



jinvent iolinker Press Kit

February 24, 2018

1 Who we are

Founded in 2008 in southern Germany, jinvent has been developing innovative software and hardware solutions for over 8 years. It's experience with integrated industry solutions, connectivity solutions and IoT applications make it a valuable partner in technology development. Automotive as well as aerospace references confirm the advantages of jinvent solutions.

All our projects are committed to efficiency increasal and increasing automation through abstraction. Technology advancements allow our customers to optimize their development processes, waste less time, and help reach our shared goal of speeding up innovation.

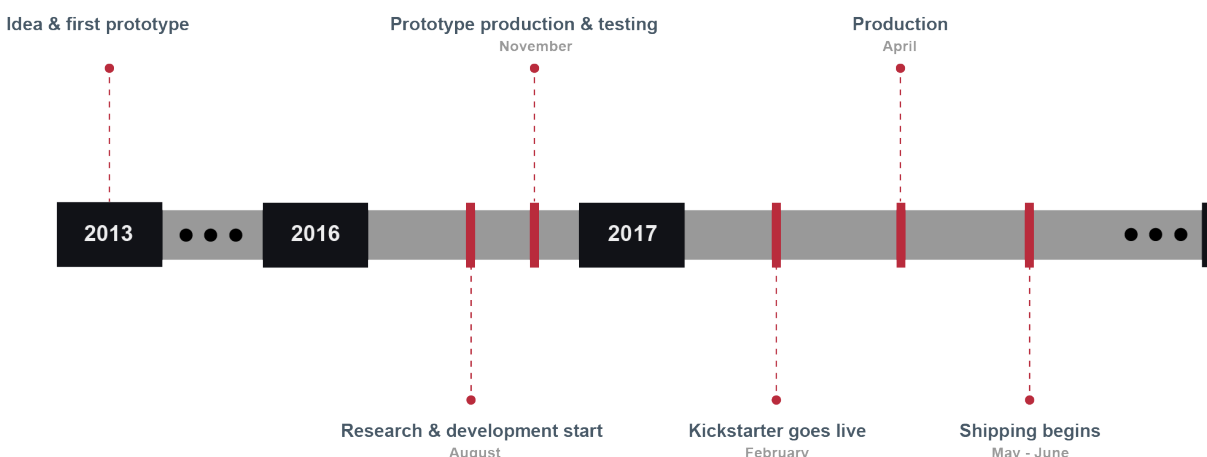
2 The story

Electronics are becoming more and more compact, due to much of its functionality implemented in microprocessors and specialized chips, nowadays. During development, hardware changes are still frequent – for changed microprocessor software often requires changed schematics and wiring in the electronics that surround it, or due to design flaws that were there from the start. Later on, software updates may cause that same issue.

Seeing this happen over and over again for more than 10 years, company founder Julian von Mendel devised a way for reducing that problem. The iolinker chips allow to rewire electronics in real time. Instead of wiring hardware components up to each other and producing expensive electronics with no room for changes, designers can wire up all components to the iolinker chip. The schematic can then be loaded into the chip and take effect right away – thereby reducing many hardware changes to a mere software update.

Many years were spent revising and improving the concept, market research done, and a team of engineers put together to make the product become reality. The aim is to make this feature available for low cost, to as many hardware developers as possible, and very simple to integrate.

As designs become more flexible, all of us will profit. Our belief is that iolinker can greatly reduce costs, add sustainability and flexibility and improve self-testing, as well as make many designs more efficient.



3 Funding

Development and prototype production were an expensive undertaking. To start out with the production of the iolinker chips and boards and be able to finance the continuation of this project, we presented this project to the Kickstarter crowdfunding community early 2017 and succeeded with an initial proof of concept.

A follow up product for the industry and aerospace market has been created since.

As of early 2018, jinvent is seeking Venture Capital investors to help promote the continuation of sustainable and superior electronic concepts.

4 Advantages

- Improved development speed for prototyping and designing electronics and embedded software
- **Increased flexibility and sustainability**
- Fewer hardware changes, **saving up huge costs** for companies
- **Many hardware changes become a mere software update**

5 Target markets

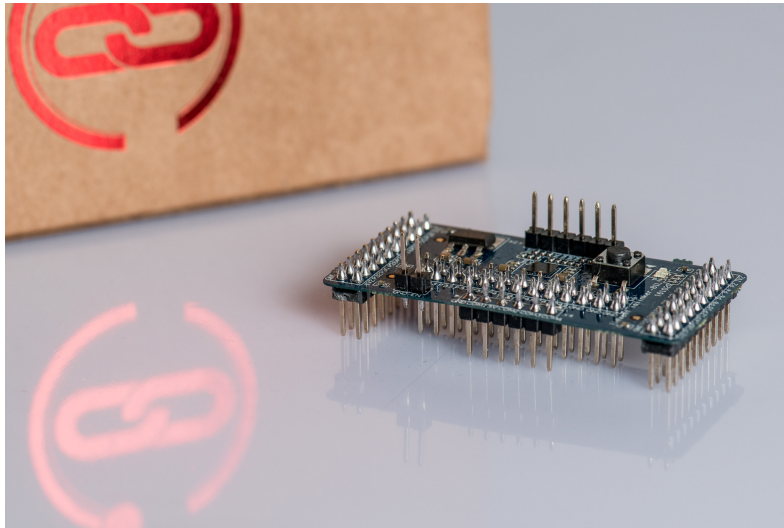
- Automotive and aerospace sectors
- Industry high-tech companies
- Electronics maker scene
- Arduino, Raspberry, microcontroller developers in general

6 iolinker Board Abstract

To give developers fast and easy access to that new technology, the iolinker board is a simple to stick on piece of electronics, that adds total circuit flexibility to electronics connected to it.

7 iolinker Chip Abstract

Every iolinker chip functions as a dynamically configurable IO matrix. Its main functionality, besides IO extension, is to dynamically set up a matrix of GPIO connections, that allow direct pass-through of high-frequency signals. Circuits can thereby be configured and programmed on the fly. There are UART / SPI / I2C versions that allow for easy integration of up to 127 chips connected in parallel. Some versions also allow for PWM signal output.



8 Chip Features

- IO extension with synchronized pin updates
- Dynamic IO matrix connections
- PWM generation
- Frequency output
- UART / SPI / I2C interface, depending on chip version
- 7 hardware address pins that allow parallel connection of up to 127 uniquely addressable slaves
- Very few external components required, internal oscillator and PLL
- Instant on – powers up in microseconds
- Software reset and chip enable allow for quick and flexible set-ups, including multiplexing applications
- Device operates with 1.2V or 1.8V / 2.5V / 3.3V

9 Chip Applications

- I/O Port extender
- Large keypads
- Cable and wire control, short-circuit detection

- Software-based circuit configuration
- Self-testing industry applications
- Simplified prototype boards, e.g. to wire up microcontrollers and periphery electronics on the fly
- User-configurable IO periphery interfaces
- Bus controller
- PWM controller, e.g. for huge LED panels
- Frequency generation