

The background of the slide is a dark blue, high-tech image. It features a close-up of a circuit board with intricate gold and silver traces. Overlaid on the right side of the board is a grid of glowing yellow and white binary code (0s and 1s).

# QUADRATIC*x*

## Company Presentation

We transform POSSIBILITIES into REALITIES

23 January 2024



01

Quadraticx

02

Technology Stack

03

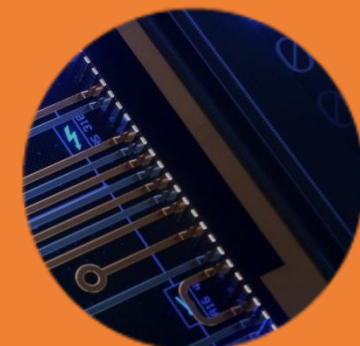
Sample Projects

04

Project

05

Partner Profile





## About Quadraticx

Quadraticx is a reputable fast growing technology service provider with more than 15 years of experience providing cutting edge integrated systems services.

Quadraticx draws on its multidomain, multi-industry expertise to help our customers develop some of the most complex solutions.

Quadraticx prides itself in its top-notch expertise in the entire value chain offering a complete suite of services from product conceptualization and design to market-ready solutions.

Our team consists of world-class experienced system engineers, software developers, mechanical engineers, embedded software engineers, and embedded hardware engineers with cross discipline experience

## Languages



## Databases



## Operating Systems



## Frameworks and Platforms



## Processors



## GIS



## Cloud Services



# Technology Stack

Our proficiency lies in harnessing a diverse and versatile technology stack that empowers us to create innovative solutions across various domains. We utilize an array of programming languages, platforms, and frameworks to address the complex challenges of modern industries.

# Sample Projects

## IoT Module

Multi I/O module equipped with ARM processor for IoT applications



### Key Features

- **ARM Processor:** Equipped with a powerful ARM processor for data processing and application execution.
- **Multi I/O Ports:** Offers a variety of input and output ports, enabling sensor connections, data acquisition, and control of IoT devices.
- **Wireless Connectivity:** Supports a range of wireless protocols such as Wi-Fi, Bluetooth, and LoRa for seamless IoT integration.
- **Low Power Consumption:** Designed for energy efficiency, extending IoT device battery life.

### Applications

- **Smart Home:** Enables IoT control of home automation systems, lighting, and climate control.
- **Industrial IoT:** Suitable for monitoring and controlling industrial equipment, machinery, and sensor networks.
- **Environmental Monitoring:** Collects and transmits data from environmental sensors for analysis and decision-making.
- **Healthcare:** Supports IoT healthcare applications, such as patient monitoring and telemedicine.



# Sample Projects

## FPGA Signal Processing Board

FPGA (Field-Programmable Gate Array) signal processing board designed to handle multiple nanosecond pulses

### Key Features

- **Ultra-Fast Processing:** FPGA enables real-time processing of multiple nanosecond pulses.
- **Low Latency:** Minimizes signal delay to ensure precise pulse handling.
- **Versatility:** Adaptable to a wide range of applications, including radar, medical imaging, and high-frequency communications.
- **High-Performance ADC/DAC:** Integrated Analog-to-Digital and Digital-to-Analog converters for accurate signal conversion.



### Applications

- **Radar Systems:** Ideal for pulse radar systems, enabling rapid signal analysis.
- **Medical Imaging:** Supports high-speed imaging modalities such as ultrasound and computed tomography.
- **Communications:** Essential in high-frequency communication systems for signal processing and modulation.

# Sample Projects

## Link 11 Modem

Multi I/O module equipped with ARM processor for IoT applications



### Key Features

- **ARM Processor:** Equipped with a powerful ARM processor for data processing and application execution.
- **Multi I/O Ports:** Offers a variety of input and output ports, enabling sensor connections, data acquisition, and control of IoT devices.
- **Wireless Connectivity:** Supports a range of wireless protocols such as Wi-Fi, Bluetooth, and LoRa for seamless IoT integration.
- **Low Power Consumption:** Designed for energy efficiency, extending IoT device battery life.

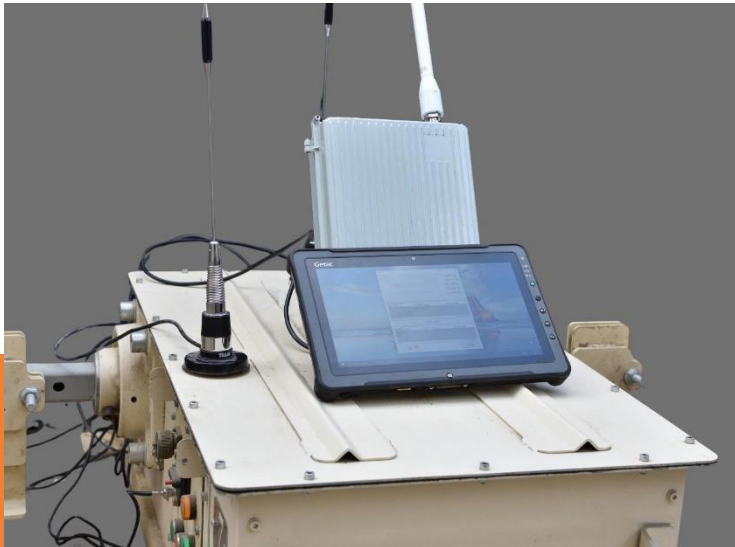
### Applications

- **Smart Home:** Enables IoT control of home automation systems, lighting, and climate control.
- **Industrial IoT:** Suitable for monitoring and controlling industrial equipment, machinery, and sensor networks.
- **Environmental Monitoring:** Collects and transmits data from environmental sensors for analysis and decision-making.
- **Healthcare:** Supports IoT healthcare applications, such as patient monitoring and telemedicine.

# Sample Projects

## Mil- Live Target Training

The target system is designed for both portable and static training applications in harsh environmental conditions. The solution comes with two versions; one for infantry and another for tanks and vehicles.



### Solution Elements:

- Portable Target Units: The units are equipped with
  - Mechanisms for target movement, such as pop-up, swivel, or pivot features.
  - Rotors and electromechanical components which provide fast expose/conceal time along with rapid fire sensing.
- Control Unit:
  - Wireless Communication system
  - Control Software: enables the creation of custom training scenarios and adjusting Sensitivity to accommodate different Ammunition types and calibers.
- Wireless communication system: connects between control unit and target units.



# Project

## Automated Guided Vehicles

### Project Brief

The Automated Guided Vehicles (AGVs) project aims to revolutionize the logistics and manufacturing industries by introducing intelligent and autonomous vehicles for material handling. These AGVs will navigate through industrial spaces without human intervention, using cutting-edge embedded systems and sensor technologies.

### Targeted Market

The primary target market for AGVs includes manufacturing facilities, warehouses, and distribution centers. The technology can be applied across various industries such as automotive, electronics, e-commerce, and more, where efficient material handling is critical.

### Objectives

**Flexibility:** Accommodate to varying customers' needs and requirements

**Safety:** Implement advanced safety features to ensure smooth navigation in dynamic environments, avoiding collisions and obstacles.

**Scalability:** Modular capabilities to accommodate different load capacities and adapt to varying industry requirements.



# Project

## Automated Guided Vehicles

### Technological Areas

**Embedded Systems:** Develop robust embedded systems for real-time control and decision-making.

**Sensors and Perception:** Implement advanced sensor technologies like LiDAR, cameras, and ultrasonic sensors for accurate navigation.

**Communication Systems:** Enable seamless communication between AGVs, control systems, and other equipment within the facility.

**Machine Learning Algorithms:** Integrate machine learning algorithms for adaptive navigation and route optimization.

### Status

Quadraticx team has previous experience with simpler forms of the solution. Within the capacity of Quadraticx and based on previous projects, our team is able to develop electromechanical solutions. To develop state-of-the-art AGV, extensive efforts into the solution R&D, design, and development needs to be extended.

Quadraticx seeks a partner who can complement its capabilities into developing a world-class solution.



The ideal partner whom Quadraticx seeks, has the following capabilities:

**Machine Learning and AI Development:**

Proven experience in developing and implementing ML and AI algorithms for complex systems.

**Software Development:**

Proficiency in software development, especially for embedded systems and real-time processing.

**Domain-Specific Knowledge:**

Industry-specific expertise in logistics and agriculture to understand the nuances of AGVs and hydroponic systems.

**Safety Standards:**

Familiarity with safety standards and compliance in industrial settings, particularly for autonomous vehicles.

**Data Analytics:**

Capability in data analytics and developing decision support systems to optimize operations.

## Partner Profile

The partner will be mainly responsible for developing the SW of the solution while Quadraticx will take charge of developing the embedded HW, embedded SW, and integration with the partner's SW.





**Thank You**

**Email**

info@Quadraticx.com

**website**

www.Quadraticx.com

**Tel**

+201273524411

