Compatible models

Series name	Compatible models
RS series	RS-1R / RS-1
KE series	KE-2050 / KE-2060 / KE-2050R / KE-2055R / KE-2060R / KE-2070 / KE-2080 / KE-2080R / KE-3010 / KE-3010A / KE-3020 / KE-3020R / KE-3020V / KE-3020VA / KE-3020VRA / KE-1070 / KE-1070C / KE-1080 *1 / KE-2070C*1
FX series	FX-3 / FX-3R / FX-3RA / FX-1R*1 / FX-2*1
RX series	RX-6 / RX-6B / RX-6R / RX-7 / RX-7R / RX-8*2
KD series	KD-2077*3
JX series	JX-350*4
JM series	JM-100 / JM-50 / JM-20 / JM-10*3
RP / RV series*5	RP-1 / RP-2 / RV-1 / RV-2 / RV-2-3D / RV-2-3DH / RV-2-3DHL

*1 Only for IFS-NX   *2 Basic Editor + Line Manager are required.   *3 Only for JaNets   *4 Program creation only   *5 Only JaNets equipment manager is supported.

JaNets Basic Software
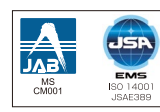
Product name	Major functions
Basic Editor	Data creation (single production program)

【OP】 CAD conversion function (Flexline CAD)

Product name	Major functions
【OP】 Line Manager	Line management (line monitoring, line production program creation, cluster optimization, production program download, line unit optimization, simulation)

Product name	Major functions
【OP】 External Output	Information Output function (external output (machine operation status / production management information), MES linkage), Interface with ISM (delivery instruction, remaining quantity management) Feeder setup verification, Traceability, External setup function, JSON format output, Off-line feeder setup, CFX format output, JUKI co-NECT option, JaNets mobile

Product name	Major functions
【OP】 Trace Monitor (standard)	Analysis, improvement support, monitoring

Product name	Major functions
【OP】 Equipment Manager	Equipment Management function, Other Machine

Product name	Major functions
【OP】 Data Manager	DB server management function

IFS-NX Basic Software

Product name	Major functions
IFS-NX Software	Parts verification / Component inventory control, Feeder location search / Off-line setup function / Random feeder setup

Product name	Name
Options list	Traceability license (machine side option), external setup license (additional), feeder maintenance license (machine), feeder maintenance license (floor), MSD license, ISM3600 / 2000 / 1800TTC connection license, kitting control license, open interface license, IFS Printer machine license set, IFS printer trace license set, IFS storage license set

Visualization options

SMT Total System Software

JaNets
Juki Advanced Network system

Intelligent Feeder System

IFS-NX
Intelligent Feeder System

JUKI Smart Solutions

JaNets website   IFS-NX website

State-of-the-art system solutions for smarter production

ERP — Production, Sales, Quality management, Accounting, Time management, Purchasing

CONTROL OFFICE

MES — Design Information, Database, In out management, Testing, Technology, Planning

Factory backbone system cooperation

Remote support
Cooperation among facilities
Programming
Production setup support
Storage management
Traceability

JaNets

Production status monitoring

FACTORY

Accept parts · Setup area · Finished Goods Issue · Maintenance · Parts warehouse · SMT process · POST-process · Assembly process · Automatic warehouse

JUKI Smart Solutions

Factory wide solutions based on JaNets

JaNets

- Programming
- Production planning
- Component stocking and management
- Preventative maintenance Management data
- Component delivery
- Error proofing Traceability
- Line status
- Centralized inspection control
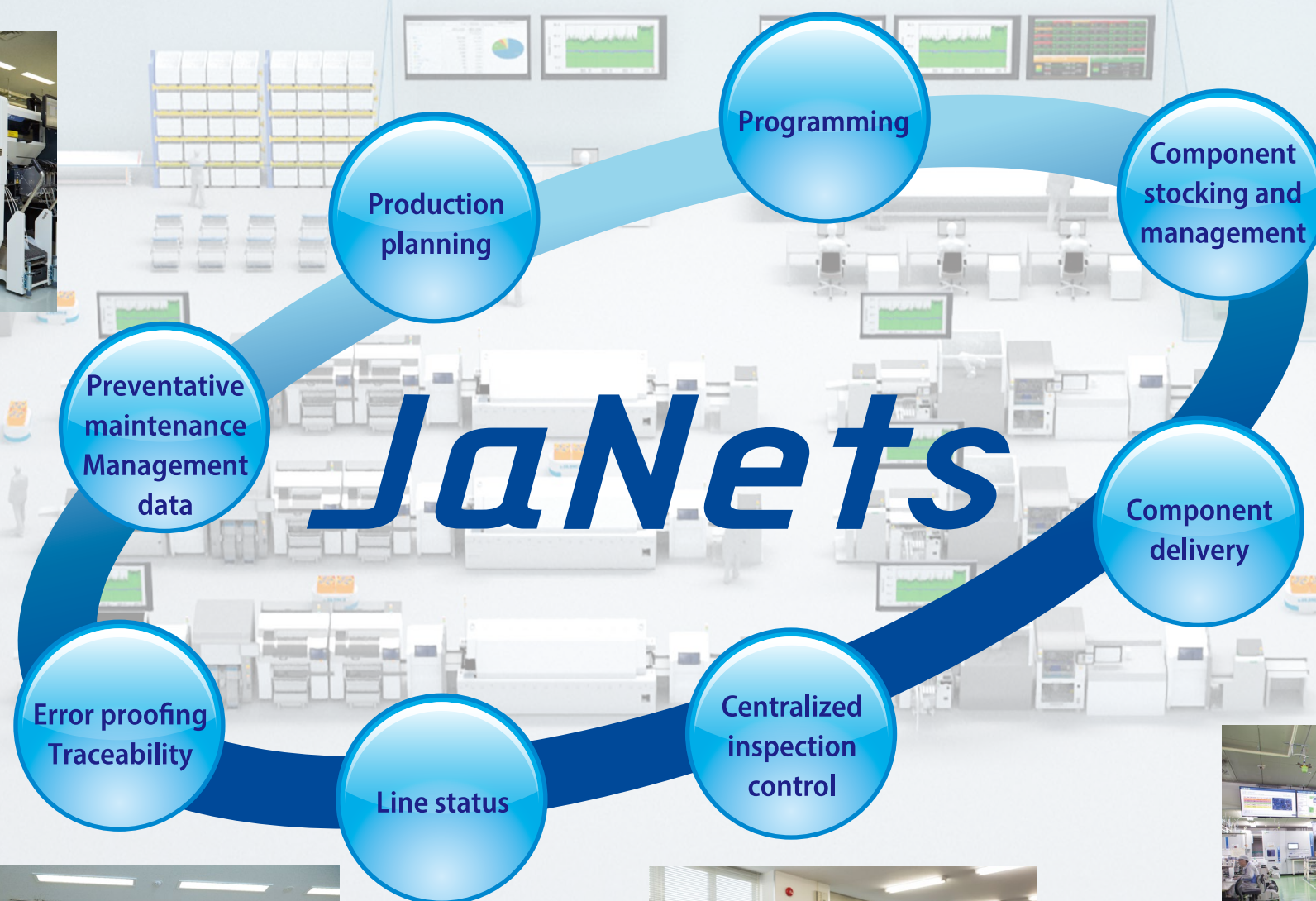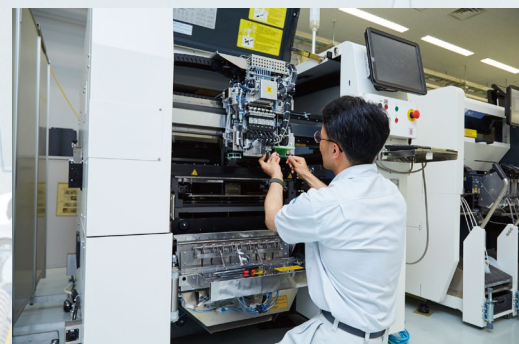
Programming — Prepare and optimize production files

■ Cluster optimization(Line Manager)
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.
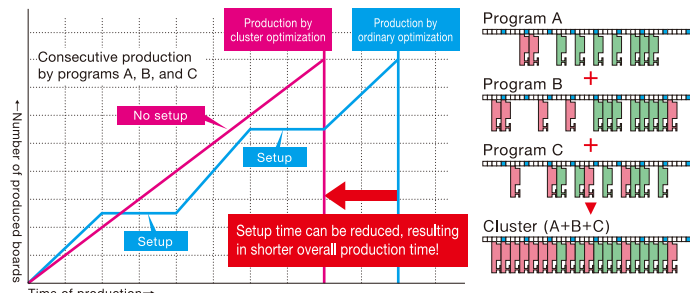
■ Flexline CAD (Basic Editor)*
Data conversion system to convert text data files generated by CAD systems or output from other machines to JUKI data format. Users can choose from pre-defined input formats or define and save custom conversion formats.
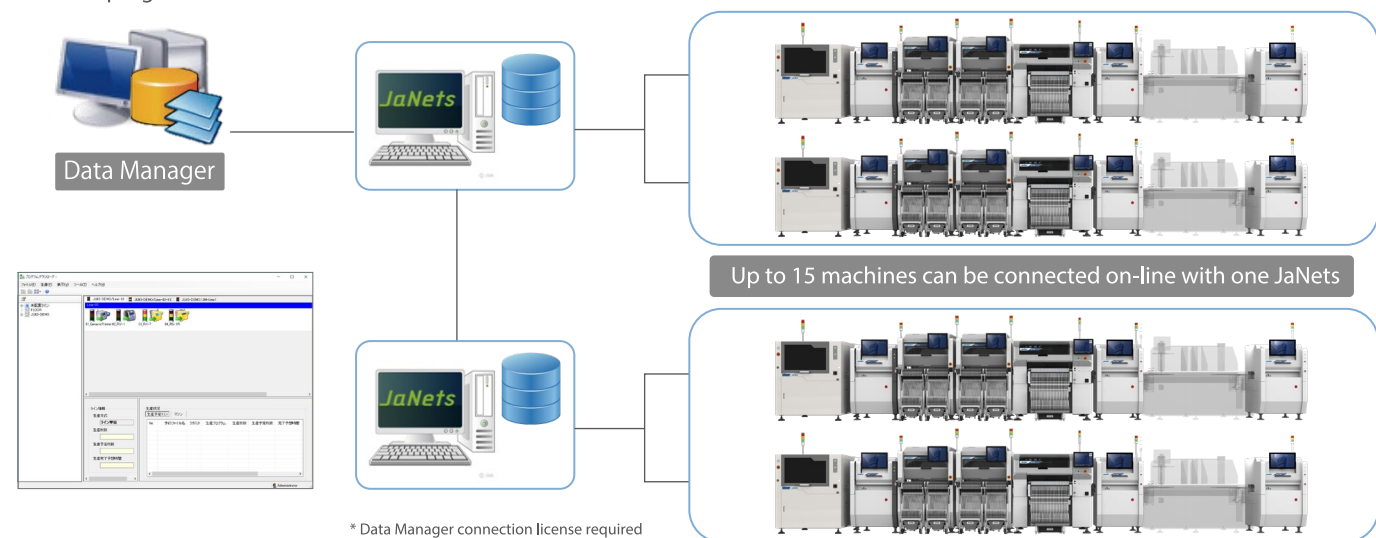*Option

Production by cluster optimization
Production by ordinary optimization
Consecutive production by programs A, B, and C
No setup
Setup
Setup
Setup time can be reduced, resulting in shorter overall production time!
←Number of produced boards
Time of production→

Program A
Program B +
Program C +
Cluster (A+B+C)

Server manager DB — Programs and component data can be shared across multiple lines

Production programs created on other client PCs can be shared.

Data Manager

JaNets

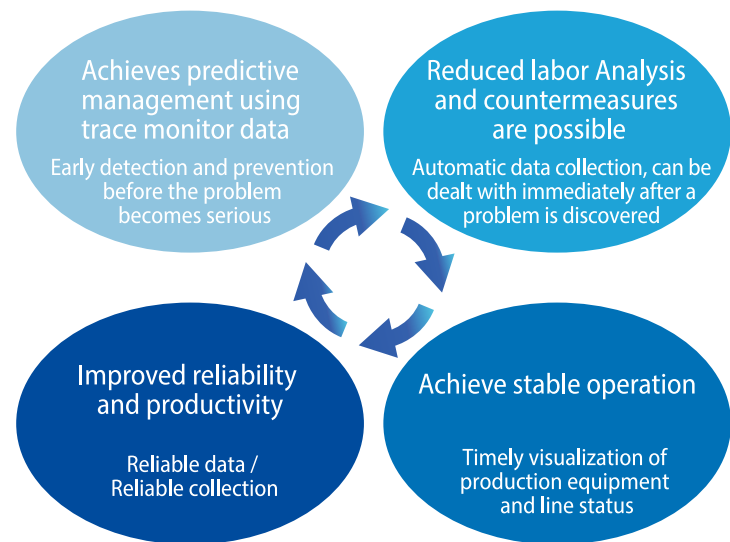Up to 15 machines can be connected on-line with one JaNets

JaNets

* Data Manager connection license required

Analysis / optimization support software — Achieve stable operation by visualizing equipment status and performance
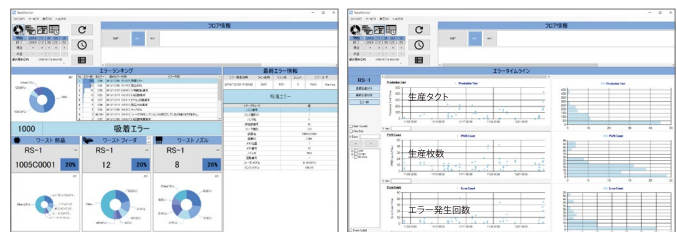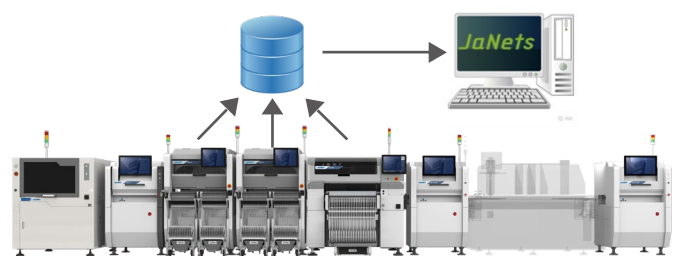
Trace monitors support equipment data collection, analysis, countermeasures, and improvement activities for daily productivity and quality improvement. Equipment operation data is automatically collected and displayed on an easy-to-read screen such as error ranking and the number of error occurrences in chronological order. In addition, remote assistance from a location away from your factory is also possible.

【Data collection and management】 *Option

JaNets

Achieves predictive management using trace monitor data
Early detection and prevention before the problem becomes serious

Reduced labor Analysis and countermeasures are possible
Automatic data collection, can be dealt with immediately after a problem is discovered

Improved reliability and productivity
Reliable data / Reliable collection

Achieve stable operation
Timely visualization of production equipment and line status

Problem Resolution
Worst 10 by parts / nozzles / feeders
◎Clarifies error trends
◎Efficiently improve error stop factors

Increases Productivity
Identifies hidden improvement opportunities
◎Maintains SMT line throughput balancing
◎Reduces downtime

External output function — Line management data (line output, line status, production information)

Enables machine event status output with analysis and visualization reporting graphics. Supports IPC-CFX format.
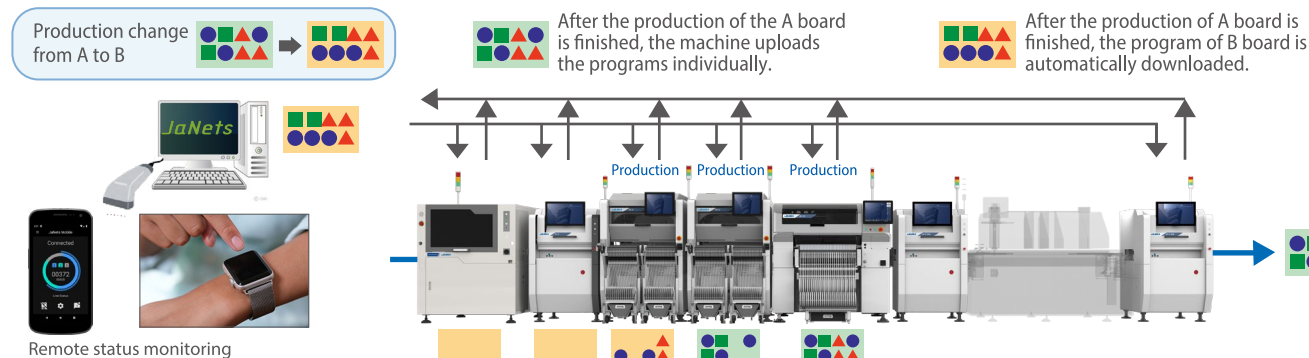
Line management function — Line level programming and balancing / Production simulation and cycle time estimation

Utilities included for bi-directional program exchange with JUKI's program editor. Outputs include machine operation and production information.

■ Production program download / upload to line
■ Machine operation information / production information output function
■ Multi-line management
■ Individual machine production (switch programs sequentially from production completed machines)
■ Program download / upload instructions by JaNets mobile *, machines Error notification
*Option

Production change from A to B

After the production of the A board is finished, the machine uploads the programs individually.

After the production of A board is finished, the program of B board is automatically downloaded.

JaNets

Production Production Production

Remote status monitoring

System linkage between equipments — Full line control including printer and AOI/SPI

By adding Equipment Manager to Line Manager, it is possible to manage the entire line including printing machines and inspection machines.

■ Printer/SPI program management
This makes it possible to manage more of the production line from a single software.

■ Bad mark propagation
Bad mark information is registered on the inspection machine and passed to the mounter, saving time.

【BEFORE】
RX-8 RX-8 RS-1R

【AFTER】
JaNets
RV series RX-8 RX-8 RS-1R
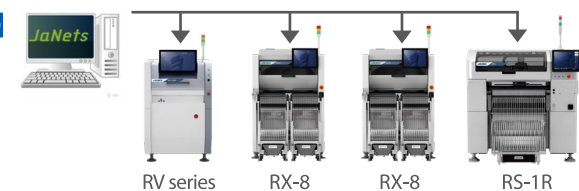
■ Production management information and data output function
Printer and SPI production status and management information can be collected and sent to MES software using the external output function.

■ Feed forward for printing misalignment*
The SPI results can be fed forward to the mounter and applied as a placement offset to reduce defects.

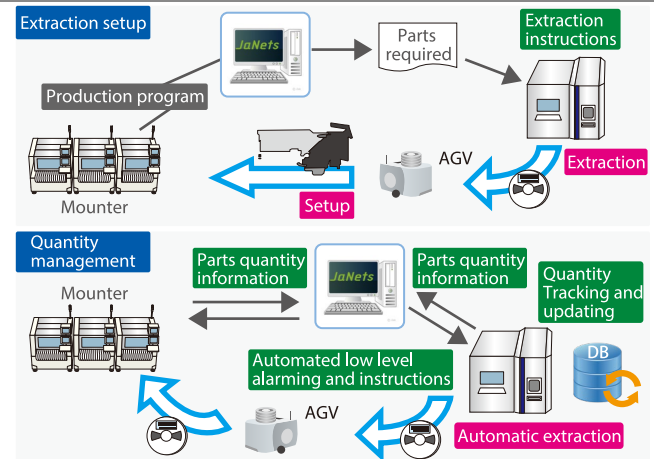* Applicable models are RV series and RS-1 series

JaNets

ISM Interface

Component management, storage, inventory management, and kitting.

■ Automated line balancing and feeder position indication (line / mounter / trolley, etc.)
■ Analyzes parts of mounter pick lists and determines priority of parts picked based on FIFO, unique ID label date, parts manufacturing date, and/or minimum required reel or tray quantities to meet the PWBA production quantity.
■ Extraction in cluster units by combining parts lists
■ Automated low level parts warning through JaNets
■ For the remaining number of parts of the ISM server, subtract / update the number of mounters used for the production of one board.
■ Highly accurate part counting including component miss-picks.

Extraction setup
JaNets
Parts required
Extraction instructions
Production program
Mounter
AGV
Extraction
Setup

Quantity management
Mounter
Parts quantity information
JaNets
Parts quantity information
Quantity Tracking and updating
Automated low level alarming and instructions
AGV
DB
Automatic extraction

Inuitive graphical displays to visualize and act on production data

Visualizes production progress, equipment operating status, errors, etc. at the production site, speeds up decision making, and supports optimal operation of the production line.

- ■ Production progress ■ Equipment management ■ Error ■ ISM warehouse production operation
- ■ Quality history ■ Defect analysis ■ Operation analysis ■ Compatible with other companies' equipment


Parts verification
JaNets External Output / IFS-NX

This function prevents mis-installation of parts at the start of production and when parts are replaced. An interlock function prohibits starting production until verification is completed preventing the possibility of building defective boards.

With RFID/CAN System

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

Off-line setup function
JaNets External Output / IFS-NX

Parts and mounting positions can be collated by external setup using a batch replacement trolley preventing human errors. In addition, external setup verification can be performed even during production, and setup time shortened.

*JaNets is RS-1 series only.

With RFID/CAN System

The location of every feeder is automatically detected when the feeder is placed on the machine. It helps the operator's efficiency and provides a double check of the location.
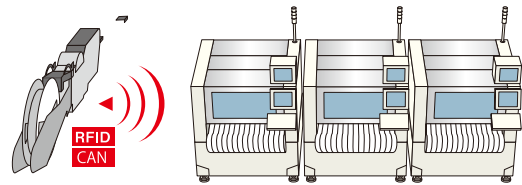
Traceability
JaNets External Output / IFS-NX

Information such as production time, production mounter ID, part serial number, placement positions down to the reference designator level, mounting head, and supply position can be saved and tracked by each PWBA's Serial Number.

*Enables external data output

Random feeder setup
JaNets External Output / IFS-NX

Recognizes the parts set on the trolley and changes / updates the pick position of the production program.
It is possible to switch production and start production in a short time without changing the supply position of components.

*Parts and mounting positions can be collated by external setup using a batch replacement trolley, and human error can be prevented. In addition, external setup verification can be performed even during production, and setup work time can be shortened.

With RFID/CAN System

The RFID/CAN feature automatically recognizes random feeder setup positions.

*Available with EF/RF feeders only.

【Difference between RFID and CAN】

The RFID system uses tags on every feeder and antenna boards mounted on the feeder bank to read the position of every feeder.
The CAN system*, compatible with electronic feeder only, uses the feeder's unique ID and connects by the same connector that is used for feeder power and status.

TOPSS(RV series optional software）

TOPSS Production support system Saves labor and simplifies management

TOPSS makes it possible to review defect judgment, repair station, quality traceability, SPC, off-line program creation and editing from one location. Saves labor and improves quality.

Post-print inspection
Solder paste inspection (SPI)

Between mounters
Detection of chip inclusion before CSP mount.

Pre-reflow inspection
Inspection of mounting condition of parts

Post-reflow inspection
Final inspection

TOPSS SERVER

SPC
Statistical management of inspection information

By statistically analyzing the vast amount of information examined and managing offset of parts, it is possible to prevent the occurrence of quality problems beforehand. Also, it can be used as a tool to improve process by statistically analyzing results.

Repair Station
Manage repair history

Off-line repair history can be tracked and saved along with failures reported by the inspection machine.

NG information
TOPSS server
Repair result
Repair information
Repair for each board
Repair station

Quality Traceability
Inspection history

An image of the PCB, inspection results and defects found can be saved on the server.

Centralized Review

【CCC mode (Central Conformation Control)】

Centralized review allows a single operator to review inspection results from several machines. This system reduces the number of workers required and improves consistency by having fewer individual judgments involved.

【OLR mode (outside device judgment)】

One to one judgment system. Even during the judgment, it is possible to inspect the board, it is possible to improve the operation rate without a judgment waiting time loss.

【CCC mode】
NG judgment
Judgment

【OLR mode】

Data share

The inspection machine, TOPSS server, and central management stations can all be connected via network, reducing transfer time and eliminating the need to stop the machines.

TOPSS server
Save model data
Information transfer
Off-line PC