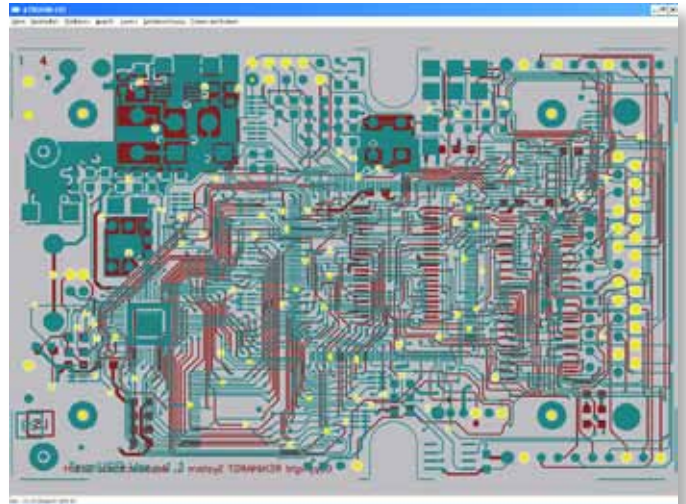


# Software-Modules

## "ATSGERB" – Software for Processing Gerber Data – for REINHARDT- test systems only

**This software is for building fixtures and for graphical display on screen**

GERBER data are the only common standard of CAD-systems as they are provided by all common systems. This is why we use these data, which are more or less made up of single vectors for re-computing complete conductor tracks with component drillings and plated-through holes. Up to 12 (optional up to 255) layers can be displayed graphically on screen, computed and edited. In this way, you can find out about the contactability of an assembly as fast as you can find out the necessary number of spring contacts. Apart from that, you can create a drilling program for a bed-of-nails fixture (even multi-use). The software checks if all tracks of the test item can be contacted from one side and checks the spacing of the test points. It creates the graphical data for displaying the defect location as well as the data for solder defects. The complete procedure for processing the data, displaying the assembly, creating tracks and drilling data takes about 10 minutes for a middle-sized assembly.

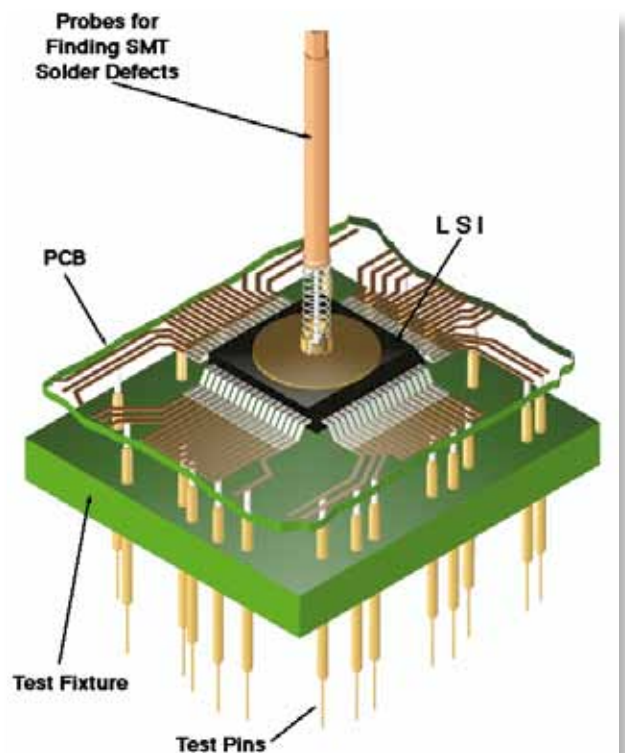


Compared with the manual proceedings that have been necessary up to now, you need about 2 to 3 weeks less now.

Order: Software for Dealing with Gerber Data

## Software for Finding SMT IC Solder Defects and for Discerning Elcap-Polarity – for REINHARDT-test systems only - Software for Displaying Solder Defects on Fine Pitch LSIs and BGAs Graphically to the Very Pin

This software is used for finding SMD IC solder defects and for creating programs fully automatically. Capacitive probes which are applied to ICs are used for automatic evaluation. A selective amplifier board, 16 channels per board and a maximum 16 boards which are mounted into the fixture, amplify the measured signal selectively. The spring-loaded and shielded probe is applied to the IC from above. When all IC inputs have been set to ground, you can trigger pin for pin with a signal of 8 kHz below the threshold voltage. With the probe applied from above and the selective amplifier, capacitance is measured in the fFarad range. A solder defect, even on SMT-ICs with Fine Pitch pins is clearly found in this way. Such a task is programmed automatically in a very short time, even for complicated boards with more than 100 ICs. The defective solder pin is automatically displayed on screen. With this method you can also test connectors for missing pins.



**REINHARDT System- und Messelectronic GmbH**

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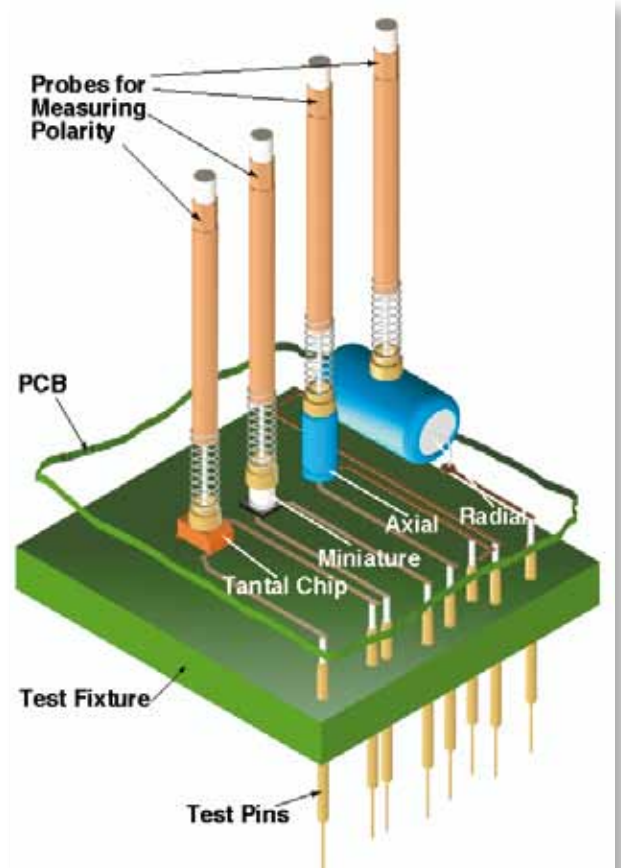
# Software-Modules

## Software for Displaying Polarity Defects of Elcaps, even SMT, to the Component

With this software you can discern polarity of electrolytic or Tantal capacitors (axial and radial) when they are already assembled. Ground or a sine signal resp. are applied to the polarised capacitor. For measuring the coupling (signal strength), a spring-loaded, shielded probe is applied to the capacitor housing. With a selective amplifier board, the small signal is amplified. The amplitude of the signal is evaluated by applying the signal alternatingly. There is an obvious difference between a minus and a plus signal (The signal is obviously higher at minus-application than at plus-application). The same method is used for finding missing capacitors at blocking of ICs or for switching small capacitors in series with elcaps.

This software can only be used together with ATSGERB software and the following hardware: REINHARDT In-circuit test system, polarity board, IC-Open board (SMT solder defect test) and shielded probes.

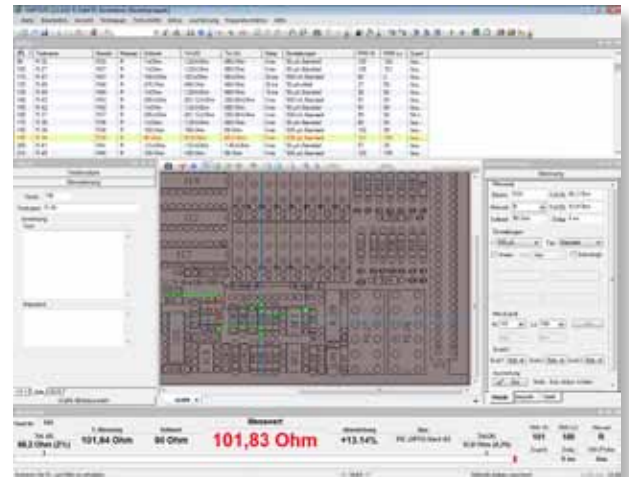
Order: Software for Finding SMT IC Solder Defects and for Discerning Elcap-Polarity; this software only works together with ATSGERB software.



## RDR- Software for Offline Repair of Assemblies with Networking – for REINHARDT-test systems only

With the RDR670 repair station software, the test system need not be used for repair so that there is higher throughput of devices under test. This software uses the statistical data of the PCBs. Working with an offline repair station is only possible if the devices under test are clearly identified by a number or a text, such as e.g. a serial number. In the statistics data the number of repair runs is recorded and added so that the person who repairs soon notices how often this PCB has already been repaired. After every successful repair, the identification mark is deleted from the list of serial numbers so that it is no longer mentioned to the person who repairs. A PCB is successfully repaired if it goes through a successful test run on the test system. For the RDR670-software we recommend a Pentium III-PC with at least 700 MHz and 32 MB graphic board and 256 MB RAM or bigger. The software is networkable so that there is access to data on a central server.

Order: REP-Station WIN



## Open Database Connectivity – ODBC-Interface (Option)

Sometimes the REINHARDT-test system is integrated in quality management or production procedures with data base management. By default, statistics data can be interpreted separately and supplied for processing in a data base with the Export function of the statistics software. An interface of the REINHARDT-test system to the data base grants further facilities. The data transfer can be configured so that the data base management system can process the information for

**REINHARDT System- und Messelectronic GmbH**

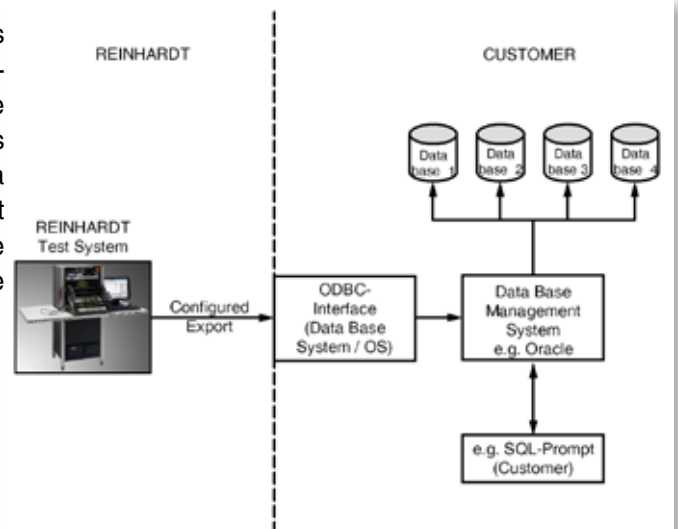
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# Software-Modules

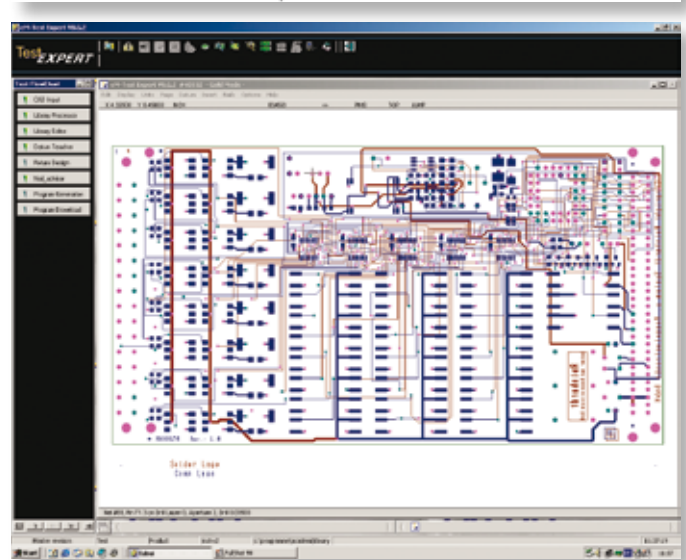
quality management, statistics, etc. The required data base is selected with the ODBC-interface and a connection text is generated. In the test run, this text is used for selecting the data base where the data are stored. Then the table is chosen which stores the data. For that you may use an existing table or generate a new one. When the table is selected, its field are listed so that only the data sources must be assigned. If the name of a table which does not exist yet is entered, the required fields must be selected and connected to the data sources

Order: ODBC Software



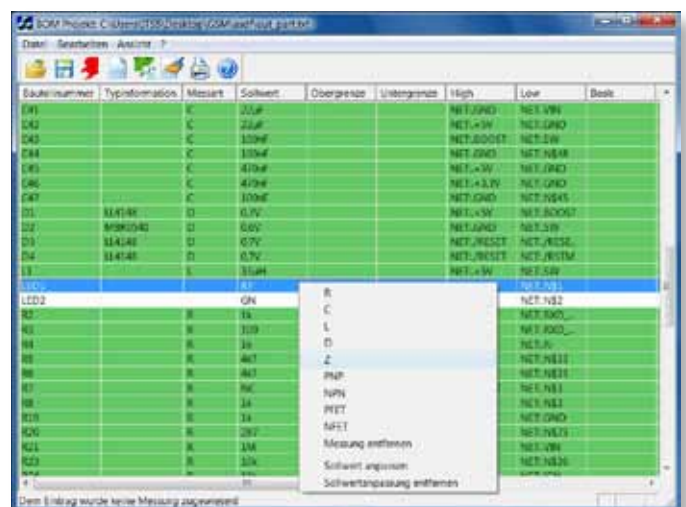
## CAD-Interface for Data Transfer for REINHARDT-Test Systems

Together with Reinhardt System- und Messelectronic GmbH, Tecnomatix (formerly Fabmaster) has created a software which generates data out of the data of CAD-systems or even of bills of materials which can then be used for programming insertion machines and automatic test systems. The CAD-data of about 65 different CAD-systems such as e. g. ACCEL, Eagle, Integra, Mentor, Orcad, PADS, PCAD, Protel, Redac, Topcad, Unica or Zuken can be converted for ATS-KMFT 670 in only a few steps. The test programs of ATS-ICT 450, MFT 480 and MFT 500 can be accepted by ATS-KMFT 670, the ATS-KMFT 460, 470 and PCMFT 600 test systems can be updated. Apart from the REINHARDT in-circuit test system, you can also address e. g. an AOI via this interface. Tecnomatix call this software eMPower PCB Assembly and Test. It is a very comfortable solution which of course has its price.



## Eagle-Interface for Taking Over Data for REINHARDT-Test Systems

For the widely used cost-effective Eagle CAD-system for developing and designing PCBs REINHARDT has developed a comfortable interface. Up to now, Eagle-data had to be adapted manually for use in the test system-software. This software tool helps to do this fast and cost-effectively: The software generates a bill of materials and Gerber data which can be displayed. This information is used for generating the graphical data for the display of fault location and the finished framework for the Incircuit test program. After the converted data are imported into the test system software only the automated autolearn tools such as e. g. for pin contact test, shorts and isolation test and the APG in the component editor must be activated. The procedure of the Eagle-data conversion is widely automatic and is finished in a few minutes.



Order: Eagle-Interface



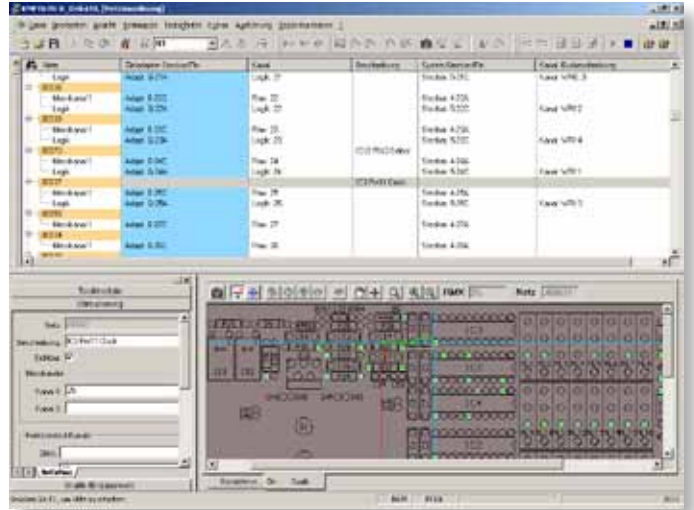
# Software-Modules

## Software for documenting and reconstructing the fixture wiring

Even somebody who does not know the REINHARDT test system and its fixturing, is able to create a 1:1-copy of this fixture. He only needs a common PC with WINDOWS2000/XP® and this software module.

This software also supports you in building a test fixture for the in-circuit and function test. It not only takes into account the known connector allocation of the REINHARDT-test systems, but also typical additional modules which are needed in the function test. They are also taken into account and can also be documented. Faults in the fixture wiring and connections can never be absolutely avoided. Simply clicking on the resp. module or the stimulus and measuring module displays, where the wiring ends, but at the same time all the other stimulus and measuring or external modules which are connected to the point. A crosshairs clearly marks the resp. spring-suspended contact pin, if used.

This software also is for documenting existing in-circuit and function test programs, as it uses the comments/information and assignments of the sources and then creates a wiring plan. In an existing in-circuit test program, the wiring is documented without additional entries by integrating the software for fixture documentation.



Order: Fixture Documentation Software

## Comfortable Listing of Measured Values - Software for Listing Measured Values in Testing Electronic PCBs

Quality control has provided what was necessary for redesigns and for producing the product with less defects. For decisions on redesigning and improving products, quality control must record the test data and possibly defects, to analyse them and improve their manufacturing.

All REINHARDT-test systems can record test listings of all, of defective or of none of the PCB. With our ATS-KMFT 670 test system, this recording is in a clear ASCII-format which can later be read and used by Microsoft Excel® as well as by various quality systems. Listing and later printing is standard and is sufficient for most used. In text, it is nevertheless limited to a minimum of the technicals parameters.

Our so called „Komfortprotokoll“ tool helps you to create your listing with the text and explanations you need. Using the common Word 2003® Microsoft-software opens all ways of word processing - inserting the respective measured parameters. Such a comfortable text-data listing can be created for every single PCB, but also for the complete production. There are two operation modes, the first with full word processing with inserting the respective parameters of one or more test steps which can then be described very exactly by text. The other way is to take over the complete listing block. The editing possibility of the Word2003®-software then helps you to classify them as needed so that every line or every text block is commented (Please turn page).

Especially service providers can then hand on test listings with complete description of the measured parameters to their customers. For quality control, they can also file these listings over the years (product liability) and in case of later liability claims can offer clear statements which can be read or interpreted by people who are no experts or by judges.

Order: Komfortprotokoll SW

# Software-Modules

KUNDENNUMMER: 45376  
Anton Meier AG\*  
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64287 Darmstadt  
Tel. 06151-12345

**Seit 20 Jahren: Entwicklung Hard- und Software, Bauteilbeschaffung, Leiterplattenbestückung, Incircuittest, Funktionstest**

Mustermann GmbH & Co.KG\*  
Am Graben 25  
86120 Augsburg  
Tel. 0821-123456789

## Prüfprotokoll für die Baugruppe DCA41 Version: 2.0, Auftragsnummer: 7092/05

Der Prüfling DCA41, Version 2.0 mit der Seriennummer **1012334** wurde am **Mittwoch, 11. Januar 2006, 14:57:13 Uhr** mit dem Incircuit- und Funktionstestsystem **ATS-KMFT 670** geprüft. Das Testsystem ist kalibriert bis **25.07.2006**. Es wurde das Prüfprogramm **TM\_DCA41-V2** verwendet.

Der Kurzschlussstest wurde mit der Auswertung „**GUT**“ durchgeführt. Die Auswertung beim Lötfehlertest (IC-Pinabhebertest) war „**GUT**“.

Die Ruhestromaufnahme der Leiterplatte liegt bei **102,1mA**.

Der einstellbare Spannungsregler (IC3) wurde auf **24,03V UDC** eingestellt.

Die Strombegrenzung von IC5 liegt bei **1,032A**.

Die Verstärkung des Operationsverstärkers IC9 wurde auf **8,25** Fach eingestellt, wobei die Untergrenze bei **8,0** und die Obergrenze bei **8,5** festgelegt wurde.

Die Messwerte für die NG-Ausgänge IC10, IC11 und IC12 liegen bei:

Testschritt	Testname	Messart	Untergrenze	Messwert	Obergrenze
100	Out IC10 +15V	UDC	14,5	14,92	15,5
110	Out IC10 AC offen	UAC	0,0	0,002	0,010
120	I-Begr. IC10	IDC	1,4	1,523	1,8
130	Out IC10 AC 1,3A	UAC	0,0	0,015	0,025
200	Out IC11 -15V	UDC	-15,5	-15,4	14,5
210	Out IC11 AC offen	UAC	0,0	0,005	0,010
220	I-Begr. IC11	IDC	1,4	1,62	1,8
230	Out IC11 AC 1,3A	UAC	0,0	0,012	0,025
300	Out IC12 +5V	UDC	4,90	5,012	5,1
310	Out IC12 AC offen	UAC	0,0	0,004	0,010
320	I-Begr. IC12	IDC	4,5	4,734	5,0
330	Out IC12 AC 4A	UAC	0,0	0,025	0,040

Name des Prüfers: **A. Huber**

\* Names and addresses are fictitious. Any imilarity with real companies or persons are absolutely accidental.

*E & OE – Specifications subject to change without prior notice. 11/2009*