OMRON

For Even More Efficient SMT Production
Introducing the 2nd Generation RNS Series

VT-RNSII
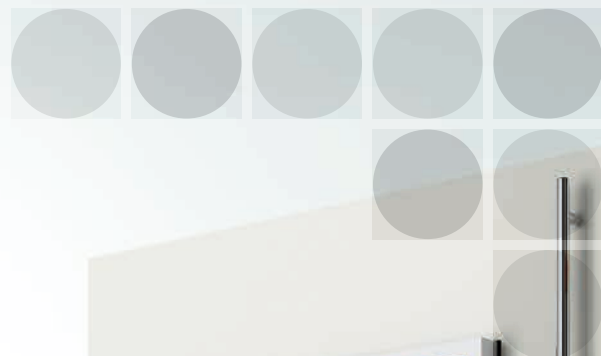
realizing

Make Your SMT Production More Efficient while Achieving Zero Defects

PCB Inspection System

VT-RNS II

Four advantages only Omron can provide

Omron's second-generation, in-line PCB inspection system the VT-RNS II, delivers fast and reliable results to prevent defective boards from reaching your customer. We simplified the inspection program generation process with our easy-to-use EzTS software to efficiently handle high mix/low volume production. Omron has reduced post-reflow inspection times by 20% by utilizing faster shutter speeds and improved image processing.

NEW

[Faster]

Improved image processing for faster post-reflow inspections

Compared to the first generation VT-RNS
(Field of View 1280x1024)

→→ **20%** Faster

[Quick Setup]

So easy that anyone can set up inspection programs.

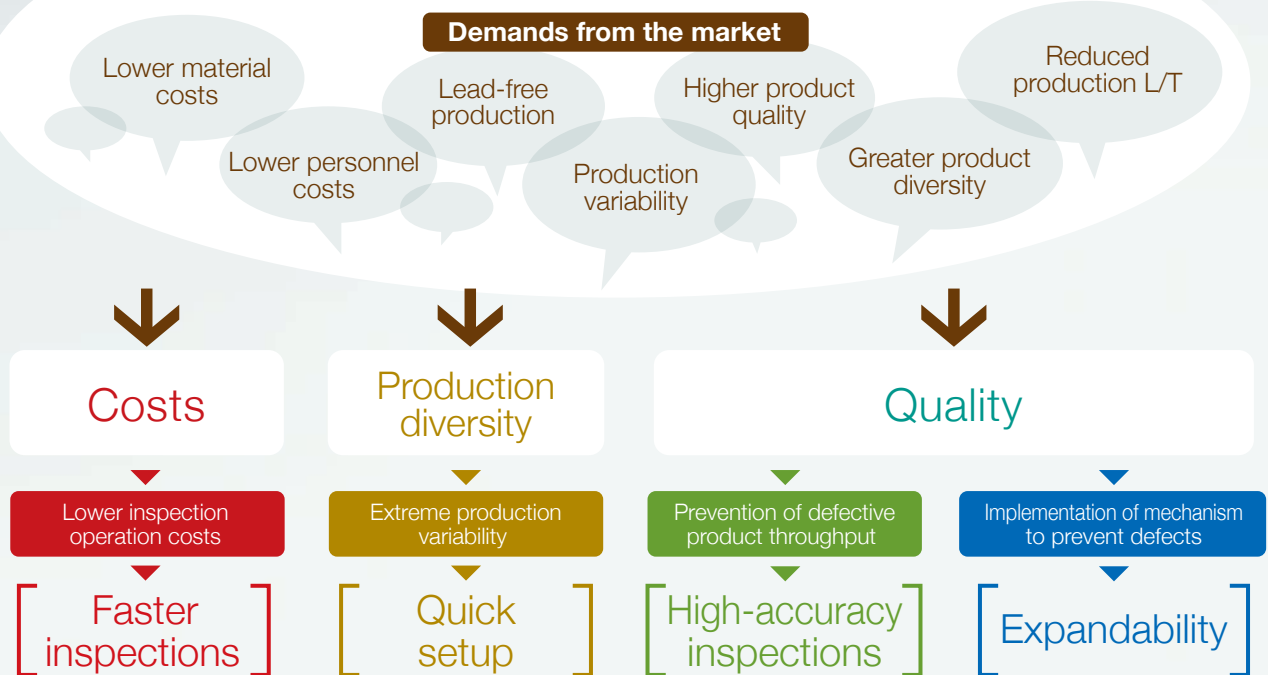EzTS (Ez-image Teaching) system makes setting-up easy for anyone

[Highly Accurate]

Omron's 3CCD camera and Color Highlight Technology provide the most accurate inspection capability.

3-CCD camera plus Color Highlight system

[Expandable]

Omron has the expertise to boost your production efficiency.

Q-upNavi provides total support for process improvement

Addresses a range of issues throughout the surface-mounting industry.

Demands from the market

Lower material costs

Lower personnel costs

Lead-free production

Production variability

Higher product quality

Greater product diversity

Reduced production L/T

↓ | ↓ | ↓

Costs

Production diversity

Quality

| Lower inspection operation costs | Extreme production variability | Prevention of defective product throughput | Implementation of mechanism to prevent defects |

[Faster inspections] [Quick setup] [High-accuracy inspections] [Expandability]

The RNS Series continues to address demands for "true production efficiency" for advanced PCBs.

World Class Engineering Support

Omron has built a global support organization for our customers with sales and service offices in some 70 locations covering the major manufacturing centers around the world. Regional coordination ensures consistent, high quality support where ever you choose to set up production. Services are tailored to your needs and include technical support and training in system setup, operations and maintenance.
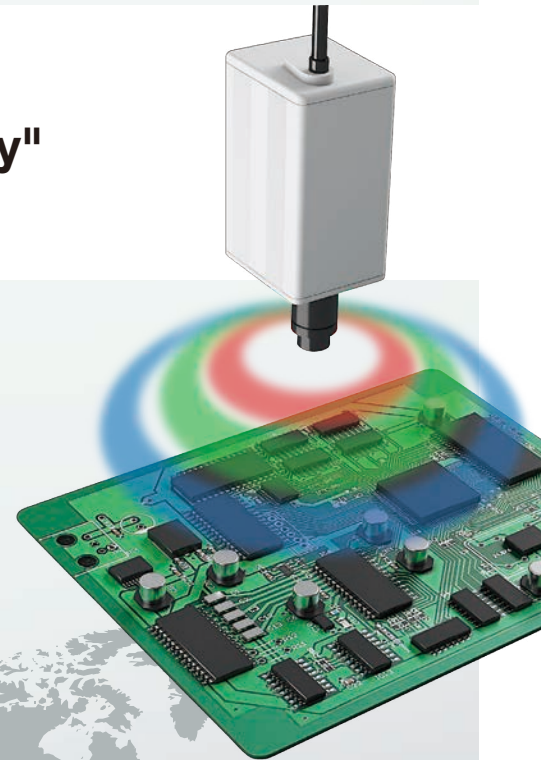
Maximize your SMT line throughput with the use and highly accurate inspection capability.

Fast production system startup and stable operation with no downtime. Inspection system performance is the key.

The VT-RNS II delivers outstanding performance at every step of production. Easy-to-set initial inspection parameters are ready for immediate use to perform high accuracy inspections. Data collected from the inspection stations can be analyzed for root cause analysis of defects for ongoing process improvement. Omron gives you the tools to increase productivity on your PCB assembly lines.
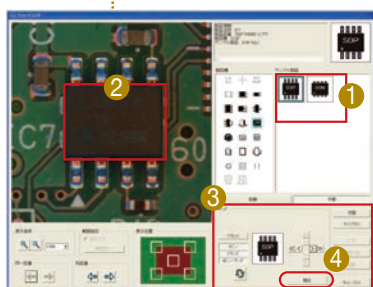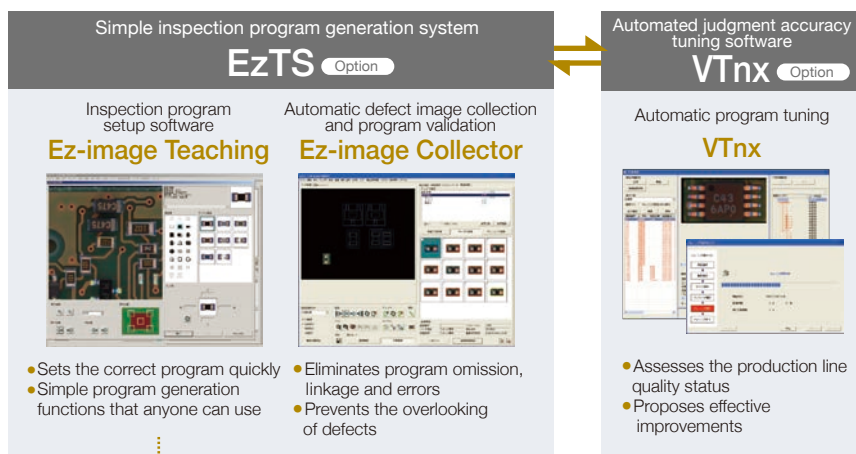
1 Program setup
Create inspection programs quickly for immediate line operation

2 Inspection
20% Faster, high

[Quick Setup]

Features EzTS for simple automated generation of inspection programs

The easy-to-use Ez-Image Teaching (Ez-IT) inspection program generation software is equipped as a standard feature, enabling anyone to quickly and easily create inspection programs tailored to the PCB. The software also validates the inspection programs so that they can be implemented on the production line without delay.

Simple inspection program generation system **EzTS** (Option)	Automated judgment accuracy tuning software **VTnx** (Option)
Inspection program setup software Ez-image Teaching	**Automatic defect image collection and program validation** Ez-image Collector	**Automatic program tuning** VTnx

- Sets the correct program quickly
- Simple program generation functions that anyone can use

- Eliminates program omission, linkage and errors
- Prevents the overlooking of defects

- Assesses the production line quality status
- Proposes effective improvements

Ez-image Teaching
Simple program generation procedure

1. Select the most appropriate model.
2. Match it to the component shape
3. Adjust the angle, etc
4. Run

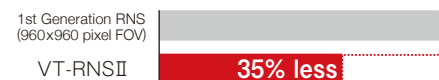* Note that this is not supported for some PCBs. Contact your Omron sales representative for details.

[Faster]

Improved image processing for faster

In addition to processing faster than that of conve also features revamped imaging processes to achie This enables the system to cope with the most dema

Processing Speed compared with first ge

1st Generation RNS (960x960 pixel FOV)
VT-RNSII **35% less**

1st Generation RNS (1280x1024 pixel FOV)
VT-RNSII **20% less**

* Only on post-reflow inspection systems. Effectiveness varies dependi
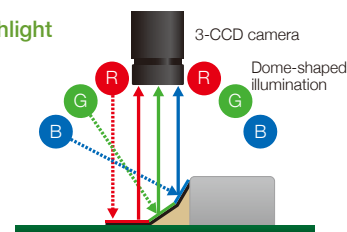* Inspection speeds for post-printing and post-placement models are e

[Highly Accurate
Uses Omron's 3-CCD and Color High

Omron pioneered the development of 3-CCD and in PCB inspection systems to obtain correct mea of inspection accuracy.

Color Highlight system

3-CCD camera
Dome-shaped illumination
R R
G G
B B

e of quick setup

3 Process Improvement
Root cause defect analysis for a Process Improvement Support System

ly accurate inspection system
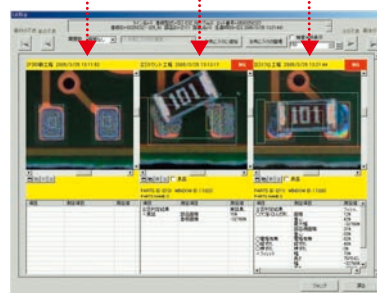
[Expandable]

Q-upNavi provides total support for process improvement, root cause defect analysis and countermeasure implementation

Q-upNavi is quality control software that analyzes inspection results and provides feedback to the production line. This software enables operators to implement corrective procedures that will prevent future defects from occurring regardless of their level of experience or expertise.

Process Improvement Support System

Q-upNavi ⟨Option⟩

post-reflow inspections

entional models, the VT-RNSII
ve significantly faster outcomes.
anding production environments.

eneration VT-RNS

→ **Advantages of higher speeds flow through to all production processes**
Increased speeds enables the use of higher magnification inspections for the ever increasing density of printed circuit boards.

g on the PCB inspected.
equivalent to conventional models.

Solder printer · Mounter · Reflow oven

]

light Technology

d Color Highlight Technology
asurements with high levels

Dome-shaped illumination — 3-CCD camera

Q-upNavi process comparison and analysis

The Color Highlight technology provides a way of obtaining accurate information on solder joint angles in the form of image data.

Q-upNavi helps you implement procedures to ensure that defects do not occur.

Configuration/Specifications

Hardware Configuration

		M size	L size
		P/Z/S	
Image signal input unit	Camera	3-CCD camera	
	Illumination	Ring-shaped LEDs (R, G, B)	
	Image resolution	10, 15, 20 μm	
Main unit	Feed method	Belt	
	Line height	900±15 mm	
	PCB carrier width adjustment	Automatic	
PCB fixing method		Outer frame	
Power supply		AC100 / 115 V / 120 V / 200 V / 220 V / 230 V / 240 V ±10% (single phase)	
Air		0.4 to 0.6 Mpa	
Ambient operating temperature		+10 to +35°C	
Ambient operating humidity		35 to 80% RH (with no condensation)	
Weight		Approx. 500 kg	Approx. 650 kg
Dimensions		700(W)×900(D)×1,600(H) mm (Excluding Patlite signal tower)	920(W)×1,365(D)×1,600(H) mm (Excluding Patlite signal tower)

Functional Specifications

		M size			L size		
		P	Z	S	P	Z	S
Inspectable PCBs	Type	Post-printing	Post-placement (before reflow)	Post-reflow	Post-printing	Post-placement (before reflow)	Post-reflow
	Dimensions	50(W)×50(D) to 333(W)×255(D) mm			80(W)×50(D) to 510(W)×460(D) mm 80(W)×110(D) to 510(W)×460(D) mm (with PCB warpage correction unit)		
	Thickness	0.3 to 2.5 mm			0.3 to 3.0 mm		
Clearance		Above PCB: 20 mm (0.79 in) (standard), 40 mm (1.57 in) (optional) Below PCB: 40 mm (1.57 in)			Above PCB: 20 mm (0.79 in) (standard), 40 mm (1.57 in) (optional) Below PCB: 50 mm (1.97 in)		
Inspection items		Presence of solder, insufficient/excessive solder, solder shifting, grazing, bridging, spreading, leaking	Presence of solder, component shifting, polarity error, missing components, wrong components, solder balls, skewing, bridging, foreign objects	Presence of solder, wrong components, missing components, bridging, lifting, component shifting, fillets, wettability, lead bending, adhesive, solder balls	Presence of solder, insufficient/excessive solder, solder shifting, grazing, bridging, spreading, leaking	Presence of solder, component shifting, polarity error, missing components, wrong components, solder balls, skewing, bridging, foreign objects	Presence of solder, wrong components, missing components, bridging, lifting, component shifting, fillets, wettability, lead bending, adhesive, solder balls
Number of inspection points		40,000 lands/PCB max.	10,000 components/PCB max.		40,000 lands/PCB max.	10,000 components/PCB max.	
Data storage		Computer hard disk					
Component-specific inspection data library		Component types, groups, variations					
Inspection result output		PCB name, PCB ID, component name, type of fault, etc.					
Communications		Ethernet, RS-232C					
PCB feed mode		Through, turnback					
Reference position		PCB feed direction: left or right (selected at shipment); Longitudinal: Front or back (selected at shipment)					

Dimensions

M Type / L Type (Unit: mm)

- This document provides information mainly for selecting suitable models. Please read the Instruction Sheet carefully for information that the user must understand and accept before purchase, including information on warranty, limitations of liability, and precautions.
- This product may cause interference if used in residential areas.

Authorized Distributor: