# Welcome to the VIDI X family!

Welcome to the world of incredible learning and entertainment opportunities! You made a wise investment in your school.

VIDI X is a microcomputer developed by the Croatian company VIDI in close cooperation with schools and the academic community, with the particular purpose of teaching STEM skills to elementary, middle, and high school students. University students and other STEM enthusiasts also use VIDI X to develop their STEM projects.
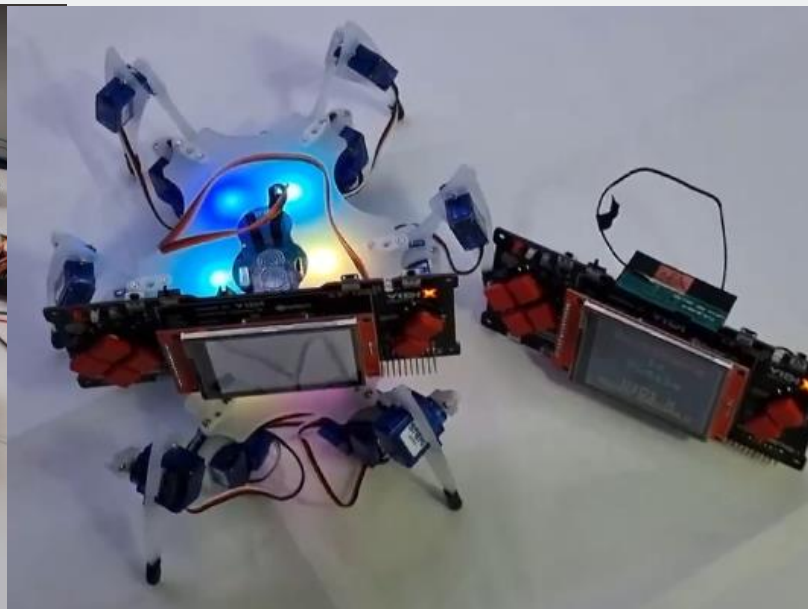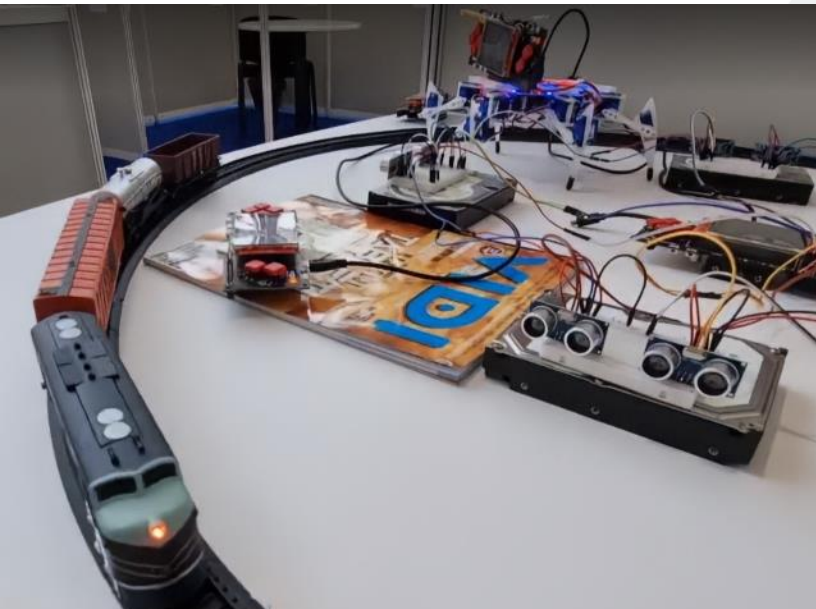
Online Coding and Teacher Support

VIDI X does not require an operating system: you can compile code directly from your browser, on any type of computer.

Go to https://code.vidi-x.org/ (Chrome or Edge browsers are supported), use an USB cable to connect VIDI X to your computer and start coding and compiling!

VIDI X is not just a device: it is a system of **strong teacher training and support**, based around lesson plans that fit your school and your community.

Simple & Powerful

VIDI X is rugged and simple to use. It arrives pre-assembled, and you can immediately use it in class. Although an expansion board and small components may seem fragile, don't worry: your students can handle it without damaging it.

VIDI X is powerful: it is based on a low-power ESP32-Wrover-IB module with a 32-bit dual-core processor clocked at 240 MHz. It is used as a base for projects at various STEM and global robotics competitions.

Lesson Plans

VIDI X lesson plans are designed to fit your computer science requirements and still offer expanded opportunities for advanced schools and students. Our lesson plans currently cater to middle and high school needs but will soon be available for elementary school.

VIDI X industry-focus lesson plans will be available for schools focusing on agriculture, automotive, gaming development, environment engineering, energy, and other specific applications.

Development Microcomputer

VIDI X is a development microcomputer: it already has built-in sensors, but you can add multiple additional sensors, actuators, motors, and LEDs and create your unique project or application. You can use it to develop countless projects, so only the imagination of you and your students can be the limit.

VIDI X provides a lot of pleasure and fun in the learning process, but you can also use it to **create your games** or simply play games like Tic-Tac-Toe or even Doom.
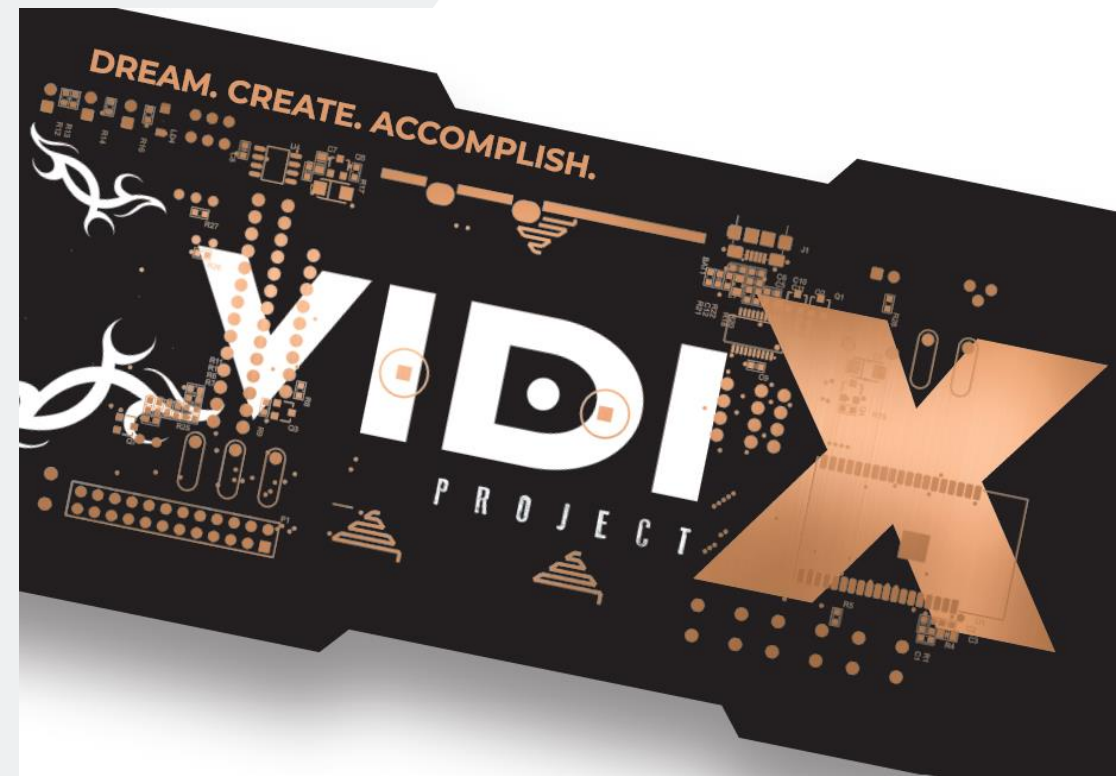
Projects & Lessons

Almost a **hundred projects for VIDI X** were already developed by educators, IT experts, and students. Some of these projects are available within our lesson plans.

Projects range from very simple (turn on an LED) to exciting (play a Tic-Tac-Toe game in pairs) and industry-approved (control a sensor array, drive a robot).

Hardware

We primarily wanted to place enough input/output units on the board so that VIDI X could be used in as many different scenarios as possible.

VIDI X has **8 MB of Flash memory**, of which 4 MB of PSRAM can be directly addressed.

On the VIDI X, we have a **320 x 240 pixels** touchscreen.

The board has a built-in speaker connector.

We have input devices in the form of buttons and light, temperature and microphone sensors, and additional sensors can be connected via an expander slot.
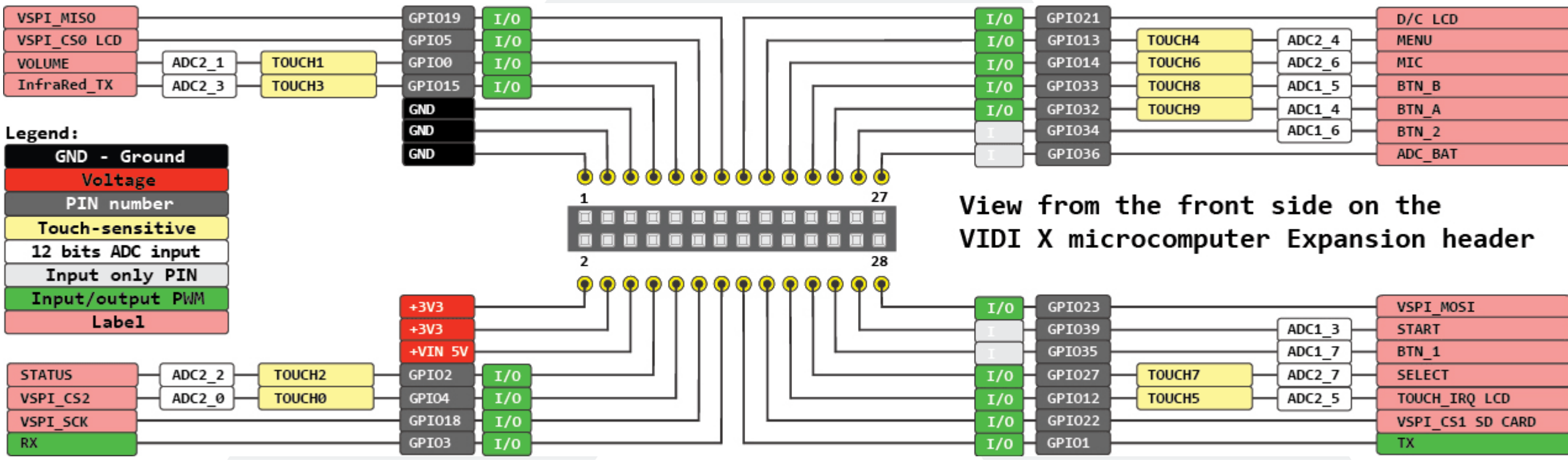
ESP32 dual-core processor

The VIDI X microcomputer is based on a low-power **ESP32-Wrover-IB** module with a 32-bit dual-core processor clocked at 240 MHz. It is used as a base for projects at various STEM and global robotics competitions.

It supports Wi-Fi 802.11b/g/n and LE BT 4.2 wireless communication and can also communicate wirelessly through an infrared receiver and transmitter that can be programmed to replace the remote control for air conditioners, TV, music line and more.

Extension Board

We can connect additional sensors or actuators to these male and female extension pins. Not all built-in sensors and actuators can be used simultaneously with these additional expansion pins, and to decide which pin to use, there are these microswitches with markings to indicate which sensor or which button the microswitch refers to on the board itself.

Legend:
- GND - Ground
- Voltage
- PIN number
- Touch-sensitive
- 12 bits ADC input
- Input only PIN
- Input/output PWM
- Label

View from the front side on the VIDI X microcomputer Expansion header

VIDI X Code Editor

It is easy to start compiling code to VIDI X!

X Open Chrome or Edge browser on your computer, go to the VIDI-X website, click RESOURCES, and select CODE ONLINE.

X You can also just type this URL: https://code.vidi-x.org/

X Press the button „Compile Source Code"

X Now you will see a new button – upload code to VIDI X, so press that as well.

X Connect your VIDI X to your computer using the USB cable provided in the Classroom Pack.

X Click "Compile Code to VIDI X".

X Select the COM PORT that you used to connect your VIDI X.

X Shut down your VIDI X, using the ON-OFF button.

X Press the VOLUME button and turn VIDI X ON.

X Click on the Connect button on the screen.

  X Now, you have started uploading the code to VIDI X. On the screen, you will be able to monitor the progress.

  X You can release the VOLUME button, and track the upload progress – once it reaches 100%, you have successfully uploaded the code to VIDI X.