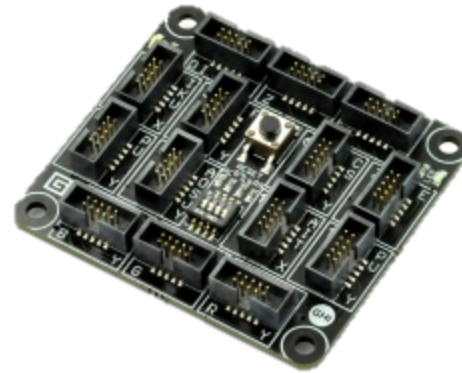


Creating Small Devices with .NET Gadgeteer

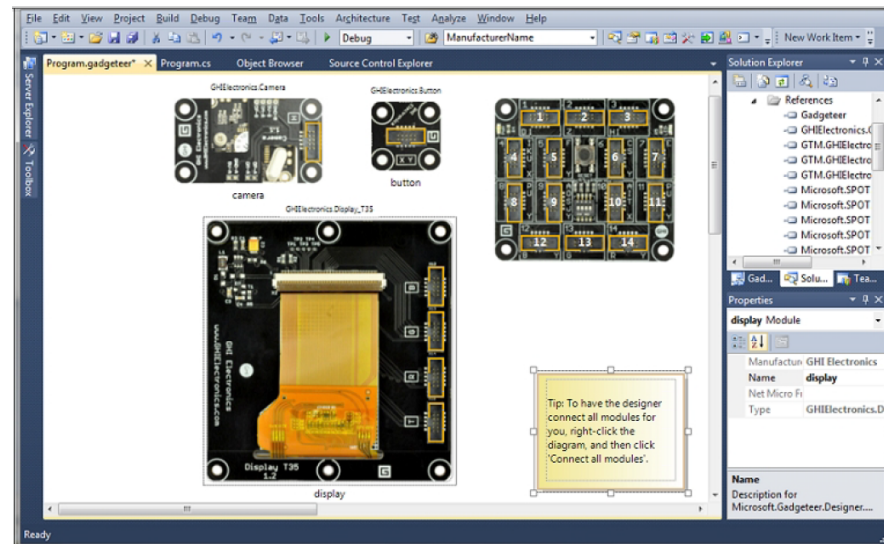
Kerry Hammil, Senior Program Manager
Microsoft Research

Introducing .NET Gadgeteer

- Hardware



- Software



Gadgeteer

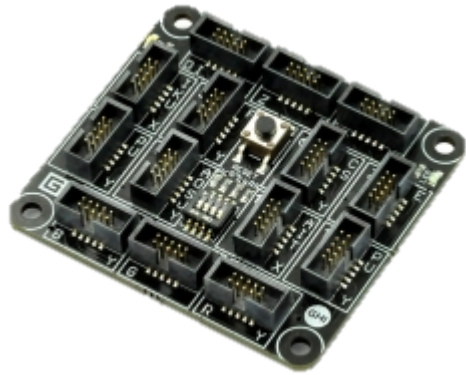
Small Device Platforms

.NET Gadgeteer



- Runs on .NET Micro Framework
- A layer that abstracts the electronics
- Rapid Prototyping, Hobbyists, and Education
- Leverages known hardware
- Standardized extension points for interoperability
- Growing Partner Community (Open Source)
- netmf.com/gadgeteer

FEZ Mainboards



Spider

72MHz. 32-bit ARM7 processor

4.5 MB Flash

16 MB RAM

\$119.95

Hydra

240Mhz ARM9 Processor

4MB FLASH

16MB SDRAM

\$79.95



Location/Movement Sensors



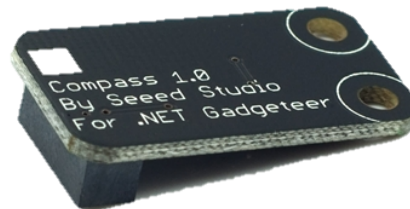
3-Axis Gyro



Accelerometer

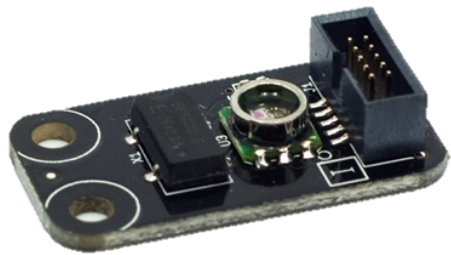


GPS



Compass

Environmental Sensors



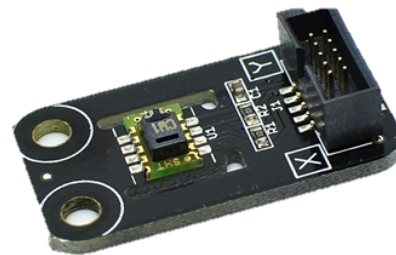
Barometer



Light



Moisture



Temperature
& Humidity

Other Sensors



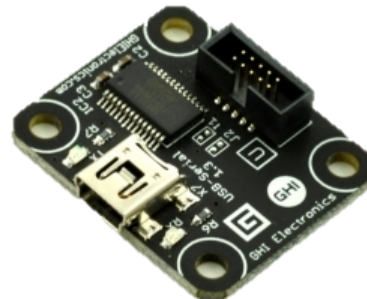
Pulse Oximeter



Electric Current



Camera



USB

Connectivity



Bluetooth



GSM Radio



Ethernet



WiFi



ZigBee Radio

Interactive



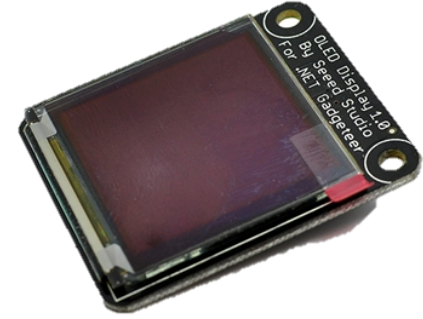
Button



Joystick



Music



OLED Screen



Potentiometer

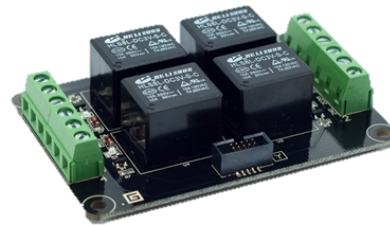


Touch Screen

Controllers



Motor Driver



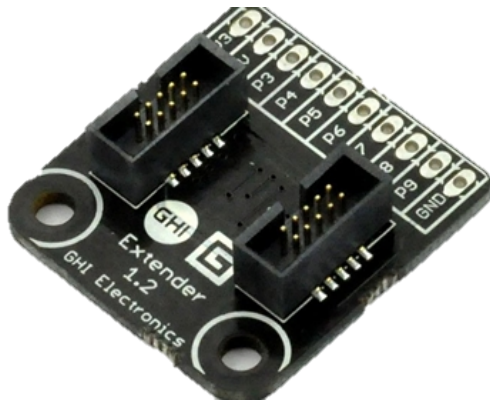
Relays

Storage



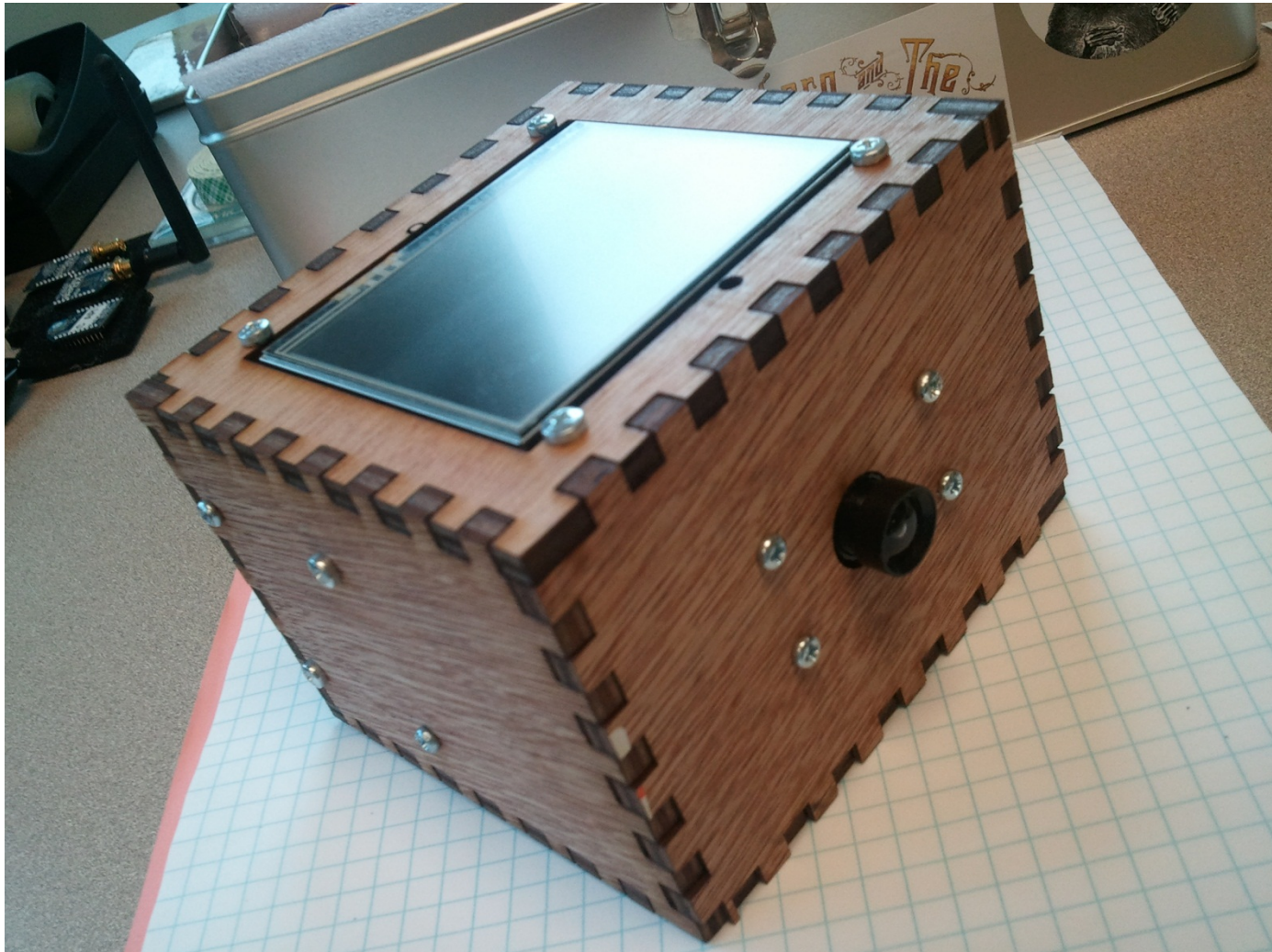
SD Card

Extensibility



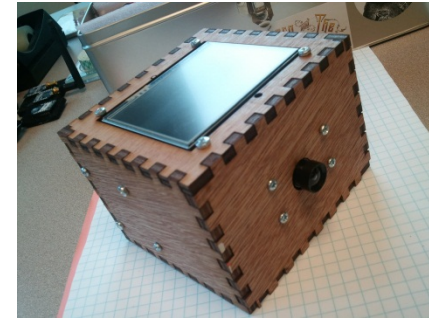
Extension / Debug Module

What You Can Build With Gadgeteer





















Small Device Platforms

More Modules

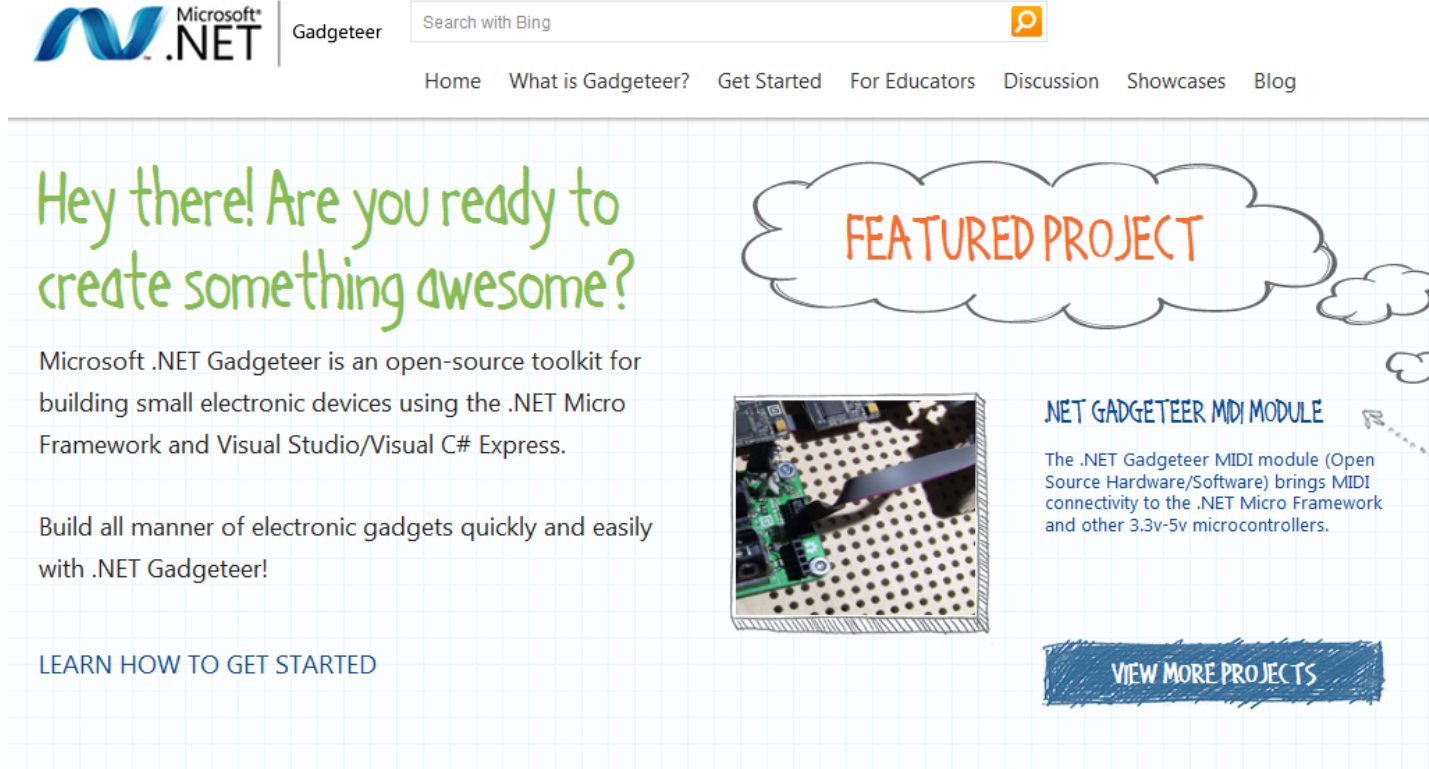


- <http://www.ghielectronics.com/catalog/category/275/>.

 <p>USB Client DP Module USB Client support with advanced power supply.</p> <p>Out of stock We expect more by Mar. 3, 2012</p> <p>retail price \$24.95</p>	 <p>USB Client SP Module USB Client support and provide to the mainboard through USB</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$9.95</p>	 <p>Display T35 Module 320x240 3.5" Color Display Module with a Touch Screen.</p> <p>Out of stock</p> <p>retail price \$99.95</p>	 <p>Joystick Module A hat-type analog joystick with push-button.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$6.95</p>	 <p>Cellular Radio Module Cellular Radio Module</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$69.90</p>	 <p>Motor Driver L298 Module Control speed and direction on 2 motors, up to 40V 3A.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$29.95</p>
 <p>Camera Module Color camera module. The resolution is up to 320x240.</p> <p>Out of stock</p> <p>retail price \$34.95</p>	 <p>Smart Multicolor LED Module (DaisyLink) Smart Multicolor LED Module (DaisyLink) based on a 50MHz ARM Cortex-M0 Processor.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$15.95</p>	 <p>Button Module Button Module for Gadgeteer-compatible devices with on-board LED.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$4.95</p>	 <p>eblock Kit Save more than 50%, for limited time, numerous eblock s to empower any gadgeteer mainboard.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$54.99 sale price \$24.95</p>	 <p>Ethernet ENC28 Module Ethernet Module type ENC28</p> <p>Out of stock We expect more by Feb. 29, 2012</p> <p>retail price \$34.95</p>	 <p>Pulse Oximeter Module Pulse Oximeter Module.</p> <p>Out of stock We expect more by Mar. 3, 2012</p> <p>retail price \$139.00</p>
 <p>Ethernet J11D Module Ethernet Module type J11D</p> <p>retail price \$14.95</p>	 <p>WiFi RS21 Module Easily add WiFi to your FEZ Spider</p> <p>retail price \$99.95</p>	 <p>SD Card Module SD card Module for .NET Gadgeteer socket type F</p> <p>retail price \$6.95</p>	 <p>Barometer Module Barometer Module</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$33.00</p>	 <p>LED7R Module Seven LEDs to inspire the next project.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$6.95</p>	 <p>XBee Adapter Module Adds wireless connectivity, including Zigbee and WiFi.</p> <p>1 <input type="button" value="Add to Cart"/></p> <p>retail price \$14.95</p>

Want to Learn More?

- <http://netmf.com/gadgeteer>



The screenshot shows the Microsoft .NET Gadgeteer website. At the top left is the Microsoft .NET logo. To its right is the word "Gadgeteer" and a search bar with the text "Search with Bing". Further right is a small orange icon. Below the search bar is a navigation menu with links: "Home", "What is Gadgeteer?", "Get Started", "For Educators", "Discussion", "Showcases", and "Blog".

The main content area has a light blue grid background. On the left, there is a green text block that says "Hey there! Are you ready to create something awesome?". Below this is a paragraph: "Microsoft .NET Gadgeteer is an open-source toolkit for building small electronic devices using the .NET Micro Framework and Visual Studio/Visual C# Express." Below that is another paragraph: "Build all manner of electronic gadgets quickly and easily with .NET Gadgeteer!". At the bottom left of this section is a blue link: "LEARN HOW TO GET STARTED".

On the right side, there is a hand-drawn cloud containing the text "FEATURED PROJECT". Below the cloud is a photograph of a green printed circuit board (PCB) with a black ribbon cable connected to it, mounted on a white breadboard. To the right of the photo is the text ".NET GADGETEER MIDI MODULE" in blue, with a dashed arrow pointing to the photo. Below this is a paragraph: "The .NET Gadgeteer MIDI module (Open Source Hardware/Software) brings MIDI connectivity to the .NET Micro Framework and other 3.3v-5v microcontrollers." At the bottom right of this section is a blue button with the text "VIEW MORE PROJECTS".

