Modules for Installation in the Test Fixture for Electronic PCBs

In the test bay, the requirements for the In-circuit- and Function test are rising all the time because in the development of new electronic PCBs there are forever rising higher frequencies, shorter switching times as well as rising powers, especially in the DC-range as required in e-mobility. For the In-circuit- and Function test those more and more complex PCBs are contacted via spring contact pins which are pressed into a basic material. From the bottom of the basic material there is a connection from the spring contact pins to the scanner/measuring matrix board. These connections to the measuring unit may easily be 400 mm long and when such a fixture is integrated into an in-line system even 1,500 mm and more. Any experienced technician can imagine that such an antenna or these parallel connections resp. strongly influence a measuring signal at high frequencies. In function test they may even result in non-functions to give just a few examples.In the test and measuring technique it is therefore often necessary to buffer a signal or e. g. divide frequencies via a prescaler. Another REINHARDT module for the creation of a fixture is the programmer-connector module. With a universal test station with test system as supplied by

Test Fixture with Stimulus and Measuring Modules

Fixture Plate

Contact Pins

Programmer

Multi-way Connectors

Programmer-Connector Module

OP-Module

HF-Module
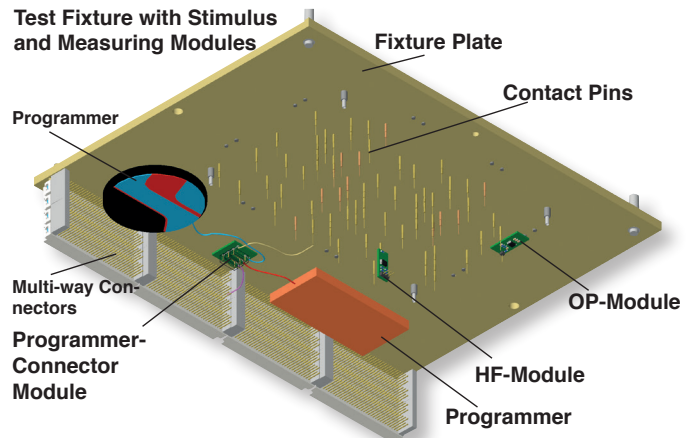
Programmer

REINHARDT, many customers will not be able to cover their whole range of microprocessors with one programmer. Maybe a Boundary Scan/JTAG programmer such as the REINHARDT RBS 100 are used. This module has got several purposes, for one it separates the connections to the measuring matrix board for flashing and selects the resp. programmer. Why this effort? Long antennas reduce the programming speed and another function is that the programmers must be galvanically separated/turned off for the In-circuit test otherwise there will be incorrect measurements.

When building test fixtures for Function test, you often have to adapt it to the test system in such a way that the device under test is not loaded and that its function is secured throughout the test.

We distinguish switching modules with different relays but as well pneumatic contact pins or stimulus modules. There are modules which generate voltages or currents, sine or square wave voltages or pulse frequencies with variable pulse width. The measuring modules make another group. They are used for e. g. transforming impedances, but there are also modules which measure the LEDs of a DUT for brightness and colour value.
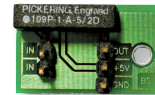
Programmer-Connector Module

To The Contact Pins

JTAG1

JTAG2/RBS100

Control

RMX-Channels
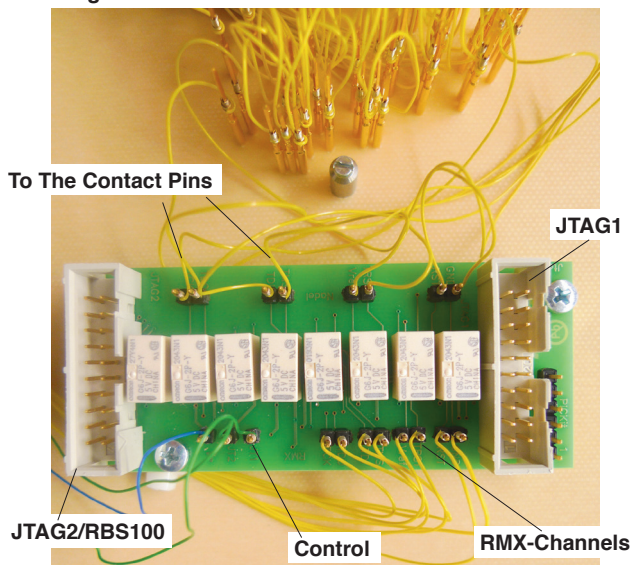
Switching Modules

RelMOD Module

This module switches max. 200 V and 0.5A at 10 W maximum power. There is one normally open contact.

€ 25.00 net

HVRelMOD Module

This module switches operating voltages up to 250 V_{eff} at 5A current. There are 2 normally open contacts.

€ 25.00 net

Pneumatic Contact Pin

This contact pin with 3 mm outer diameter plus receptacle is activated by a pneumatic valve. In this way, a critical joint is only contacted when it is necessary.

€ 25.00 net

Spring Switch Contact Pin

This spring switch contact pin helps you to find out, if a component is loaded or to scan markings or codings. In this contact pin, there is a switch which closes when the contact pin pressed in. The spring contact pin has got an outer diameter of 2.57 mm; a special receptacle is not necessary.

€ 14.80 net

Programmer-Connector Module ProgMOD16

The ProgMOD16-module is used for interconnecting the programming connections. The ProgMOD 16 Programmer connector module is a 3fold exchangeable module for up to 8 connections, in order to either connect an RMX-channel or two different programming connections to the test pin and reduce interferences. There is a connector for up to 2 JTAG-programmers (e. g. J-Link, Olimex, REINHARDT RBS100,…) to directly plug in the programmers. There is also a connector which fits the PICKit2 or PICKit3 by Mikrochip.

€ 140.00 net
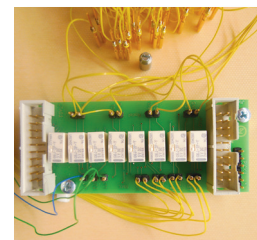
Stimulus Modules

Occasionally, signals must be applied within the test fixture without integrating complete precision sources for current or voltage or generators for sine, square wave or pulse via IEC-bus or other bus systems. The following modules are used for these tasks:

DACMOD Current and Voltage Supplier Module

The module is controlled by I²C-Bus . Depending on the solder straps set before on the module, it generates voltage or constant current. Voltage range is between 0 and 10 V, current range is between 0 and 25 mA. Resolution is 12 bit.

€ 78.00 net

GenMOD Sine and Square Wave Module

The module is controlled by I²C-Bus. The GenMOD creates output frequencies between 1 Hz and 65 kHz. Resolution is 1 Hz. Output voltage in the sine range is 5 V_{pp}, square wave output is a TTL-output.

€ 78.00 net

HFGenMOD – HF Square Wave Generator Module

The module is designed for use in the test item fixture. Output frequency is set via two potentiometers. Various frequency ranges are selected via coding connectors. Maximum output frequency is 30 MHz. Supply voltage is from +4.5 to 5.5 V.

€ 78.00 net

PGENMOD Pulse Generator Module

The module was developed for additional generator stimulating. It can create the following signals: square wave signal on output 1, phase-shifted square wave signals on all three outputs, burst-impulse on output 1 or all three out-puts. The open collector levels of the three output transistors are by standard bridged to +5 V. By applying an external driver voltage and converting a jumper the level can be changed to up to 25 V. Output frequency is programmed from 1.1 Hz–5 MHz via I²C-Bus with a min. pulse width from 50 ns to several hundred ms.
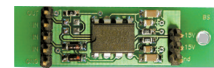
€ 409.00 net
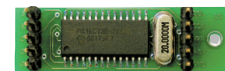
Measuring Modules

OPAMOD Impedance Transformer

This buffer module has got 1 TΩ input impedance at 8 pF. In the +/-10 V voltage range it creates an identical output voltage with a source impedance between 10 and 20 Ω. The impedance transformer can be used up to 150 kHz.
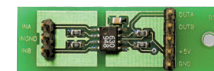
€ 40.00 net

OPTOMOD Opto-Coupler Module

With this module with 2 opto-couplers, digital signals are decoupled and do not load the item under test unnecessarily. Signal amplitude is 0–5 V, maximum usable frequency is 5 MHz.

€ 25.00 net

Signal Converter Modules

HFPKMOD Peak Voltage Measuring Module

It measures peak voltages up to 100 MHz which are then transmitted to the measuring matrix. The measuring result is not influenced by the normal loss of capacity or by the input impedance.
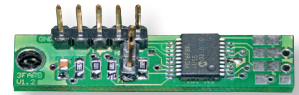
€ 40.00 net

HFMOD High Frequency Measuring and Prescaling Module 1.1 GHz

In order to switch high frequency signals above 25 MHz via measuring matrix boards

and evaluate them with the time measuring unit, this module divides the signals by 128. Maximum frequency is 1.1 GHz at 0.5 to 5 V voltage.
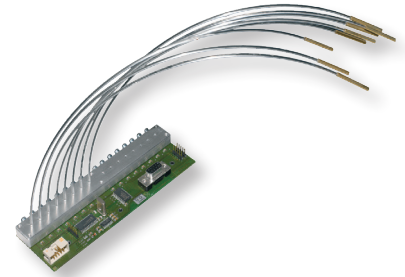
€ 40.00 net

FARBMod LED-Evaluation and Colour Identification
The microprocessor-controlled LED evaluation and colour identification module tests colours (e. g. keys) and LEDs. A sensor with photo diodes separates the spectral colours in the red, green and blue parts. The module measures brightness and chromaticity and evaluates them via I²C-Bus/COM.

€ 350.00 net

## 16FARBMod 16Channel LED-Evaluation and Colour Identification
The microprocessor-controlled LED evaluation and colour identification module tests LEDs of various colours on boards or on the front of devices. It measures brightness and chromaticity and evaluates it via I²C-Bus/COM. The board offers 16 channels. Eight 2 mm strong waveguides are used for transmission. Another 8 waveguides are optional.

€ 1190.00 net

STROMMOD Current Measuring Module
The module is equipped with a shunt and an operational amplifier. The voltage that drops at the shunt is changed into a ground-related voltage. With various shunts or the Gain-resistance, the module can be adapted to the various requirements.
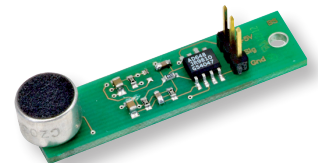
€ 40.00 net
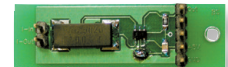
MicMOD Microphone Module
The microphone module checks sounds emitted by the PCB. The module holds a microphone and an amplifier. Its output signal is interconnected to the test system which evaluates frequency and amplitude. Amplification can be set in the steps x1100, x110 (Default), x11.
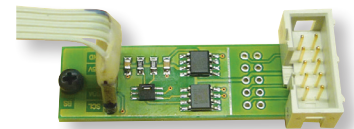
€ 89.00 net

TempMOD Temperature and Humidity Measuring Module
The TempMOD Temperature and humidity measuring module measures temperature from -40 °C to +60 °C with 0.01 °C Resolution and 0.2° tolerante and relative humidity from 10–100 % with 0.04 % resolution and 1.8 % tolerance via the I2C-Bus. The 3.3 V supply voltage is generated by a voltage regulator.

160,00 net

AdapLMXMod

This board is mounted to the exchange plate. The board can be addressed via RS232-interface or I²C-bus via the test system and supplies 8 relays and 2 control bits for the function test. The relays of channels 1–4 can switch voltages of 250 V and currents of 4 A at max. 1,000 VA. The relays of channels 5–8 can switch 16 A at 250 V and max. 2,000 VA. Power switching is available within the fixture plate.

€ 350.00 net
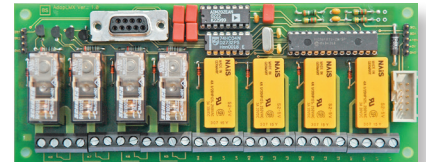
TrigMessModul

The TrigMessMod is for measuring a triggered voltage, i. e. a voltage that is controlled by another signal, in the range between 0–5 V. This measurement is executed on the module. The time of the measurement is triggered via TTL-input and can also be postponed with a programmable delay time.
If the module is slightly modified, the voltage range can also be adapted to smaller or negative voltages.

€ 130.00 net

ADAEEP

A fixture or an exchange plate can be assigned to a project. The assignment is written to an I²C-EEPROM, address 166, on the ADAEEP. When the fixture or exchange plate is changed, the KMFT670/UKMFT-software automatically loads the respective project or warns if a project that is not assigned is to be loaded manually.

€ 38.00 net
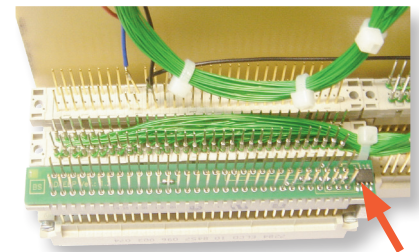
Electronic Actuator M12

The electronic actuator M12 moves keys and switches in case there is no compressed air. The shift of 12.7 mm can be programmed in 170 steps. An integrated worm in the stepping motor changes the rotation into a travel movement.
The actuator module is controlled via I²C bus or via 2 pins which are used for selecting 3 fixed positions.
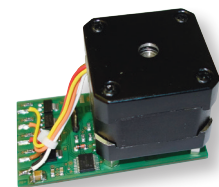
€ 318.00 net

DrehgeberMod

This module turns potentiometers, switches, rotary position transducers etc. under software control. The step motor grants 400 steps (resolution step 0.9 °) per rotation so that any rotation angle can be set. Reference run via forked light barrier. The module is controlled via I²C bus.

€ 450.00 net

Pneumatic Actuator 15–20 N

The pneumatic actuator 15–20 N moves keys supported by compressed air. Its shift is 10 mm. It comes with a 3/2 way valve, pressure regulator and connector plug Festo KS-1/4-S. A 500 mm long hose supplies compressed air with 6 bar. The valve is controlled with 24 VDC. A fixing angle is used to fix the pneumatic actuator to the retention box for REINHARDT-fixtures.
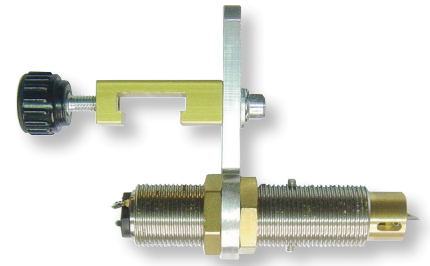
€ 200.00 net
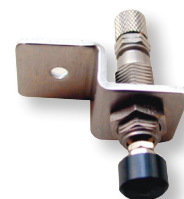
Electric Circle Marker

The electric circle marker engraves the tested PCBs with a circle of 2 mm diameter. It requires 6–12 VDC for control. With a fixing angle it can be secured at the retention exchange box for REINHARDT-fixtures.

€ 298.00 net

SteuerMod-Inline USB-Module

As communication interface to a SPS, the SteuerMod-Inline USB module can be used to integrate a test system into a production line. The module is built into a top-hat rail housing. With a screw clamp it can be connected to an SPS. Its USB-socket is used to connect it to the control computer. A lamp control is integrated. A red light indicates a faulty and a green light shows a faultless test run. Blue shows e. g. a Stop and indicates to the operator that he has to intervene.

€ 890.00 net
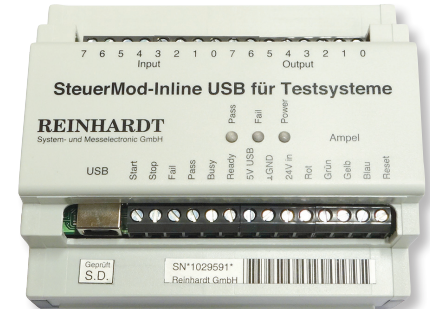
StartStopSteuerungUSB-Module

The Start Stop Steuerung USB-module is a start-/stop key for the ATS-MFT 770/ ATS-KMFT 670, ATS-UKMFT or ATS-PCMFT 620 test systems. Alternative start-/stop impulses can be created with lighted metal buttons which are normally moved by the RETURN/ESC-key on the keyboard or with the mouse. Communication is via USB.

€ 390.00 net

DUT_LED Module Optical Display of Status

When e. g. multiple printed panels are tested it may happen that you no longer know which panel has already been tested and if it was good or faulty. The DUT_LED module can be mounted on the exchange plate. The red LED displays the faulty, the green LED the good test run and a blinking yellow LED displays the busy-mode. A prompt if the test item was removed is also possible. Communication is via the I²C-Bus.

€ 78.00 net
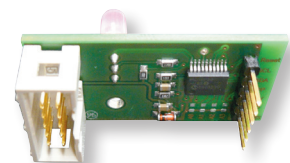
BEE-Module – Recognition if a Board is Placed or Removed

The module recognises if a board (PCB) is placed in the fixture with bed-of-nails or if it has been removed while the fixture was not contacted; retroreflective sensor, class 1M laser (invisible laser radiation, do not view directly with optical instruments), 5 VDC-supply, max. 50 mA, digital output, sensitivity can be set
We recommend the DUT_LED-module for optical evaluation and display.

€ 78.00 net
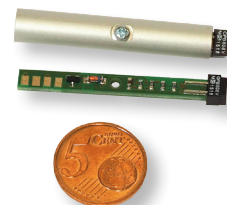
All prices are plus VAT and plus packing and postage. The prices are only valid within Germany and the EC. IE & OE – Specifications subject to change without prior notice. 11/2022