



THE ADVANTAGES OF AN INDUSTRIAL COMPUTER

Introduction

You will not always need an industrial computer. There are lots of circumstances where a desktop will do the job and save you money. However, there are applications and environments where a desktop won't be equipped to cope – and your initial price tag saving will be eroded by downtime, maintenance and life cycle issues.

From temperature control to storage, power efficiency to uptime management, if it's industrial its been well thought out and tested. Available in rackmount, panel display and benchtop options, industrial computers provide a solid foundation for applications across manufacturing, broadcast, utilities, transport and communications sectors.

Mission critical performance in demanding environments

Computers perform key roles across business – there's a computer on every desk. In industry, a computer may have many different roles – process control, HMI (Human Machine Interface), PLC interface, data acquisition or materials management. Typically the process data collected will be available across the LAN or internet – a real-time window on production performance. Even in the benign office environment, we are periodically frustrated by the blue screen of death. Albeit annoying, the

resulting disruption isn't a show stopper – but what if the computer in question is controlling a production line, a railway signal, a broadcast or flight navigation. Add to the mix environmental demands such as wide temperature ranges, static, air quality, shock and vibration – it's quickly apparent that an industrial platform needs to be engineered for reliability and built to last.

Product Continuity

Of equal importance to product quality is ongoing product support. Desktop production cycles are geared to fast paced, volume consumer markets. If you are looking for a computer platform to control a larger, more complex system, you will be lucky to find a desktop model whose availability lasts the duration of your product development cycle.

An industrial grade system will have a managed lifecycle and long term availability. If you've invested the combined time and effort of your Engineering, Quality and Purchasing team in sourcing, testing and approving the right computer platform, you don't want to have to repeat the process every six months.

In the following table we extract the qualities unique to an industrial grade computer which enhance overall performance and reliability in demanding environments.

The Industrial computer feature checklist

Chassis Design

IP 65 and 54 rated screens, protection against:

- ▶ Incidental contact with enclosed equipment
- ▶ Falling dirt & rust
- ▶ Circulating dust, lint, fibers, and flyings (non-explosive)
- ▶ Falling liquids and light splashing

Indoor & outdoor use, protection against:

- ▶ Incidental contact with enclosed equipment
- ▶ Falling dirt & rust
- ▶ Circulating or windblown dust, lint, fibers (non-explosive)
- ▶ Oil and coolant seepage
- ▶ Hosedown and splashing water
- ▶ Corrosive Agents

Rugged resistive touch-screen tested for compatibility with many industrial chemicals and designed for use with gloved hands.

Design Quality and Standards

Conforms to European Union EMC Directive 89/336/EEC restricting interference with other Electrical Equipment (RF radiation)

High percentages of electronic failures will occur in the first day of operation. To minimize "infant mortality" each unit is burned in at the factory (under load and at maximum ambient temperature) for 12 hours.

Hardware and BIOS tested with leading industrial software and hardware products.

ISO 9001 certification

CE approvals on all Blue Chip Technology hardware

Power and cooling

Careful attention is paid to providing the amount of power needed for computer and peripheral application without excess power consumption.

Low Voltage Power Sources if required

Computer may be driven by 24 VDC power

Environmentals

High Ambient Temperature Operating

Environment: Computer designed so that at ambient temperatures up to 50°C, all components in the unit remain below maximum temperature specifications.

Corrosive Atmosphere: Gold plated connectors

High Incidence of Vibration and Shock Loading: Unit designed and tested to meet industrial shock and vibration requirements

Operating:

Shock - 15g peak acceleration, 11 msec duration

Vibration -5 to 2000 Hz (.006" peak to peak displacement) 1 g max accel.

Non operating:

Shock - 30g peak acceleration, 11 msec duration

Vibration -5 to 2000 Hz (.006" peak to peak displacement) 1 g max accel.

Optional locking cables

Note: Rotating media (disk drives) reduce the tolerance of the unit to shock and vibration. For this reason, many industrial users may opt for diskless operating systems. Industrial computer product manufacturers will focus heavily on this technology as commercial diskless products, such as Windows CE become prominent.

Product Continuity

Hardware

Units mechanically designed to be backward compatible

Components selected to maximise product lifetime

Peripherals validated to provide backward compatibility with legacy product

Units mechanically designed to allow installation with industry standard apertures

Modular design allows easy upgrade

Software

Source code for the BIOS is licensed from Phoenix.

Blue Chip Technology then creates, and owns rights to its own BIOS. Versions are controlled to assure customers that new equipment can be configured to be compatible with legacy configurations.