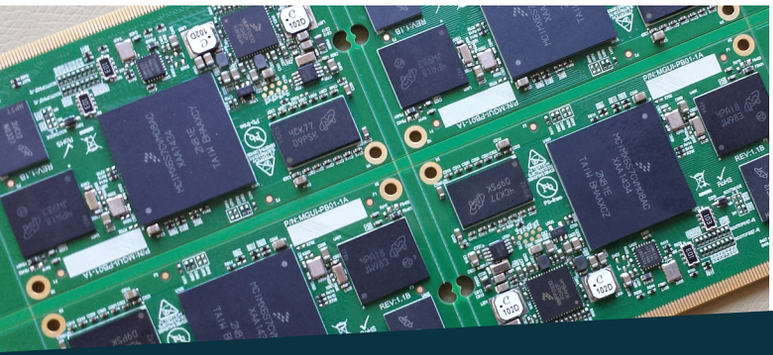
CIN-ergy



About us

World leader in electro-optical Near To Eye (NTE) products

The ever increasing demand for advanced OEM solutions in the Near To Eye (NTE) virtual and augmented reality market requires expertise and adaptability. CIN-ergy is focused on supplying the complete package of electronic and optical components for your unique NTE applications.

As the reseach and development department of Cinoptics, a leading manufacturer of NTE solutions, CIN-ergy has over a decade of experience in the most demanding applications with a growing presence in operational solutions.

CIN-ergy is constantly working on the forefront of technology utilizing new technologies. All OEM systems we offer are highly flexible, reducing risk and accelerating time to market. This is possible as all electronics are designed and produced in-house. Our engineers have the required expertise, tools and equipment at their disposal to support integration and installation in any system.

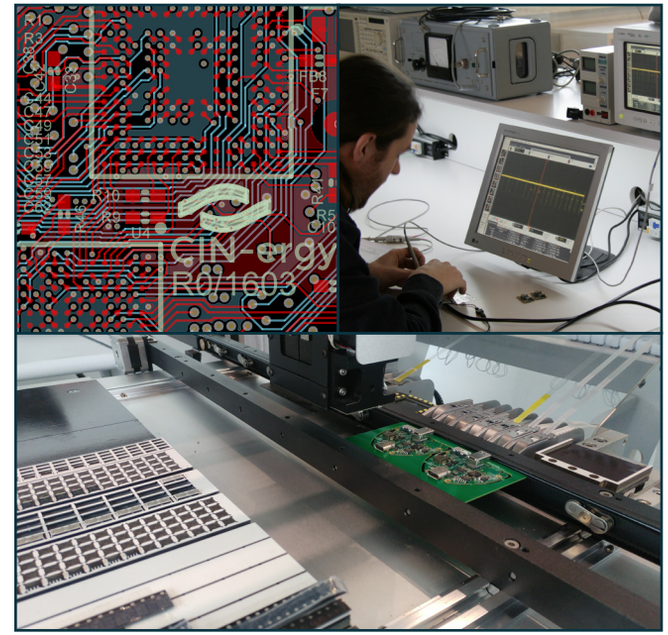
CIN-ergy offers a complete development cycle support including electronics production. From idea to concept to prototype, 4-8 times faster than other OEM competitors. We can assist you to find the optimal solution for your requirements. Try us!

Vincent Graham
Founder CIN-ergy

Capabilities

The full package with regards to electronic and optical components.

- Your partner for **customized** optical and electronic solutions
- Over **10 years** of research and development experience in AR and VR Technology.
- Complete in-house **design and production** of HMD's and electronics. Ensuring the design will meet the latest technology, highest quality and shortest time to market.
- Always on the forefront of technology, with an **expertise** in high-speed interfaces such as USB3.1 type-C and Displayport.
- Integration of specific (third party) sensors, systems and cameras in Head Mounted or Handheld display systems.
- In-house state of the art **assembly** line for fine pitch component such as 0.4mm BGA and 0201 components. This guarantees smallest possible form factor populated PCBs.
- All products comply to CE and UL specifications and to all requirements with regards to Waste of Electrical and Electronic Equipment (WEE) and the RoHS Directive.
- Production processes **compliant** with standards such as ISO9001 for quality control.



OEM solutions

Near to eye systems

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System integration

Integration into any systems, including additional sensor integration.

- CIN-ergy's qualified engineers can provide on-site installation and integration of systems as well as training and support.
- Custom electronic and mechanical design for integration of components in custom enclosures and specific mounts.
- Highly experienced with integration and calibration of various orientation Inertial Measurement Units (IMU) and positional tracking solutions.
- Complete control of all hardware systems through comprehensive software APIs.

Optics

Custom optics development and integration.

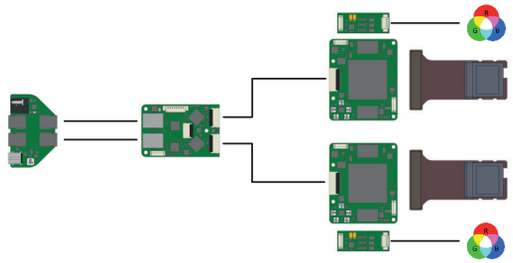
- CIN-ergy has developed an expertise in replicating operational devices used for simulation and training.
- Experienced with advanced optic design both in Augmented Reality (AR) and Virtual Reality (VR).
- Custom design and COTS components for a wide selection of (micro) displays incl. Kopin, 4DD, Sony, eMagin etc.

FLCoS NTE kit

Complete modular FLCoS micro display solution for monocular, biocular and binocular imaging applications.

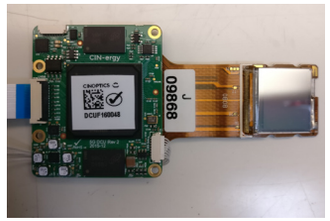
CIN-ergy offers a complete kit for single or dual microdisplay setups based on the Time-Domain-Imaging (TDI) technology of FLCoS display technology.

Block Diagram



Key advantages:

- Highest image quality with use of the reflective FLCoS (Ferroelectric Liquid Crystal on Silicon) microdisplay technology.
- Modular system that can be configure for single and dual display systems with individual control.
- Connects to any computer, regardless of used OS, like a displayport monitor. No additional hardware and/or software is required for system operation. No lens distortion correction software is required.
- Compact size electronic modules with flexible interconnects for easy integration in space critical applications.
- External sensor interfaces available. Additional Plug and play external USB port supported on board.



Applications

- Monocular viewer
- Biocular & Binocular viewer
- Augmented reality viewer
- Helmet mounted sight and display (HMSDs)
- Heads-up displays (HUDs)
- Electronic Viewfinders

Features

Modular System
- Stereo / Mono system
- Displayport video interface

External USB
- Built in USB-HUB
- USB 2.0
- USB HID control

Audio
- USB Digital audio
- Analog Microphone
- Headphone out

SXGA Microdisplay
- 1280 x 1024 RGB
- 85Hz Refresh rate
- <6ms latency
- Contrast 1:300
- Fill factor > 96%

Power
- Typical 7.5W
- 12V Powered
- Optimized power in suspend mode

Other Interfaces
- I2C, SPI, PWM, UART

Software
- Control interface suite
- API available

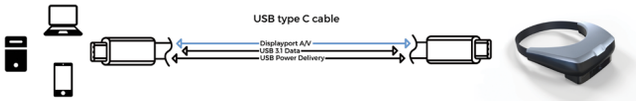
Full-HD NTE kit

Compact single board Full-HD micro display solution with external sensor support and audio.

CIN-ergy offers the Full-HD Near-To-Eye (NTE) kit as a single board system aimed for unique NTE solutions with support for added sensors for environmental awareness, mapping and communication.

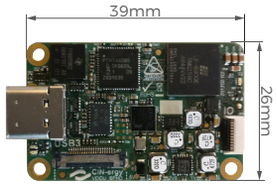
Key advantages:

- The latest in (AM)OLED micro display technology using Full-HD resolution and extreme high contrast.
- The complete compact system can be powered and controlled using a single small USB Type-C cable using the latest USB3.1 technology.
- Connects to any computer, regardless of used OS, like a Displayport monitor. No additional hardware and/or software is required for system operation.
- External sensor interfaces available. Plug and play (camera) sensor support for USB devices.
- USB Audio incl. Stereo microphone support for headset capability



CIN-ergy offers a separate adapter that offers USB3.1 capability for non USB3.1 compatible systems.

Dimensions



Applications

- Monocular viewer
- Augmented reality viewer
- Smart glasses
- Rifle scope simulator
- Very small monitors
- Viewfinder

Features

USB3.1 Type-C
- Single Cable system
- USB3.1 Alternate mode displayport

External USB
- Built in USB-HUB
- USB 2.0
- USB 3.0 SS

Audio
- USB Digital audio
- Analog Microphone
- Headphone out

FHD Microdisplay Driver
- 1920 x 1080 RGB
- 60Hz Refresh rate
- Negligible latency
- Contrast > 1:10.000

Power
- Typical 2.5W
- USB Powered
- Optimized power in suspend mode

Other Interfaces
- I2C, SPI, PWM, UART

Software
- Control interface suite
- API available