

# UCM - Universal Contacting Modules Total Flexible PCB & Electronic Assemblies Test



The test and programming system UCM enables all essential test processes in the production of printed circuit boards (PCB) and electronic assemblies. UCM can be adapted easily, flexibly and extended to various products and test scales, modes and production concepts. Modularity, flexibility and reusability of the test modules reduce testing costs and protect the environment.

## UCM for PCB and Electronic Assemblies

UCM for testing of assembled / not assembled printed circuit boards (PCB) and UCM for the testing of electronic assemblies (EAS) are the basic models, integrated in the following configurations of production:

### UCM basic

The single version UCM basic (UCMb) is available as UCM cabinet-mounting module and UCM cabinet installation module. UCM basic is suitable for manual and automated assembly and discharge from the front or rear of the module. The contacting is possible from one side and / or double-sided. For changing the assemblies the down holder and tray are designed as simply interchangeable adapter. As mounting / installation module they are integrated into 19" switch cabinets with up to 38 rack units for measuring instruments, such as 19" emergency off box, Industry PC (IPC).

### UCM inline

The line concept UCM inline (UCMi) is offered as a UCM docking module and UCM line module. UCM inline adapted by manual or automatic tape track width adjustment for different PCB / modules in different production concepts connectable. Positioning and connection of modules are on the conveyor belt.

### UCM robotics

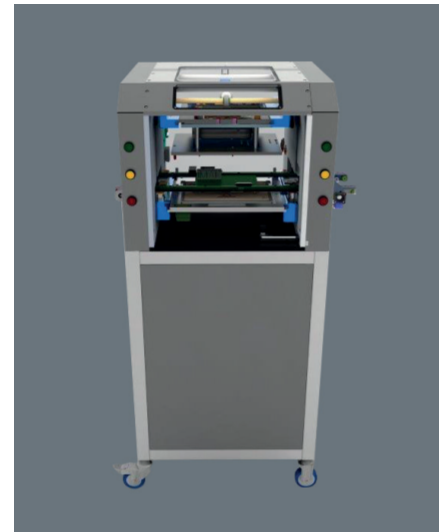
UCM robotics (UCMr) are automated test cells with a minimum of four docking positions via standardized interfaces for UCM basic and / or UCM inline. The cells increase productivity through innovative optional features:

Double gripper handle in a position two steps.

Smart cameras calibrated to the respective modules and position the robot automatically (without teaching) in case of changing the assemblies / adapter. Energy measurement systems deliver OPC UA data for maintenance and optimized control of the entire system.

UCM be used flexibly in subsequent testing / machining processes and can be supplemented to special requirements by using additional equipment (ADE).

Test process / processing*	UCM configuration			UCM equipment PCB / EAS / ADE
	basic	inline	robotics	
In-circuit test	•		•	PCB: IPC, measurement
Function test	•	•	•	PCB / EAS: IPC, Power supply, measurement, multimeter, oscilloscope, function generator
High voltage test		•	•	PCB: IPC, high voltage power supply
Hot function test	•	•	•	PCB / EAS: See function test ADE: Temperature chamber
Flash	•	•	•	PCB / EAS: IPC, $\mu$ C device dependent
Resistance test	•		•	PCB: IPC, measurement
Pin check		•	•	EAS: IPC, measurement
Leakage test	•	•	•	EAS: Pressure vessel, measurement e.g. ATEQ
Laser marking*	•	•	•	ADE: Temperature laser, e.g. Trumpf, Keyence
Load test				ADE: IMAK load test device
Robohandling*			•	ADE: Cell with handling system, e.g. Yaskawa, Stäubli, Fanuc



UCM basic - UCM single module with standard interface for connection to test cells



UCM inline – UCM single lines module upgradeable to module line and connectable to robot cells qua standard interface



UCMr: UCM demo robot cell with docked UCMi and UCMb for PCB (l. b. & a.) and UCMb for EAS (r. a.) and heating chamber with conveyor (below)