

Seeed Studio * Raspberry Pi Success Cases

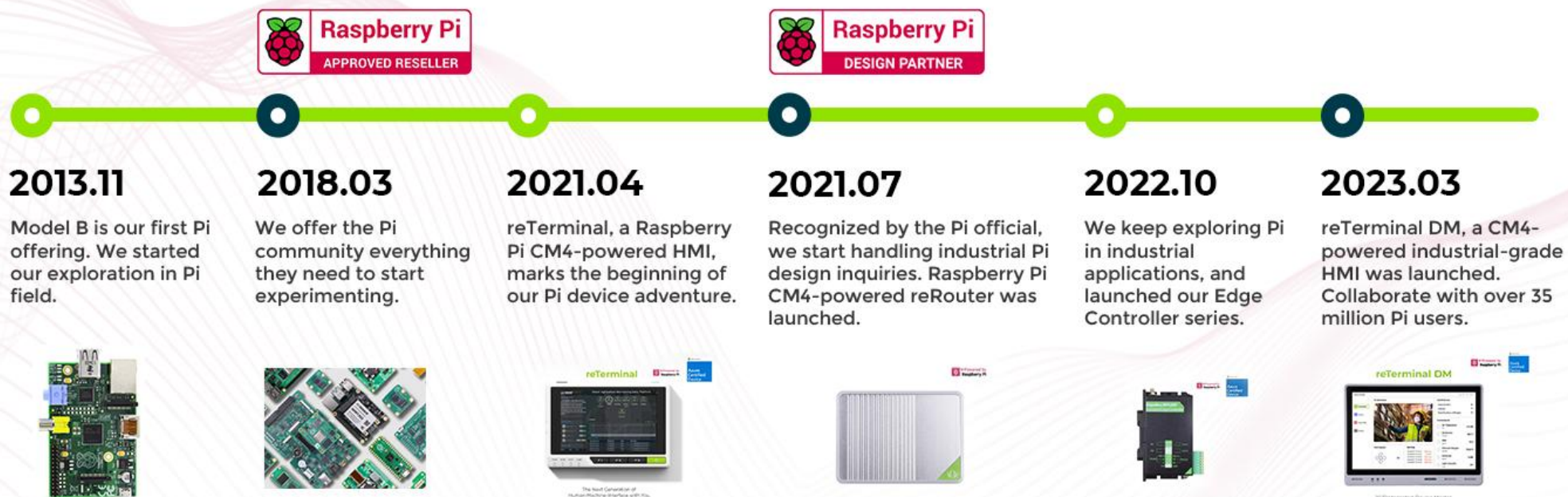
Nov 2023



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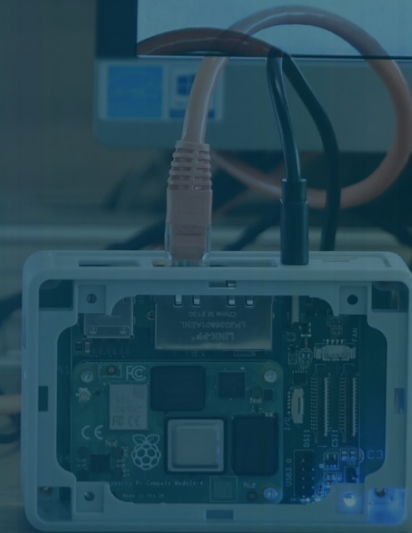
- Seed's Story with Raspberry Pi
- Standard Devices and Success Cases
- ODM Service and Success Cases
- More Explorations and Innovations

Seed Studio has been serving the Pi user community since 2013 and took the lead to join the approved reseller and design partner



View More: <https://www.seeedstudio.com/raspberrypi.html>

Seeed's Pi-powered Standard Devices



Seeed's Raspberry Pi-powered Edge Devices

Assist the Most Prosperous and the Largest Edge Maker Community to Serve Diverse IIoT/AIoT Needs



Success Cases

reTerminal DM in Smart Building/Energy Management

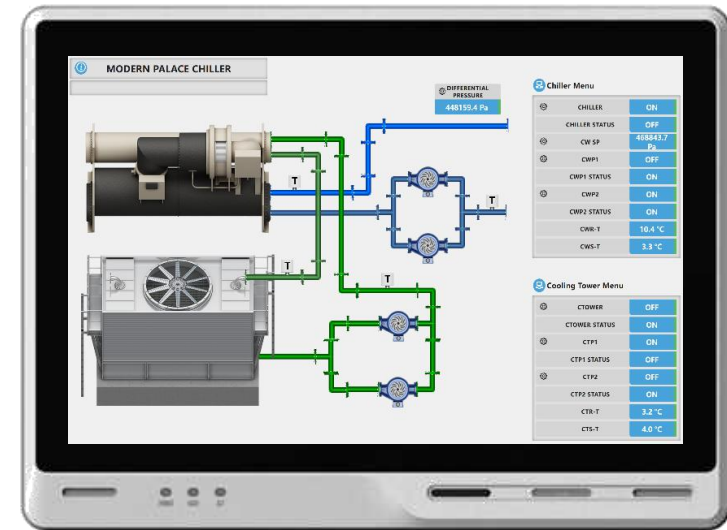
Industry: Smart Building

Product: reTerminal DM

Solution Introduction:

A system integrator specializing in smart buildings energy solutions over 15 years is deploying reTerminal DMs with their vertical software system in control room consoles for operator control, connect with external large-screen display.

Location: China



HMI

Learn More: <https://www.seeedstudio.com/blog/2023/06/30/revolutionizing-smart-buildings-with-raspberry-pi-powered-intelligent-control-systems/>

Success Cases

reTerminal and reTerminal DM in Energy Management

Industry: Energy Management

Product: reTerminal, reTerminal DM

Solution Introduction:

An innovation solution provider specialized in energy management used reTerminal and reTerminal DM as additional safety controllers. They work as an additional redundant system to ensure the company's product is meeting safety and regulatory requirements. In these systems, reTerminals are also in charge of reporting relevant information to the cloud and using the LTE capabilities to report in events of power outages.

Location: Germany



Safety Controller, HMI

Success Cases

reTerminal DM in Manufacturing/AI Detection

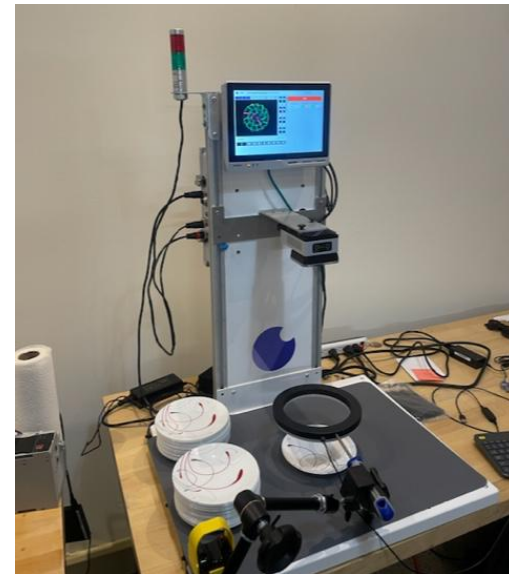
Industry: Manufacturing/AI Detection

Product: reTerminal DM

Solution Introduction:

A solution provider designing and developing deep learning technologies-based inspection systems for manufacturers deploys reTerminal DM as the HMI for their AI vision system. The system is utilized for pattern manufacturing and inspection during the mass production process, with a particular focus on improving the efficiency of defect detection and assembly verification.

Location: Canada



HMI

Success Cases

reTerminal DM in Manufacturing

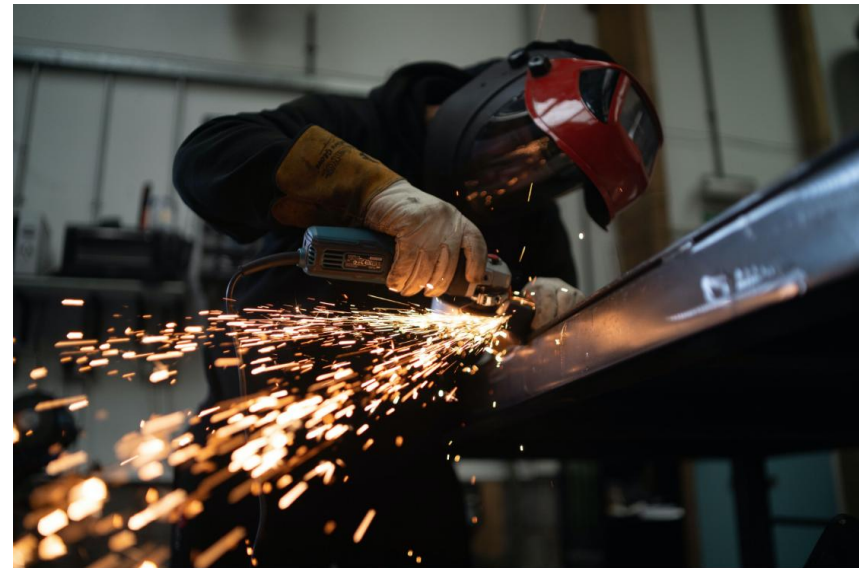
Industry: Manufacturing

Product: reTerminal DM

Solution Introduction:

A Canadian company specialized in manufacturing has deployed reTerminal DM in their telemetry system to assist the customers . In this system, reTerminal aggregates various sensor readings over BLE and works as an HMI. It records the sensor data and subsequently transmits the recorded data to the cloud through a cellular connection.

Location: Canada



HMI

Success Cases

reTerminal DM in Crane Production Industry

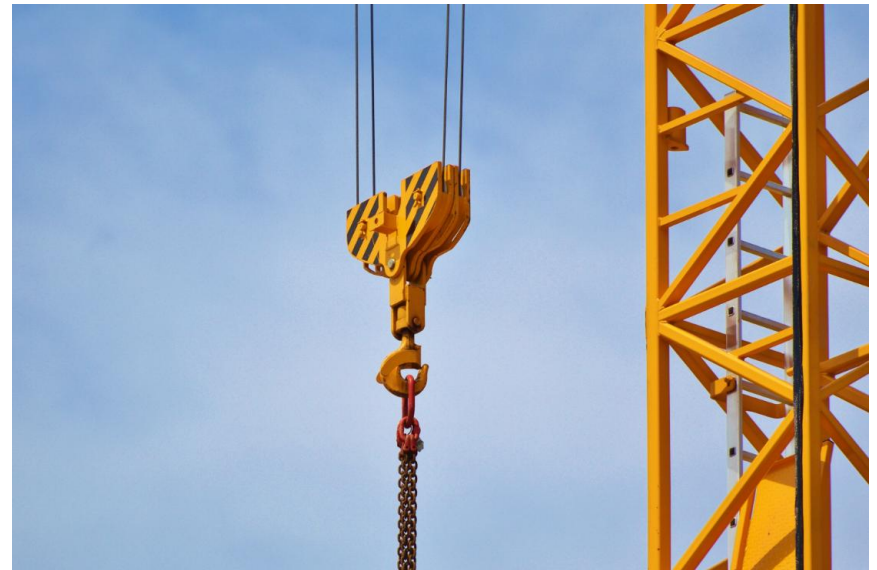
Industry: Crane Production Industry

Product: reTerminal DM

Solution Introduction:

A German company in crane production industry deployed reTerminal DM to update work stations in their plant. The reTerminal DM runs a Python application that connects to an MSSQL database and displays production information, even in industrial harsh conditions.

Location: Germany



HMI, Panel PC

Success Cases

reTerminal DM in Mining Industry

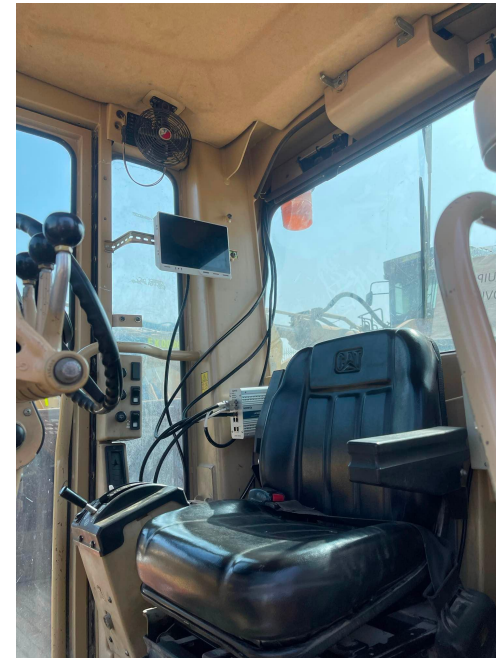
Industry: Mining Industry

Product: reTerminal DM

Solution Introduction:

A mining company is using reTerminal DM for safety distance detection and warning for mining trucks. When people or vehicles approach the mining trucks, the system alerts the drivers. The reTerminal DM serves as a LoRaWAN gateway, receiving UWB signals and mining truck GPS positioning to determine the distance between individuals and the trucks.

Location: Danmark



Gateway, HMI

Success Cases

reTerminal DM in Healthcare

Industry: Healthcare

Product: reTerminal DM

Solution Introduction:

A system integrator in healthcare is using reTerminal DM as the tablet for healthcare staff to handle various operations such as registration, login verification, testing, and view health testing results, as well as manage health data by scanning the QR code.

Location: China



Panel PC

Learn More: <https://www.seeedstudio.com/blog/2023/06/29/streamlining-medical-checkups-enhancing-medical-practices-with-seeeds-raspberry-pi-powered-customizable-reterminal-dm/>

Success Cases

reTerminal and reTerminal DM in Event Photograph

Industry: Event Photograph

Product: reTerminal, reTerminal DM

Solution Introduction:

PhotoNodes from the USA, uses the reTerminal and reTerminal DM as mobile and stationary kiosk/print servers separately at live events. Photos that have been taken by the photographers are available for viewing and printing on kiosks connected to the reTerminal servers on site. The reTerminals act as both a local access point for the camera to connect to and also connects to the web application where the photos are ultimately stored.

Location: United States

Learn More: <https://www.seeedstudio.com/blog/2023/02/27/streamlining-event-photography-with-seeed-studios-reterminal-kiosk-server/>



Print Server, HMI

Success Cases

reTerminal DM in Smart Office/Access Control

Industry: Smart office/Access Control

Product: reTerminal DM

Solution Introduction:

A system integrator operates in the smart office industry over 20 years is using reTerminal DM for Biometric time and attendance record and access control at office. And in the next cooperation phase would integrate the fingerprint scanner and also touch keyboard there in reTerminal DM as the customization solution.

Location: Australia



HMI

Learn More: <https://www.seeedstudio.com/blog/2023/06/30/biometric-technology-together-with-seeeds-raspberry-pi-powered-hmi-solution-improving-time-and-attendance-tracking-for-smart-offices/>

Success Cases

Edgebox-RPI-200 in Smart Building

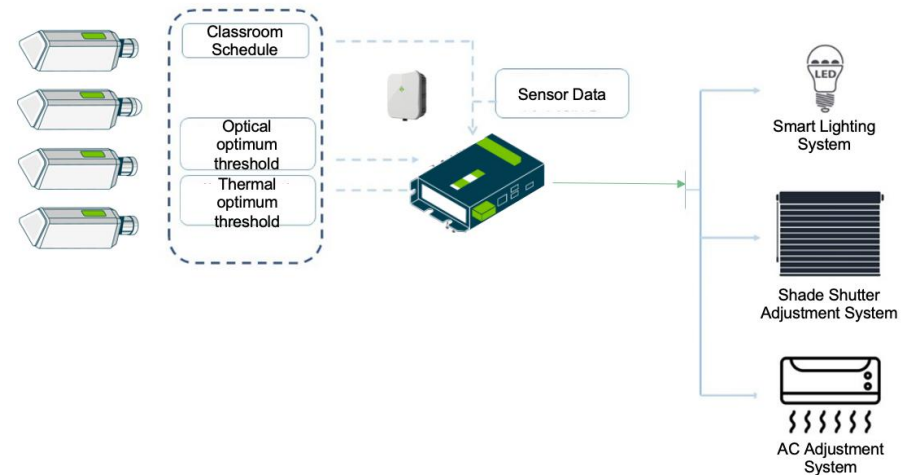
Industry: Smart Building/ Energy Management

Product: EdgeBox-RPI-200

Solution Introduction:

A Chinese company has employed EdgeBox-RPI-200, gateways, and field sensors to overcome the challenge of managing lighting and temperature in an energy-efficient way. The system has been implemented in approximately 10 classrooms in China and has had a positive impact on the health of students.

Location: China



Learn More: <https://www.seeedstudio.com/blog/2023/06/30/revolutionizing-classroom-management-with-iot-and-raspberry-pi/>



Seed's Pi-powered ODM Service

Seeed's ODM Services based Raspberry Pi-powered Devices

We are ready and have had successful experiences to bring product concept to market with our industrial capabilities from design, manufacturing, testing, certification, global distribution and marketplace.

From Product Concept to Market

DESIGN

- ▶ PCBA
- ▶ Driver/BSP/SDK
- ▶ Mechanical
- ▶ Package
- ▶ Accessory
- ▶ Test Plan
- ▶ DFM/DFT
- ▶ Certification

FULFILLMENT

- ▶ System Block Diagram
- ▶ PCB Schematic Pdf
- ▶ Key Components List
- ▶ Firmware/Image
- ▶ Mechanical 3D
- ▶ Test Plan/Report
- ▶ EVT/DVT Samples
- ▶ Certification Report
- ▶ PCB Design (IP)
- ▶ PCB Gerber (IP)
- ▶ Full BOM (IP)
- ▶ SW Source Code (IP)

MANUFACTURING

- ▶ 10-20 pcs Fast Prototype
- ▶ 1K-100K Batches Manufacturing
- ▶ 1-5 Year of Warranty
- ▶ 10+ Years Life Time
- ▶ Product Life-cycle Management

Hours
Days
Weeks
Months
Mass Production

0.1
Concept

1
Get Quotation

10
Design Verification Engineering Samples

100
Finalize Design Golden Samples

1k+
Pilot Run

End of Life

Get Quotation

- Introduction of Project
- Specify Product Requirements
- Sign Agreement

Design Verification Engineering Samples

- Product Design
- Design for Manufacturing
- Design for Test
- Quick Prototype
- Prototype Testing

Finalize Design Golden Samples

- Design Verification
- Sample Build
- Sample Testing


Pilot Run

- New Product Introduction
- Manufacturing process
- Quality Control
- Certification
- Global Logistics


Life-cycle Management


- Yield Management
- Supply Chain Management
- Batch Traceability


Featured Product Design Reference





Custom Design reTerminal DM, Powered by Raspberry Pi CM4


Replace CM4


Interface Modification


Image Flashing


Logo change


Others

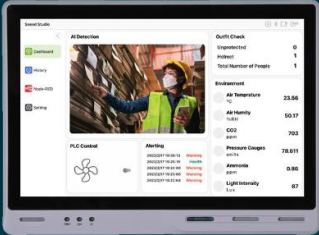
Buy reTerminal DM for Prototype

Customize reTerminal DM

reTerminal DM

Open Block Diagram

A Panel PC, HMI, PLC, IIoT Gateway all-in-one device powered by Raspberry Pi CM4, with 10.1" IP65 front panel and rich industrial interfaces, natively integrated with Node-RED



Success Cases

[ODM SERVICE] reTerminal in Smart Packing

Industry: Smart Packing

Product: reTerminal

Solution Introduction:

Our client has been operating end-to-end packing systems at several large fruit packhouses in South Africa, customizing packaging and labeling semi-robots. They have been using customized reTerminals as the smart labling HMI at large fruit packhouses.

Location: South Africa



HMI

Learn More: <https://www.seeedstudio.com/blog/2022/10/08/odm-services-for-smart-packing-the-reterminal-for-semi-automated-packhouse/>

Success Cases

[ODM SERVICE] reTerminal in Water Management

Industry: Water Management

Product: reTerminal

Solution Introduction:

A system integrator in SCADA and automation solutions is using reTerminals as the HMI and embedded serve in Remote Terminal Unit (RTU) system for flood mitigation and pump control systems.

Location: Malaysia



SCADA HMI, Panel PC

Learn More: <https://www.seeedstudio.com/blog/2023/03/31/integrating-reterminal-in-building-an-efficient-water-management-scada-system/>

Success Cases

[ODM SERVICE] reRouter in Security

Industry: Security

Product: reRouter

Solution Introduction:

A US-based company Patrolio deployed a reRouter-powered security solution together with its active deterrence IP Camera and security monitoring service, ensuring a more intelligent and responsive neighborhood.

Location: USA



Processor Hub

Learn More: <https://www.seeedstudio.com/blog/2023/06/08/a-safer-tomorrow-rerouter-is-enhancing-security-monitoring-solution/>

Success Cases

[ODM SERVICE] reTerminal in Forest Monitoring

Industry: Forest Monitoring

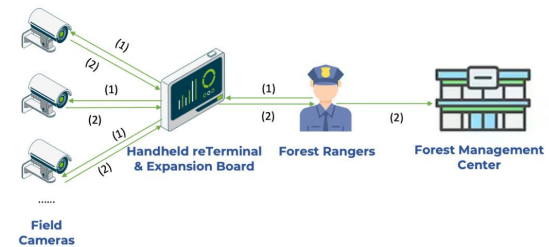
Product: reRouter

Solution Introduction:

A data security–focused software system integrator utilized reTerminal and our Raspberry Pi–based ODM service to enhance their forest management software for end customers. With the help of reTerminal, rangers are able to remotely control cameras, capture photos, and receive image transmissions. These images are then stored on the reTerminal's SD card or eMMC for later analysis at the data center.

Location: Indonesia

Seed Customized Forest Monitoring Solution



(1) Forest Rangers carry the handheld reTerminal in the forest, and interact the device to communicate with on-field cameras to take batch photos, set timed photo taking, and adjust photo interval via LoRa

(2) When Forest Rangers issue image transmission command, the cameras send images captured back to the device, where the images stored in SD card or eMMC. Then the forest rangers take the images back to center to analyze.

Control Center



More Explorations and Innovations

More Pi-based Co-create Partnerships



Creator: Flavio Ansovini – an enthusiast of electronics

Solution: Stunning Öchìn CM4 board based on Raspberry Pi CM4



Creator: Villmer – the founder of POP

Solution: DIY Portable 360 ° virtual reality camera based on Raspberry Pi CM4

More...



seeed studio

CONTACT US



HEADQUARTERS

9F, Building G3, TCL International E City, Zhongshanyuan Road, Nanshan, 518055, Shenzhen, PRC

X.FACTORY

Chaihuo x.factory 622, Design Commune, Vanke Cloud City, Dashi 2nd Road, 518055, Shenzhen, PRC

Japan Office

130 Honjingai 1F, Shin-Nagoya-Center Bldg. 1-1 Ibukacho Nakamura-ku, Nagoya-shi, Aichi 453-0012 Japan



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