

LOWEST COST OF OWNERSHIP

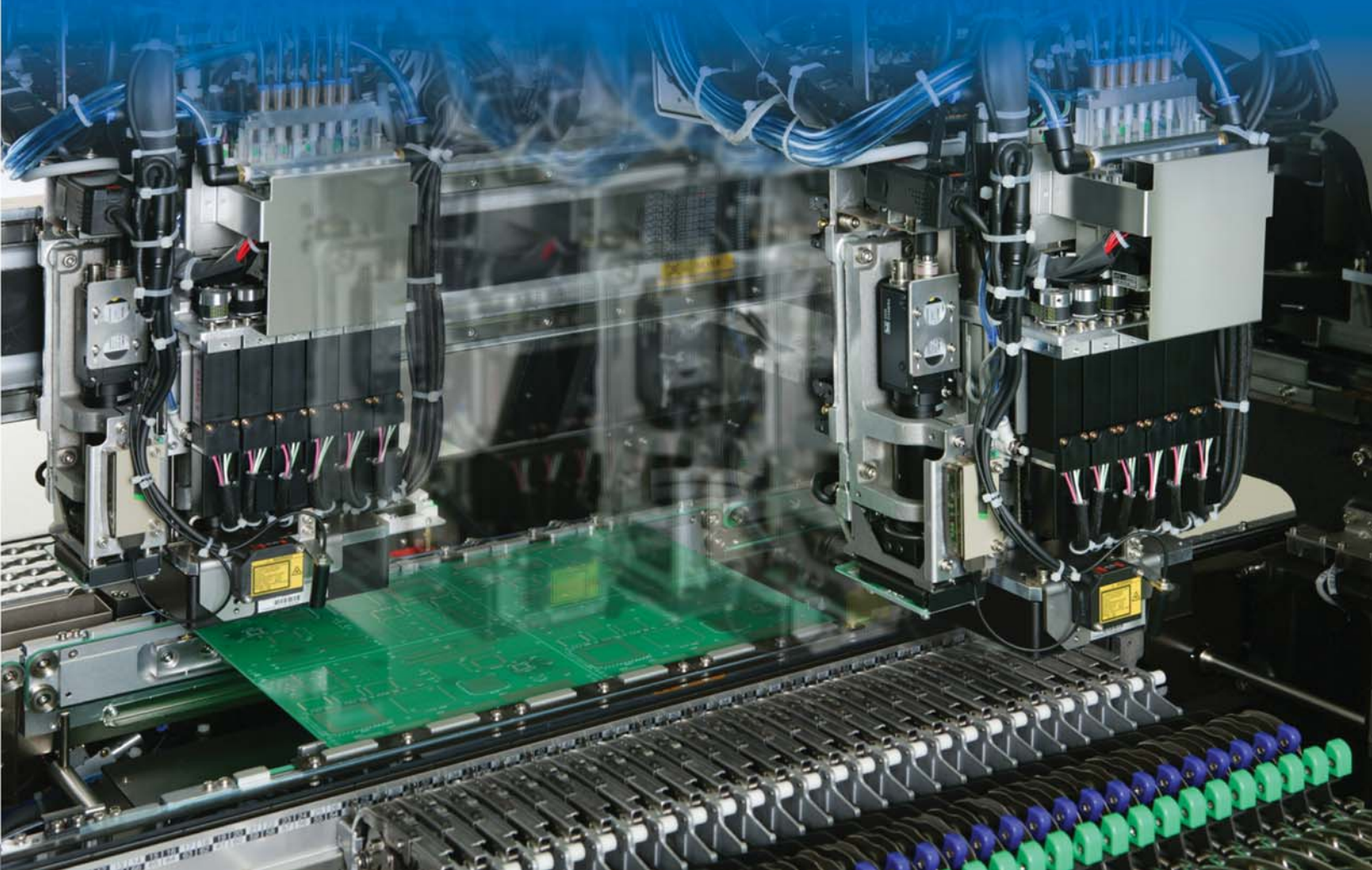
**JUKI**<sup>®</sup>

## JUKI Productivity Software Solutions



IS Intelligent Shopfloor Solutions —————> NPI+ —————> IFS-X2

Software that brings your production to life.



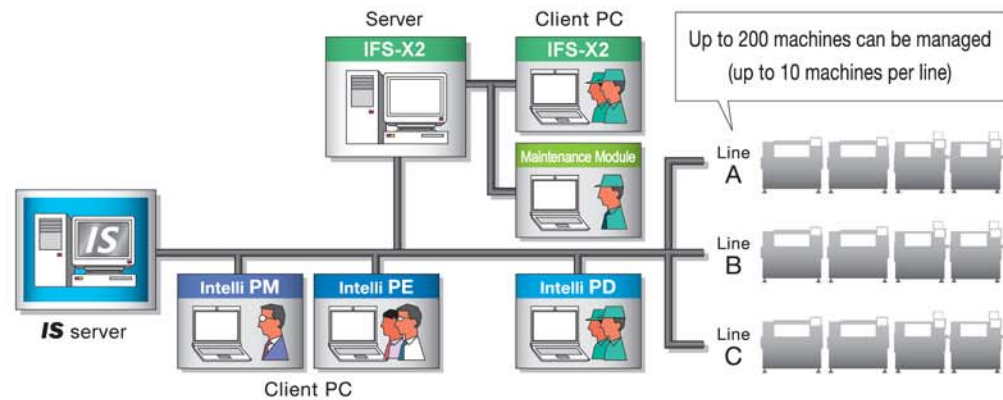
# IS Floor Productivity Improvement Support System

## Intelligent Shopfloor Solutions

### System Overview

IS is comprised of five software functions within a single application. A client-server architecture connects the IS server to clients throughout the factory via Ethernet for factory wide control.

<b>Consolidated Management of Information</b>	Sharing information stored in the server. Prevention of defects caused by inaccurate communication. Reduction of work by sharing data across multiple lines and production floors.
<b>Security</b>	User registration allows operation privileges to be specified for each user group.
<b>Versatile Data Format</b>	Production files are saved in an open XML format for easy editing. Data can be transferred easily to other applications.



### NPI+

- Included with IS
- Convert CAD, Gerber, ASCII or centroid data to JUKI format in seconds
  - Standard support for most common CAD formats
- Dramatically increase efficiency and eliminate human errors vs. manual teaching
- Automatically add new part numbers to the database in a single click and integrated with IS component database
- Adjust board origin, rotate data and panelize
- Machine angle verification layer wizard confirms each package selection's final placement angle automatically
  - Reduce downtime for assembly by first article
- Feeder Setup Report allows the operator to see how the part should be oriented in the feeder
- Easy upgrade to full CircuitCAM supporting full production line, visual aids and more
- Programs are automatically registered into IS database upon program generation
- Easy operation: User interface – Graphical operation screens that are standardized across applications



### Intelli PE Program Editor

- Create Production Programs
- Line Optimization

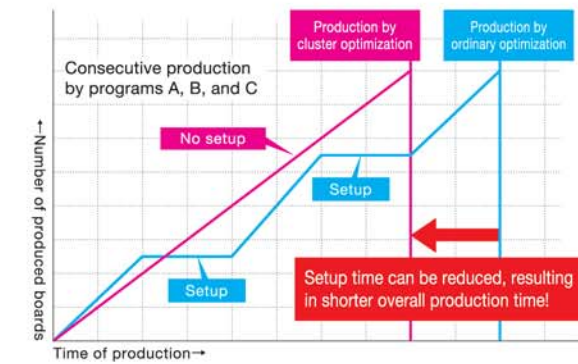
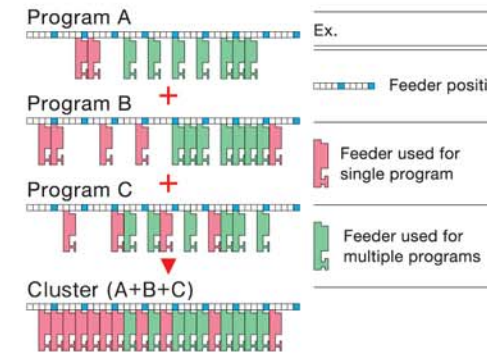


Virtual machine configuration allows distribution of placement data to mounters made by other companies.

Intelli PE is used to create and optimize individual production programs. It is also possible to include "virtual machines" in the line to simulate machines from other manufacturers.

### Job Optimizer

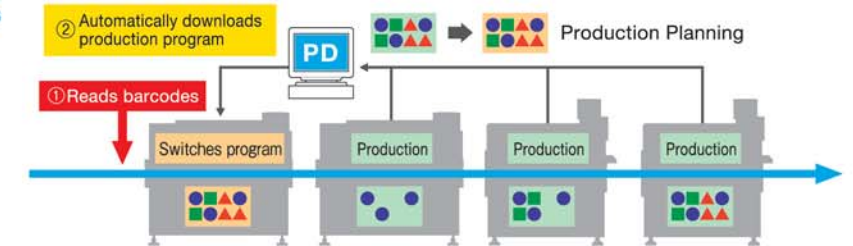
Cluster optimization groups several different production files together in a common feeder setup. It reduces changeover time by eliminating the need to setup feeders between jobs.



### Intelli PD Program Downloader

- Download Production Programs to Multiple Lines
- Line Monitoring
- On-demand Production (optional)

Intelli PD downloads production programs made in Intelli PE or the Job Optimizer to the production lines and uploads changes made at the machines. It can control multiple lines simultaneously and monitor the production status of each line.



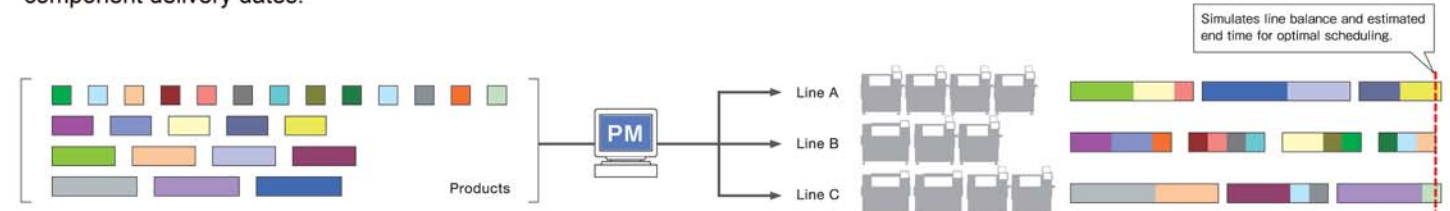
### On-demand Production

On-demand production enables the production line to automatically change between jobs by reading a barcode on the PCB prior to starting production. Production files are optimized into a single feeder setup. (All PCBs must be the same size.)

### Intelli PM Program Manager

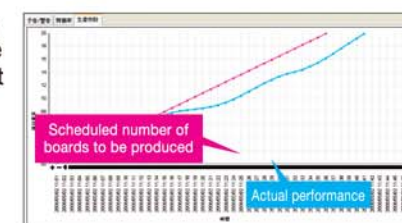
- Improve the Operating Rate of the Entire Floor
- Factory Status Display
- Performance Calculation

Intelli PM automatically makes a production schedule for the entire floor. The schedule is based on the production requirements vs. capabilities of each line on the floor as well as changeover. It is possible to specify various conditions such as due date for the job and component delivery dates.



### Production Monitoring

Line status and real time production results can be monitored from any client PC. Problems can be identified and solved quickly.



### Performance Calculation

Production results are calculated and summarized graphically in pie or Gantt charts.



# IFS-X2 Verification System

- Verified Off-line Setup
- Parts Verification
- Component Inventory Control
- Traceability (optional)



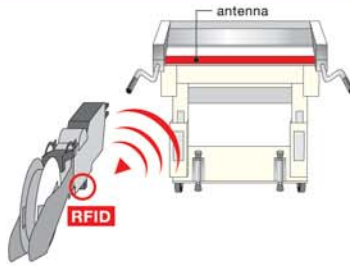
The system uses 1D or 2D barcodes for quality control and improving setup time. Incorrect placement of feeders can be prevented and traceability of component codes to each PCB is available. The system works either in a semi-automatic barcode method or a fully automatic system using RFID tags attached to feeders and readers on the machine.

## Off-line setup function

Off-line setup using feeder trolleys enables verification of component locations and prevents human errors.

### With RFID System

The location of every feeder is automatically detected when the feeder is placed on the feeder trolley. It helps the operator's efficiency and provides a double check of the location.

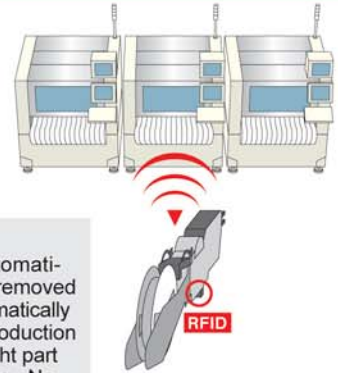


## Parts verification

The parts verification function confirms that the correct part has been placed in the correct location on the feeder bank. An interlock prevents production until the parts are properly verified, thereby preventing defective boards from being assembled.

### With RFID System

The removal of any feeder is automatically detected. When a feeder is removed to replace a reel, the system automatically flags it for re-verification before production can resume, thus ensuring the right part has been placed onto the machine. No "buddy check" is required so the downtime is minimized.



## Component inventory control · Feeder location search

Components can be stored in registered locations to improve stock control and the component count is always maintained by the Intelli IFS system even during production.

### With RFID System

The RFID enabled storage rack (optional) shares the location for stored feeders with the entire system making it easier to find reels when you need them.



RFID enabled storage rack

## Traceability

Option

Traceability is the collection and recording of component lot codes placed on each circuit board. With this option, the machines will scan a 1D or 2D barcode on each circuit board and then record the lot number of each part placed by reference designator. In cases where more than one feeder is used for the same part number, either because multiple feeders were used for efficiency or because a reel was replaced during production, IFS-X2 will record the correct lot number for each reference designator. This data is saved to a database where reports and queries can be run at any time.

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