

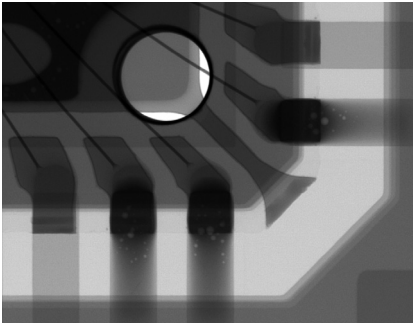
Quality Inspection  
for the Very Best  
Reliability, Detail  
and Innovation



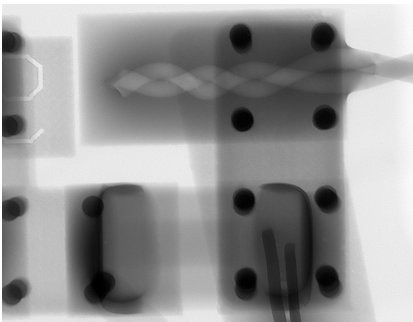
### **X8011-III**

Offline X-ray system for manual and  
automated inspection

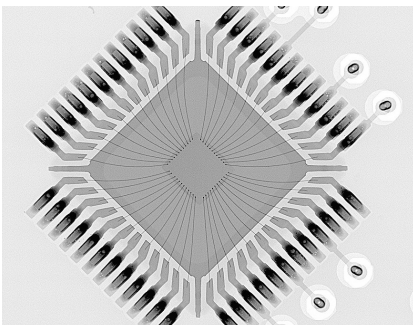
# Best Inspection Results Thanks to Maximum System Flexibility



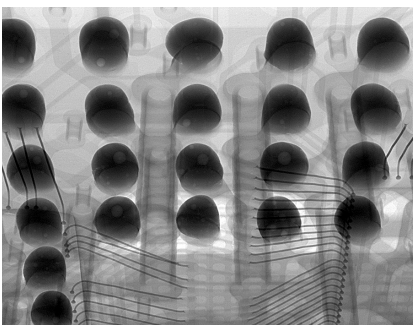
Partial view of a QFN



Detail of a medical product



Chip component with orthogonal radiation



BGA with partially defective solder joints

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**Outstanding resolution and magnification, brilliant and detailed X-ray images**

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**First-class system components: powerful X-ray tubes and high-quality flat-panel detectors**

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**Highest system flexibility and perfect test piece handling**

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**Viscom software XMC and SI: easy system operation, rapid inspection plan compilation, extensive analysis tools**

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**3D reconstructions with XVR computed tomography (CT) from Viscom**

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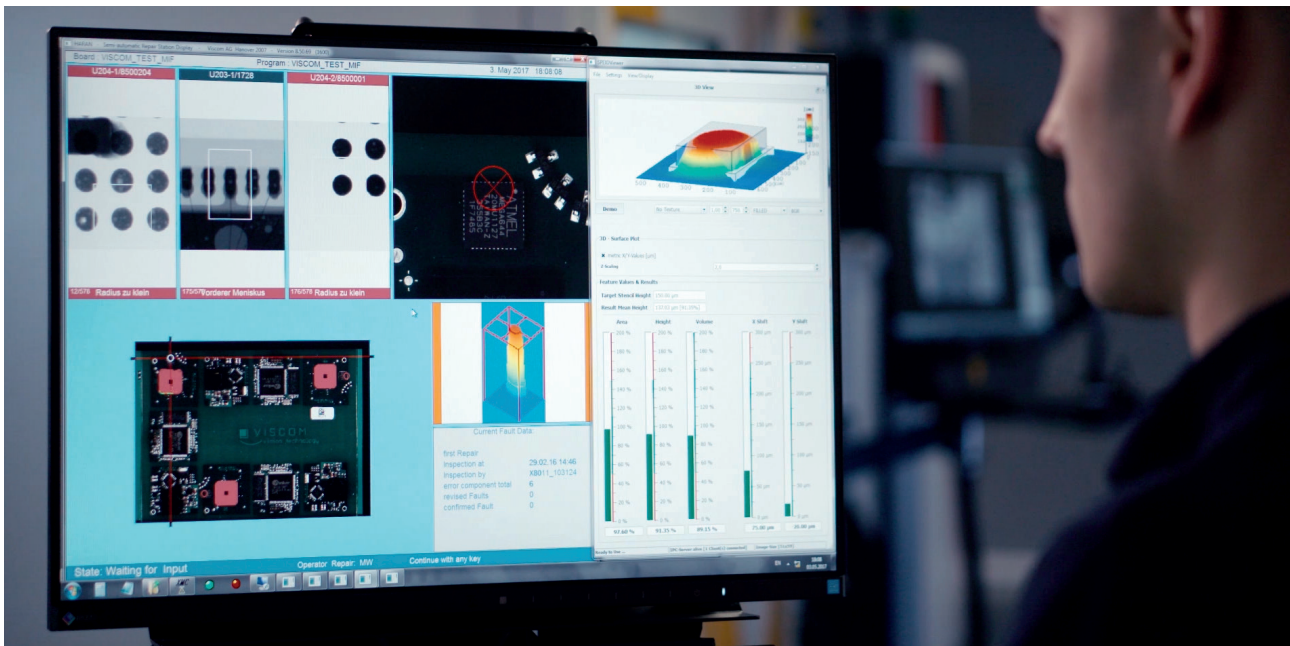
**Viscom Quality Uplink for optimizing costs, while ensuring process reliability and enhancement of product quality on a lasting basis**

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**Worldwide service and application support at the customer, by phone and remote maintenance**

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Adequate visual inspection of connections of SMD components such as BGA, QFN or QFP is impossible. They remain largely hidden. The same applies to surface soldering in power electronics. Above all, these must also be flawless inside to ensure reliable heat dissipation. Special inspections – for example to rule out assembly errors in a prototype or to document a complaint – should also be as non-destructive as possible. In many such cases, optimum quality assurance and defect analysis can only be achieved via X-ray. Here, a modern offline system offers a wide range of possibilities. As with other inspection technologies, Viscom has state-of-the-art solutions ready for the most demanding requirements.



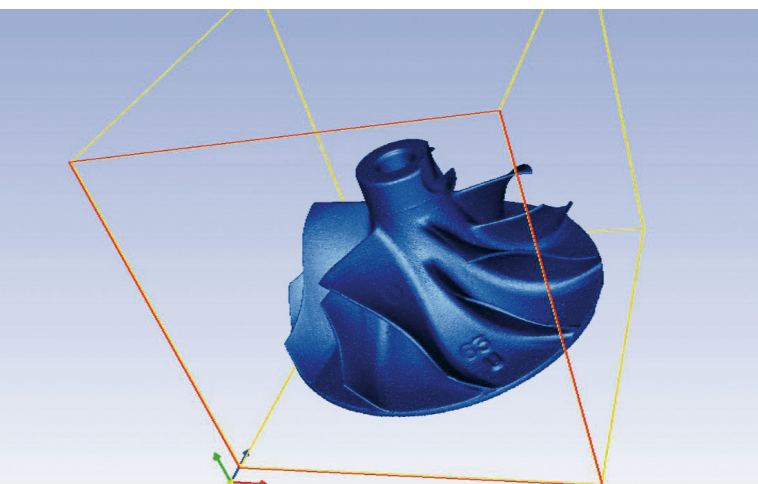
**The inspection results of the X8011-III system can be linked and evaluated with images and data from SPI, AOI and AXI for precise defect analysis and process optimization using Viscom Quality Uplink.**

At the verification station of the X8011-III, it is possible to call up inspection data from the 3D solder paste inspection and the post-reflow systems (AOI and AXI) in addition to the **sharp and detailed MXI images** in order to trace the causes of defects even more quickly and reliably. **Fully automatic X-ray analyses** can be carried out on the X8011-III just as effectively as is familiar from inline assembly inspection in large-scale SMD production. This makes the system ideal for **offline quality inspection of medium quantities and small batches**, among other things.

For very special components and other demanding special inspections, **XMC software from Viscom** provides the appropriate tools on the system. The application range of the X8011-III thus extends from random test piece analysis and inspection of individual devices, assemblies and components to automated start-up support for new product series and efficient quality control in **high-mix, low-volume production**.

**Extensive analysis functions and intuitive operation** enable simple and precise inspection. If individual sectional images or layers from 3D reconstructions are required for even better localization of defects, Viscom's unique **XVR computed tomography** comes into play on the system. The optional **XMC Inspection Report** add-on in turn automatically generates documents with inspection images and important information such as the settings of the X-ray tube and detector, manufacturing defects detected on the inspection object, or the **level of radiation dose** in order to comply with limit values even for sensitive components.

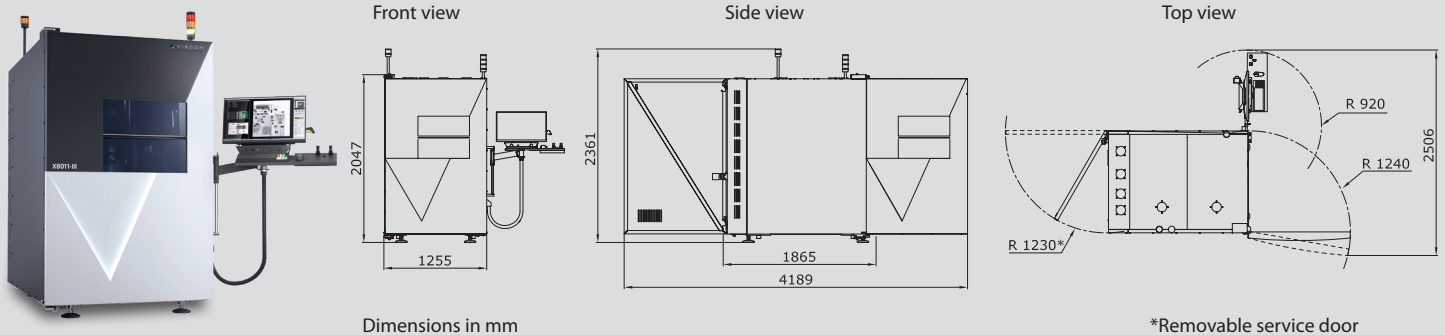
An open **microfocus transmission tube (up to 200 kV)** from Viscom ensures really high resolution in the system. A closed direct beam tube (up to 180 kV) is also available. In continuous operation, both tube types impress with their **very stable X-ray radiation**. Thanks to **state-of-the-art digital flat-panel detectors**, perfect image quality is achieved even at the highest magnifications.



XVR CT analysis: volume image of a turbine



# Technical Specifications



		X8011-III <i>eco</i>	X8011-III <i>plus</i>	X8011-III <i>flex</i>
X-ray technology	X-ray tube	Sealed microfocus X-ray tube or open microfocus transmission tube (optionally also TXD X-ray tube, < 1.5 µm)		
	High voltage	20 - 130 kV (up to 180 kV optional) / 20 - 160 kV / 20 - 200 kV		
	Tube current	50 - 300 µA / 5 - 1000 µA		
	Target power	Max. 20 W / max. 40 W		Max. 40 W
	Geometric magnification	Max. 35 times / max. 2650 times		Max. 2650 times
	Image converter	High resolution 7.3" FPD, 14 bit		High resolution 11" FPD, 14 bit (optional 16 bit)
	Verified resolution (at 90 kV/80 µA)	< 16 - 50 µm / < 4 µm / < 1.5 µm		
	Detector swivel range, additionally via rotation and tilt axis +/- 45° (90°)	0°	0° - 60°	
	X-ray cabinet	Designed to meet requirements for fully protected devices in accordance with German Radiation Protection Act (StrlSchG), German Radiation Protection Ordinance (StrlSchV), CE mark and additional international standards for worldwide use. Radiation leakage rate < 1 µSv/h)		
Software / system computer	User interface	Viscom XMC / Viscom SI optional		
	Available software packages	Analysis software (BGA, QFN, THT, ACA); fully automatic Viscom SI analysis software; automatic inspection report; XVR CT software (planar, rotational); layer image analysis; Viscom HARAN and vVerify verification station; Viscom Quality Uplink to SPI, AOI and AXI from Viscom; Windows® (system computer operating system)		
	Monitor	High-resolution 27" LCD display for special depiction of grayscale values in the SMT and electronics sectors (DICOM Standard)		
Inspection object handling	Manipulator	X-Y-Z	X-Y-Z plus rotating platform	
	Max. travel range of table	Horizontal x/y axis: 460 mm x 435 mm (18.1" x 17.1"); vertical z axis: 290 mm (11.4")		
	Max. travel range of rotation module	-	Horizontal x/y axis: 350 mm x 430 mm (13.8" x 16.9") Vertical z axis: 290 mm (11.4"), n x 360°	
	Inspection object weight	Up to 10 kg / 22 lbs (5 kg / 11 lbs with rotation module)		
	Test piece change	Motorized window opening		
	Optional additional axes available	Yes		
Other system data	Power requirements	400 V (other voltages on request), 3P/N/PE, 16 A		
	System dimensions	1255 mm x 2047 mm x 1865 mm (49.4" x 80.6" x 73.4") (W x H x D)		