If your business needs to be more productive, but you don’t need a new production cell, ABB has the solution for you. The IRC5 controller is a small and affordable upgrade to your equipment, but a large boost to your robot cell.

The IRC5 is an intelligent way of giving your old robot system and your operation a significant boost. By simply replacing the old controller with an IRC5, a range of new possibilities are unleashed for the entire robot cell.

**Give a boost to your robot system:**
- Faster processing speed
- Enhanced motion control
- Increased flexibility
- Upgraded Teach Pendant
- Integrated safety
- Control multiple robots using one controller
- Low cost of ownership
Looking for a solution to improve your robot cell performance?

**Lower cost – Upgraded value**
Do you have robot systems which do not exactly meet your requirements? Well, in entire robot systems, the robot arms may have many hours left in operation, but the controller cannot handle the new challenging demands. Instead of investing in a new robot cell, the value of an older cell can be enhanced many times simply over by enabling it to work more freely and productively with a new controller. In short – a small maintenance cost in controller replacement can replace a larger investment in a robot system, with the same end result.

**Harmonized controller types**
Numerous different components in your systems are always more complicated than having a few. As the IRC5 controller is so flexible and compatible, this allows you to minimize the number of different components. Simply put – one controller type gives less parts handling and better flexibility to maximise your system use.

**Service friendly**
There are a number of different cabinets available for the IRC5. All designed to make it as easy as possible to upgrade without the need to change anything more than necessary in the cell. All cabinets are easy to access for service and maintenance, and enable optimization of footprint and cell layout.

**Easy to install**
We know you will not upgrade if it gives you a headache, so we are pleased to offer you assistance to handle the modifications required in your original application software to make it 100% compatible with the new IRC 5. When replacing an S4C+ with an IRC5, only minor modifications are required for the I/O setting, the rest is simply plug and play. No fuss, no surprises.
The key features

Cabinet
With a wide range of cabinets, there is always a model for your needs. All designed for cell layout flexibility and minimized footprint. Needless to say that service friendliness is built in.

Flexpendant
The performance will never be better than the operator’s interaction with the robot. The Flexpendant is easy to use from both interface and ergonomic perspectives. The intuitive joystick enables the operator to work with an eye on the robot instead of on the control. Extensive language support, USB connection, high contrast touch screen and possibility to customize applications make this the operator’s best friend.

SafeMove
Not only faster and more accurate – IRC5 is also increasing safety for both operator and equipment, as supervision and control of operation is improved with collision detection and supervised speed, position and orientation.

TrueMove
Absolute accuracy in following the defined path regardless of speed, ensures a boost to the process quality in your operation. And to increase usability even more, the programming time is shorter than ever.

QuickMove
The QuickMove feature enables the robot cell to work at its best. With advanced calculation models and intelligent interpolation, the robot is enabled to perform at its full physical capacity. Productivity as it should be.

Programming language
The IRC5 controller allows complex programming solutions, without getting stuck in spaghetti code. All tailormade applications can be reused and are accessible in offline mode.

Motors and Gear Units
Motors and gear units are available in a wide range of cost-efficient, well-proven and standardized packages. Easy installation and commissioning save time throughout the entire project.

Other features
SoftMove, integrated PLC, load identification, collision detection, conveyor tracking... The list to make your robot cell more powerful and flexible, yet easier to operate, is extensive.

MultiMove
With IRC5 a shared control solution can be used to control multiple robots through one single connection point, and sharing cell level equipment such as fixtures. This not only lowers investment and installation costs, but also saves space.
## IRC5 Specification

### Control hardware
- Multi-processor system
- PCI bus
- Pentium® CPU
- Flash disk for mass memory
- Energy back-up power failure handling
- USB memory interface
- Object-oriented design
- High-level RAPID programming language
- Portable, open, expandable
- PC-DOS file format
- RobotWare software products
- Preloaded software, also available on DVD

### Electrical Connections
- **Supply voltage**
  - 3 phase 200-600 V, 50-60 Hz
  - 1 phase 220/230 V, 50-60 Hz (for Compact Controller only)

### Physical
- **Single cabinet**
  - 970 x 725 x 710 mm
  - Weight 150 kg
- **Dual cabinet**
  - 1370 x 725 x 710 mm
  - Weight 180 kg
- **Control module**
  - 720 x 725 x 710 mm
  - Weight 50 kg
- **Drive module**
  - 720 x 725 x 710 mm
  - Weight 130 kg
- **Empty cabinet for customer equipment**
  - Small: 720 x 725 x 710 mm
  - Weight 35 kg
  - Large: 970 x 725 x 710 mm
  - Weight 42 kg
- **Panel Mounted**
  - Control module: 375 x 498 x 271 mm
  - Weight 12 kg
  - Drive module small: 375 x 498 x 299 mm
  - Weight 24 kg
  - Drive module large: 658 x 498 x 425 mm
  - Weight 40 kg
  - Compact controller: 258 x 450 x 580 mm
  - Weight 27.5 kg

### Environment
- **Ambient temperature**
  - 0-45°C (32-113°F) option 0-52°C (32-125°F)
- **Relative humidity**
  - Max. 95% non condensing
- **Level of protection**
  - IP 54 (cooling ducts IP 33)
- **Fulfilment of regulations**
  - Machine directive 98/37/EC regulations
  - Annex II B
  - EN 60204-1:2006
  - ISO 10218-1:2006
  - ANSI/RIA R 15.06 - 1999
  - UL 1740-1998

### User Interfaces
- **Control panel**
  - On cabinet or remote
  - Weight 1 kg
- **FlexPendant**
  - Graphical color touch screen
  - Joystick
  - Hot plug
  - Support for right and left-handed operators
  - USB Memory support
- **Maintenance**
  - Status LEDs
  - Diagnostic software
  - Logging with time stamp
  - Remote Service enabled

### Safety
- Safety and emergency stops
- 2-channel safety circuits with supervision
- 3-position enabling device
- 5 safe outputs monitoring axis 1-7
- Supervision of stand-still, speed, position and orientation (robot and additional axes)
- 8 safe inputs for function activation,
  - 8 safe monitoring outputs

### Machine Interfaces
- **Inputs/outputs**
  - Up to 8192 signals
- **Digital**
  - 24V DC or relay signals
- **Analogue**
  - 2 x 0-10V , 3 x ± 10V , 1 x 4-20mA
- **Serial channel**
  - 1 x RS 232/RS 422 with adapter
- **Network**
  - Ethernet (10/100 Mbits per second)
  - Two channels Service and LAN
- **Fieldbus Master**
  - PROFINET
  - PROFIBUS DP
  - DeviceNet™
- **Fieldbus Slave**
  - PROFINET
  - PROFIBUS DP
  - DeviceNet™
  - Ethernet/IP™
  - CC-link
- **Conveyor encoder**
  - Up to 6 channels
- **Integrated PLC**
  - AC500

### Sensor Interfaces
- Search stop with automatic program shift
- Seam/contour tracking
- Conveyor tracking
- Machine vision
- Force Control

Data and dimensions may be changed without notice.