INDUSTRIAL DESIGN FOR ELECTRONICS

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PROMWAD, electronics design house

We will help you create your product – from product concept to batch production.

**Industrial design with Promwad** is not just enclosure design for electronics, but also construction development and technical documentation for mass production.

Our designers work closely with engineers and manufacturing specialists. We think through the style and ergonomics of a device, and take into account the engineering limitations of the manufacturing process, agreed deadlines and a project budget.
INDUSTRIAL DESIGN

— Idea and device concept generation: in-depth study of the theme and creation of drafts
— Design and enclosure development, enclosure adaptation for PCB size
— Production of enclosure prototypes by milling and 3D printing
— Production of molds for batch production
— Mass production of enclosures in:
  + Russia
  + The Baltics
  + China
  + Southeast Asia
SELECTION OF MATERIALS FOR ENCLOSURES

We will help you choose optimum materials, taking into account the electronics enclosure design needs, your preferences, and the project budget.

— **Plastics**: ABS, ABS+PC, EK, PC, PE, PVC, PMMA, polyamide plastics, etc.

— **Timber**: various wood species, including composite combinations with plastic

— **Metals and alloys**: manufacturing enclosure parts from stainless steel, aluminum, aluminum-magnesium alloys, using stamping, molding, milling, extrusion molding

We use any material suitable for industrial processing, including rubber, ceramics, and glass.
We provide a guaranteed manufacturing result through:

— Thermal simulation of a device
— Molding simulation and stress simulation of the innerparts of the enclosure
— Analysis of deformation of the enclosure parts in extreme temperatures
— Explosion and shock simulation in three dimensions

**Result:** no molding defects and a high durability of the enclosure.
Implemented projects
CONSUMER ELECTRONICS
GSM adapter for two SIM cards in iPhone

A gadget for simultaneous operation of two SIM cards in Apple smartphones. It is 6 cm in diameter and has soft touch coating.

The internal compartments are opened by turning the rim of the “puck”: they include a micro USB connector for charging the battery, a power button, a SIM card holder and a SIM tray pin in iPhone.
Portable fish finder

Upon the order by a company from Russia, we designed a portable echo locator paired with a smartphone.

It identifies fish presence in a chosen area of the water body, creates a fishery map, and detects popular places for fishing.
Network device for connecting Bluetooth sensors

This device is paired with Flower Power mobile gadgets and helps take care of plants. The customer is Parrot based in France.

A shockproof enclosure withstands a drop onto concrete from a height of 1 m.
Lapka, a set of sensors for iPhone

A radiometer, thermometer, nitrate meter, electromagnetic field and humidity gauges. They are connected to an iPhone and an iPad via the audio jack.

We have developed an enclosure design, chosen the materials and prepared the set for batch production.
Lapka breathalyzer

A premium-class accessory for Apple mobile devices, which measures alcohol concentration in the blood through breathing. The user’s hand functions as a mouthpiece.

The enclosure is made of ceramic. It has proved to be a unique and durable device, which is also pleasant to the touch. The inner enclosure of the breathalyzer is made of polypropylene.
We have developed and launched into production a device for measuring glucose concentration in human capillary blood.
**Portable glucometer for iOS and Android smartphones**

A device for measuring glucose concentration in the blood, connects via an audio connector. The test results are displayed in a mobile application.
DO-RA mobile dosimeter

It was developed for Eurasia Intersoft.

An application was sent to the Guinness World Records book to recognize the DO-RA dosimeter as the smallest one in the world.

— It is paired with an iPhone
— Measurements are displayed in an iOS app
DO-RA.Chups, a dosimeter-radiometer

An apple and a popular candy were used as the prototypes for this enclosure design.

The one-piece enclosure has no battery. Inside the device, there is SBM-21, a miniature Geiger-Muller radiation counter made in Russia.
DO-RA.uni, a multi-purpose cross-platform device

A miniature device for measuring radiation. It is connected to any mobile phone, tablet or laptop with a standard audio jack.
Polimaster electronic dosimeter

A professional dosimeter with a Geiger-Muller radiation counter. It works without battery replacement for up to two years.

The device comes in various enclosure colors for a variety of users: amateurs, law enforcement agencies and emergency services.
Personal GPS navigator with an electronic compass

A device for tourists, mushroom pickers, and retired people. It brings the user back to the starting point or to a specified point in a coordinate system.
Implemented projects

MEDIA AND ENTERTAINMENT
Full HD transmitter for a studio

A device for reporters: it sends reports to studios from any point in the world. We created a metal enclosure with a mount for a battery pack.
IPTV digital set-top box

A set-top box with OTT and PVR (3D\HD video).

Russia’s largest communications operator Rostelecom and the MTS mobile operator use this device to provide IPTV services all over the country.

The project was commissioned by SmartLabs.

— Cooling without enclosure perforation
— HDD replacement without disassembling the device
— An output of over a million STBs
Binoculars with a discrete magnification power of 2.5:5 to watch sporting events during the day and at dusk.

- Protection against splashes
- Assembling without screws
- Compact enclosure
- Variable multiplicity of switching
Implemented projects

AUTOMOTIVE ELECTRONICS
Automotive GPS/GLONASS device for communication and navigation

A dual-system navigator with mobile support and 3G. Control: 5-inch touch screen and Android OS.

- Slim size: 16 mm thick
- Convenience: buttons with spring elements
- Durability: aluminum chassis inside the enclosure, protective glass on the screen
Onboard automobile data logger

A portable scanner to control the vehicle condition. It is installed into the OBD-II connector, resistant to shock, vibration and temperature extremes.

The project was commissioned by an American customer.
Key chain for car alarms

The project was commissioned by a Russian electronics manufacturer.

We focused on the dimensions of the finished PCB.

At the stage of preliminary research, we created 8 3D enclosure versions.
Implemented projects
AUTOMATION AND SECURITY
Access control reader

The device controls entrance into the building of the State Oil Fund of the Republic of Azerbaijan (SOFAZ).
Contactless access card reader
A device that controls entrance into offices.
Implemented projects

TELECOMMUNICATIONS
A shockproof enclosure with water and dust protection.

Low production costs through optimizing the bill of materials and choosing standard manufacturing technologies.
Smart Station

All-in-one solution: internet + telephony. Commissioned by Emzior.

— Low production cost was ensured
— IMB (in-mold decoration) was used
VoIP + WLAN network router

A modern car served as a prototype for this design.

- Optimum cost in batch production
- Easy to assemble

A multi-purpose LAN/WAN/Wi-Fi router.

The enclosure design was developed based on temperature testing.
Digital TV set-top box

- A simple and compact enclosure at low cost
- The device features the customer’s corporate colors
- A slot for a smart card
**Intel Atom-based thin client**

A device for use in networks with a client-server architecture or terminal. Designed to replace expensive personal PCs in offices, banks and call centers.

“Modest” design for inconspicuous operation in the office.
AK1100 thin client

A device for use in networks with a client-server architecture or terminal. Designed to replace expensive personal PCs in offices, banks and call centers.

Based on the temperature testing, we designed a case with passive cooling of electronic components.

Mounting on the back panel in compliance with VESA
IP-Plug mini server

We developed the first commercial plug computer in Russia. It can be used as a multi-purpose gateway for smart home sensors.
WHY PROMWAD?

**Field supervision:** our designers control the entire process up to the start of production.

**12 years of experience:** we have completed 275+ projects, with over a million batch devices produced.

**Well-coordinated team:** industrial designers, design engineers, and manufacturing engineers work together at all stages of the project.

**Workability:** we do not generate product ideas that cannot be realized; our designers work in new-generation CAD CREO (formerly Pro / Engineer).

**Contract manufacturing:** we choose an optimum production site for manufacturing prototypes and batch production.

We will design, manufacture and deliver your enclosure worldwide, controlling quality, costs and adhering to the agreed deadlines with any batch size.
PROMWAD, innovation company

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