers electric vehicle owners the possibility to charge with the surplus power from their own rooftop. The focus is a charging solution as a sound investment for single-family and two-family homes. Other available solutions are based on closed systems whereas an open solution approach is paramount for dezony. With the help of Kontron's system-on-module (SoM) Linux support, the startup dezony is able to connect directly to power inverters to access the relevant data. Information is retrieved and processed quickly, securely and in real time.



SUSTAINABILITY



ENVIRONMENTALLY  
FRIENDLY



INCENTIVE PROGRAM  
ELIGIBILITY



**dezony GmbH**

Gunzenhausen, Germany

**Projekt:**

dezony IQ Charging Station

**Kontron Plattform:**

Customized system-on-module (SoM)

SL STM32 MP157

dezony GmbH is an up-and-coming startup from Middle Franconia in Germany that is revolutionizing the market for home charging stations.

As a young, dynamic company, the team lead by the three founders, Davide Di Bella, Marco Schomber and Rüdiger Sonntag, is breaking new ground. dezony is offering the first premium charging station that combines smart functions in one device.

[www.dezony.com](http://www.dezony.com)

**CHARGING ELECTRIC VEHICLES AS NEEDED**

The combination of electromobility and electricity from renewable energy sources helps to reduce the use of fossil fuels and thus CO2 emissions. According to the German Federal Motor Transport Authority (KBA), 1,643,069 new passenger vehicles were registered in Germany from January to August 2022, of which 416,002 were electric vehicles. The availability of charging points is an important prerequisite for switching from the combustion engine to the electric vehicle. The photovoltaic system on your own roof provides ideal conditions for this, it can be used perfectly as an energy supplier - it does not get any more convenient than this.



**GOALS**

- ▶ Charging with power from your own rooftop
- ▶ Manufacturer-independent integration photovoltaic systems
- ▶ Visualization of data via the dezony app
- ▶ Easy company car billing
- ▶ Process optimization and new features



**CHALLENGES**

- ▶ A sound investment for smart charging
- ▶ Software updates over-the-air (OTA)
- ▶ Options for different charging modes
- ▶ Use in private underground garages with functional added value such as: Motion detector, light module and WiFi with a personal internet hotspot



**SOLUTIONS**

- ▶ Hybrid architecture of microcontroller and microprocessor technology allows for the implementation of secure software and intelligent connectivity
- ▶ The powerful system-on-module (SoM) from Kontron makes it possible to have a modular solution can be updated over-the-air
- ▶ A secure separation of product architecture: The controller takes care of the charging and the SoM takes care of the dezony intelligence



### THE JOINT PROJECT

The startup company from Gunzenhausen, Germany relied in particular on synergies from the partnership with Kontron. Kontron is formidable partner with its industrial standards, competence and experience in the development department as well as with its modular development approach. dezony has contributed its expertise for the specific challenges as well as the baseboard as a powerful platform. At the beginning, the requirements for the project, the tasks and the goals were discussed together. In the second step, a clearly structured product development process was defined in order to bring the solution to the market quickly. The focus here was on both the needs and the expectations of smart charging station users. Right from the start of the project, the dezony founders paid particular attention to long-term availability of the components and a supply chain within Europe.

### THE SYSTEM-ON-MODULE AS A HIGH-PERFORMING CORE

Based on the project information, the tasks that the system-on-module (SoM) SL STM32 MP157 should perform within the project were determined. A SoM is a complete computer with a pre-installed embedded Linux operating system and all drivers for communication and LCD/touch interfaces. The fully developed CPU core is already EMC tested, validated and ready to control the hardware. The SoM's compact printed circuit board combines all components, such as the processor and graphics unit, the RAM and program memory, and a variety of communication interfaces.

### THE PROJECT IN DETAIL

The Dual Arm® Cortex® A7 computing core contains the Linux operating system as well as the drivers. It handles the CPU-intensive tasks and internet communications applications. Its main task is to implement "connectivity". The integrated Arm® Cortex® M4 microcontroller ensures that control and regulation processes, such as the charging electronics, run in a structured manner in real time. The use of the SoM module helps to simplify the dezony-specific complex board architecture. Three processor cores in one chip offer a big advantage; they reduce the number of components and thus save space within dezony's overall system.



*„The fact that an established company like Kontron went ahead and provided us with unconventional and quick support in software development was valuable, constructive and a decisive advantage to help bring the solution to the market quickly.“*

Davide Di Bella, Managing Director of dezony GmbH

## ADVANTAGES FOR CUSTOMERS:

- ▶ The IQ charging station offers a simple and convenient charging solution with a focus on one- and two-family homes
- ▶ Various charging modes available:
  - Charge 100% with surplus photovoltaic power
  - Photovoltaic power mix – surplus charging with grid power
  - Charging with a fixed charging rate
  - Charging block
- ▶ The charging station is constantly optimized and enhanced with new features
- ▶ Visualization of the charging statistics, the energy flows of the photovoltaic system and the home battery storage via the dezony app
- ▶ The connection of various backend systems for company car billing or electricity billing in homeowners' associations
- ▶ Use in private underground garages, thanks to secure authentication and dezony charging station via an access point as an internet hotspot
- ▶ A 230 V socket in the charging station allows for the charging of e-bikes



// dezony IQ charging station



## STAY ON TOP OF THINGS

Whether charging power, costs or time, the dezony app visualizes the wall box data and creates transparency.



## About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: [www.kontron.com](http://www.kontron.com)

## About Kontron Electronics

Kontron Electronics is a full-service provider in the fields of electronics, development and manufacturing services. The portfolio includes proprietary and customized products, development and design services for complex electronic components, modules and systems, and production and assembly services for complete assemblies. Kontron Electronics is a leading global service provider for electronics with 350 employees at our German locations in Frickenhausen near Nürtingen, Halle (Saale) and Schorndorf and in Hungary at the Kontron Electronics Kft. production facilities in Pécs and Tab.

For more information, please visit: [www.kontron-electronics.com](http://www.kontron-electronics.com)



## YOUR CONTACT

### Kontron Electronics GmbH

Max-Planck-Str. 6  
72636 Frickenhausen, Germany  
Tel.: +49 7022 4057-0  
Fax: +49 7022 4057-22  
info@kontron-electronics.de

[www.kontron-electronics.com](http://www.kontron-electronics.com)

## GLOBAL HEADQUARTERS

### Kontron Europe GmbH

Gutenbergstraße 2  
85737 Ismaning, Germany  
Tel.: +49 821 4086-0  
Fax: +49 821 4086-111  
info@kontron.com

[www.kontron.com](http://www.kontron.com)