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Your Partner in Smart Manufacturing

Application Case Study

Quartz Oscillator Frequency Response - Automated Operation and Analysis of Equipment Testing Robots

Background

Frequency components are one of the key components of electronic products. Taiwan's global market share of frequency components is the second largest in the world, at about 25%, second to Japan's 50%, and higher than the third, China's 12.5%. Among the top 10 companies in the world, Taiwan occupies four seats. Facing future market competition, every competitor has invested heavily in intelligent production lines and smart manufacturing applications to improve production efficiency and quality.

Challenge

On-site production information acquisition methods tend to be manually copied, which has high labor costs and personnel management problems. Manual copying is also prone to data distortion, making it challenging to implement smart manufacturing applications such as production management, production history, data analysis, and production insights.

Solution

### - Equipment l Data Extracting System: VIC7100

The VIC7000 series product is a Vision Intelligence Collector that provides a high-security, non-intrusive PC-based device data acquisition (non-protocol) solution. The image signal in real-time can retrieve the parameters and data on the screen of the production equipment without affecting the operation of the

When the equipment changes production lines, the on-site switch or web page control can stop the page from changing, and the captured data can be stored in the database most efficiently. This robotic-process-automation-mechanism can be used by plugging in the USB HID device in the production equipment; no additional software and drivers are needed. The high-efficiency production automation is achieved without changing the original system. In this case, four VIC7100s were installed; one captured the screen data of the sputtering machine directly, the others acted as a webcam to monitor the screens of 2 to 3 sputtering machines, and then the VIC7100 captured the image data.

Results and Benefits

The use of visual recognition instead of manual copying includes the following result and benefits:

1. Saved the cost of hiring 2 to 3 workers and reduced the false alarm rate of manual errors.

2. The Vision Gateway Equipment Data Extracting System assisted managers in real-time monitoring of machine status and asset inspections, tracking process history, and mastering process parameters for data analysis to improve manufacturing efficiency and optimize costs.
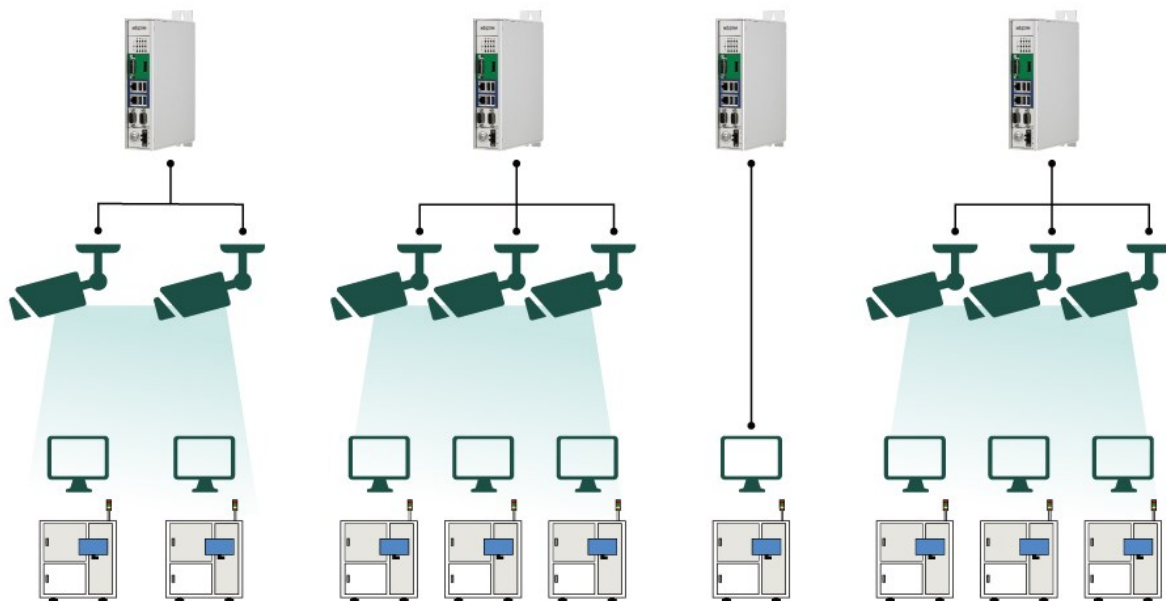
Solution Architecture

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