

For immediate release



## MIPS 2.0 – New and advanced version of MatriX Inspection and Process Software MIPS for automatic x-ray inspection

Feldkirchen, October 29<sup>th</sup>, 2009 – The well-established MatriX proprietary MIPS software unit is an integrated solution for the whole automatic x-ray inspection process. MatriX now presents the latest version MIPS 2.0 which was significantly enhanced to meet all increased technology and flexibility requirements in today’s production. The new software capabilities concern: an automated test mode selection for optimum test coverage – an improved CAD import allowing automatic program generation with no or only insufficient CAD data available, optimized parameters for tuning and result generation, new or improved algorithms for BGA, QFN, PTH, off-axis and devices in any angle position. One highlight is the classifier Smart Rules function for reliable rule generation without existing defect data.

With the new test mode selection it is now possible to address each joint of a device with its optimum test method. This means that x-ray images can contain pin- and fragment related transmission or off-axis shots or SFT (Slice-Filter) image sequences combined in a “mixed” mode. In addition a multiple inspection with two different inspection techniques is now possible for particularly critical defect spectra (as e.g. BGA head in pillow). This increases the test coverage of double sided reflow assemblies significantly.

With the release 2.0, the new MIPS\_Classifier and Process Analysis Tool (“ARGUS”) was extended by essentially. The manual and automatic generation of rules now features the new **Smart Rules** function. In general a sufficient quantity of test boards with good and defect joints is necessary to be able to generate reliable rules. With Smart Rules a quick and flexible generation of rules based on a very small number of test boards (>=1) is possible.

“ARGUS” now disposes of a signal-level display for optimization of measurement values and test rules – evaluating the measurement values depending on their “signal/noise ratio” for the good and bad process thresholds. This means

that the measurement value that is most suitable for a defect type is automatically determined by the “Sigma” Process Tool.

The new MatriX x-ray inspection system **X2.5D-Plus** is capable of automatically shooting transmission images as well as the related off-axis images with the “mixed mode” feature that is now available for the inspection of devices. When verifying a defect image with MIPS\_Verify the related off-axis image or selectively a slice-filter image of the related joint can be displayed in parallel. This display is of essential support for the operator when evaluating e.g. BGA bumps.

The algorithm library integrated to the MIPS 2.0 Software was upgraded with new and improved algorithms, which now support analysis of off-axis images and devices in any angle position. The new PTH algorithm of the 2.0 Version is capable of a fully automatic analysis of land, barrel and solder destination. The new circular slope measurement principle that is now applied in the BGA and QFN algorithms leads to essentially improved test coverage – allowing a reliable detection of critical “head in pillow” BGA defects.

The process cycle between inspection modules and inspection techniques was time optimized which leads to an increased in-line performance especially when inspecting sophisticated double-sided boards.

**About MatriX Technologies:**

MatriX Technologies is a global supplier of innovative solutions for x-ray inspection and non-destructive testing (NDT). The MatriX systems are based on leading-edge x-ray and vision technology and ensure the fulfilment of customers' quality requirements. The MatriX Technologies product portfolio encompasses real-time failure analysis, including standardised systems for manual and automatic x-ray inspection, as well as customised, fully integrated inspection solutions with a broad range of x-ray applications. The MatriX client base includes leading manufacturers in the electronics and automotive industries. More information about the company you will find at [www.m-xt.com](http://www.m-xt.com)

**Contact to MXT:**

Stefan Wunderlich  
[stefan.wunderlich@m-xt.com](mailto:stefan.wunderlich@m-xt.com)

**MatriX Technologies GmbH**

Dornacher Str. 5, 85622 Feldkirchen (Germany)  
 Phone +49 (0)89- 18 94 140-0  
 Fax +49 (0)89- 18 94 140-99  
 E-mail: [info@m-xt.com](mailto:info@m-xt.com)  
 Web: [www.m-xt.com](http://www.m-xt.com)

**Press Contact:**

Petra Marth  
 Phone +49 (0)89-54 78 22 52  
 Mobile: +49 (0)170-58 69 807  
 Email: [presse@m-xt.com](mailto:presse@m-xt.com)

neoma | PR/Marketing Kommunikation  
[www.neoma.de](http://www.neoma.de)

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