Procket Platform

Etteplan

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Procket Platform

Most modern product organizations understand that production testing is a priority and necessary when preventing significant quality issues in products that represent a company's brand. However, the amount of work to guarantee quality can be significant if there is no easy and well-established way to measure the quality of products in manufacturing and its positive business effects. A key factor in measuring quality is a high-quality test system and its development, implementation and maintenance. The design and development of automated testing equipment brings with it various challenges from initial design to final integration. The fundamental design and standardization of the testing system, i.e. the platform, furthers development and helps to avoid risks. At Etteplan we have based our design and development of automated production test systems on our own Procket platform since 2005.

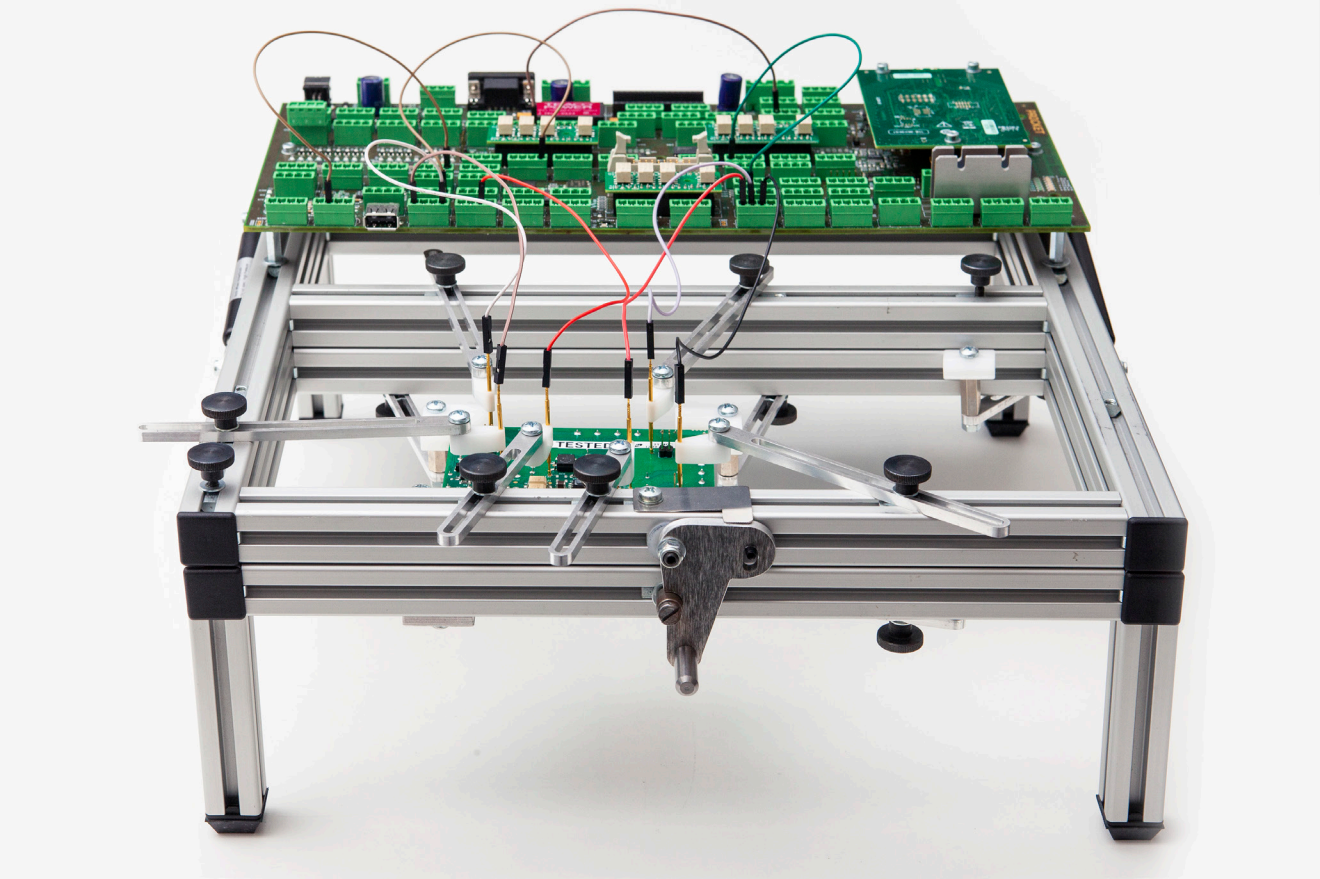
Procket platform is a scalable solution starting from a simple R&D solution all the way up to mass production test systems. The core of the platform is NI Labview and TestStand based software which build a link between the executive test program, instruments and interfaces. Our platform is flexible for the selection of instrumentation and it will always be optimized for the customer's needs and product requirements.

Read also our article on the benefits of the standardization of production testing: https://www.etteplan.com/stories/standardization-production-test-systems-3-benefits-production-testing-ownership

Procket Rapid

Rapid is a simple solution to help especially R&D to test HW, interfaces, and download new firmware for prototypes. It's also suitable for small prototype batch testing. The fixture is open frame compared to production fixtures which makes manual measurements easy for designers.

The design is based on finger screw based adjustments. First you adjust PCBA positioning by moving holding jibs in place. Then You carefully close the top frame and adjust the test probe jibs to the locations you need. When the probe jib is in place, you only need to tighten the finger screw. The last step is to connect wires to your own connections or to the Interface board if that is chosen to your configuration.



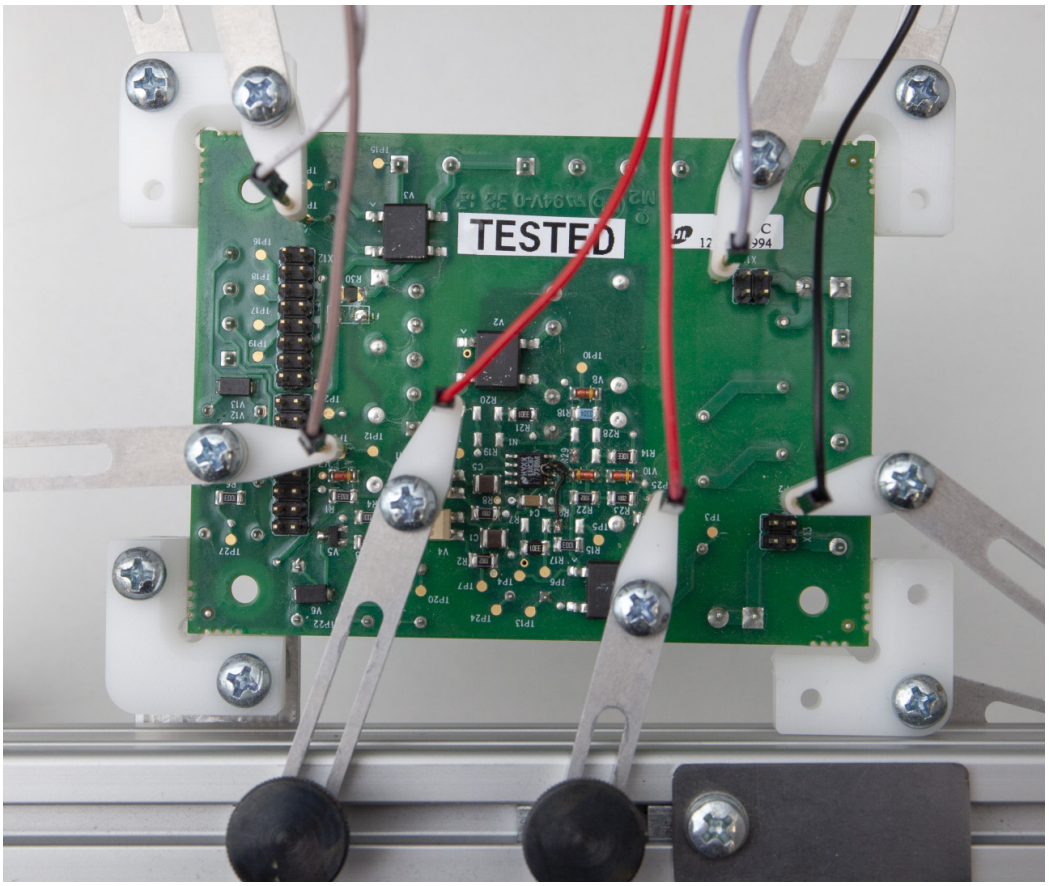
Picture 1. Procket Rapid with Interface board and DAQ

You can choose between 3 different types of configurations:

1. Simple frame with 10 pcs of jibs
2. As configuration 1 with Interface board that has power supplies, USB- Ethernet and RS-232 connections and much more
3. Above mentioned with Procket sw tool kit

Procket sw can be utilized later on for the other Procket testers. Utilization rate depends on the application and complexity of the product that is being tested and test specifications.

Often we're asked if Rapid is suitable for low volume production. Our answer is that it is not recommended but possible. Test probes are visible and it's very easy to damage them if not used carefully.



Picture 2. Jibs are in place

Procket Desktop

If you do not need a rack it is also possible to place instrumentation and fixtures on a desk. Then your choice is Procket Desktop. Many Electronics manufacturers though prefer instrumentation placed inside the rack to save floor space and help cleaning on the factory floor.

Procket Compact

Compact is a 19" low industrial rack that can include e.g. computer, PXIe and a set of required instruments for your solution. Instrumentation is limited to the test rack's physical size but can still offer you all the desired functions. The fixture can be placed on top of the rack or if you need more flexibility then the fixture can be connected using a wire harness and by placing the fixture on a desk. Compact is normally used for products under 60 VDC.

The rack height is also suitable for passenger airplane transfer.

Picture 3. Procket compact

Procket Flex

Flex is a full sized rack that has more space for instruments than Compact. If you require a higher power input, we have a solution for the of use 3~ power input. The heart of Flex is also the Procket software library. The biggest benefit of Flex is its interface where you are able to utilize instrumentation for several products by changing fixtures within minutes, no matter if it's a simple PCBA fixture or a RF shielded fixture.

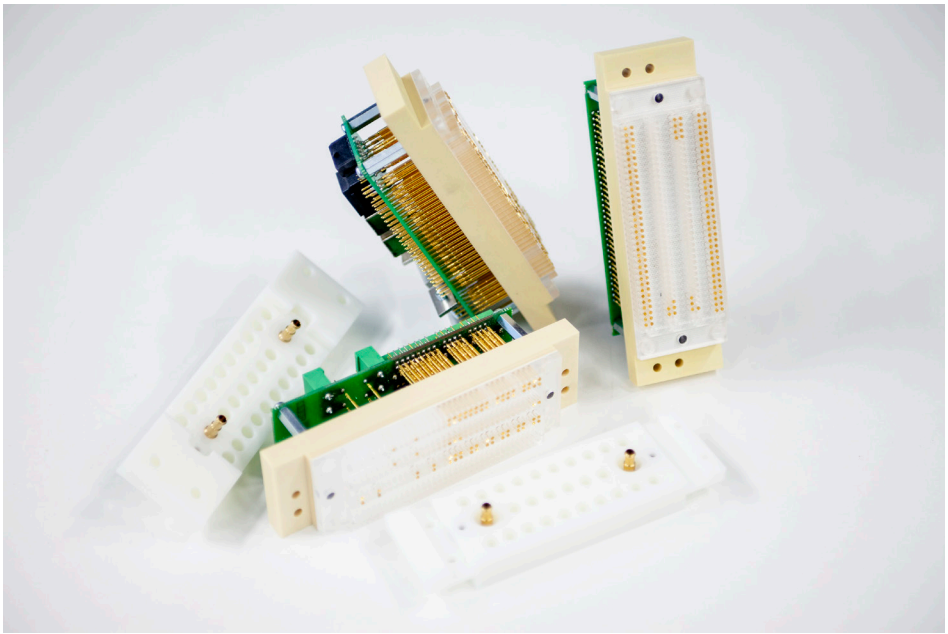
The display is placed on an arm and can be moved around making it visible on the production line. The display is also maneuverable in a vertical direction for good operator ergonomics.

Compressed air is needed to lock/unlock the fixture.

The benefit of the Flex is its interface where the utilization of HW for several products is easy. The application can be changed within minutes during production.

The interface has different modules to meet different testing needs. The fixture is locked using compressed air and released by pressing two buttons located in the display arm.

Picture 4. Flex station without fixture



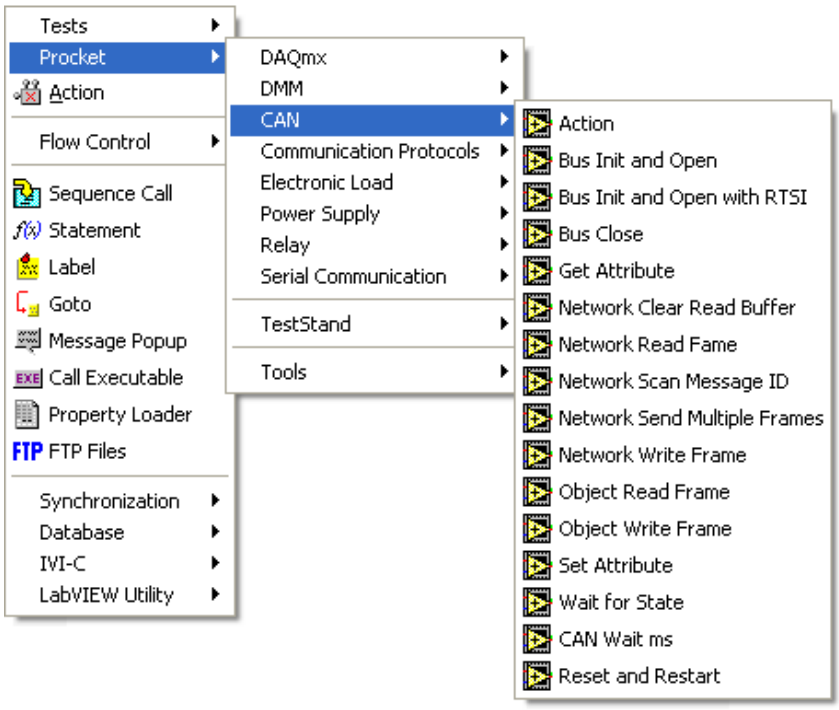
Picture 5. Few module types

Procket SW

The Procket test system's main software parts are built with NI TestStand and LabVIEW software. LabVIEW is a graphical programming language used especially for data acquisition, instrument control and industrial automation.

TestStand is used to develop, manage and execute test sequences, which integrate test modules written in different programming languages (LabVIEW, Python C/C++, Java, .NET etc). Test sequences consist of tests steps, which can be NI standard test steps, Procket platform steps or custom made steps.

The Procket platform's LabVIEW drivers and step types allow significantly faster test development as the Procket LabVIEW drivers include a wide range of tested measurement drivers. The drivers support several data acquisition instruments on various buses and provide the most commonly used measurement functions.



Picture 6. Measurement functions

The Procket platform is compatible with WATS

Test results will be stored locally into the PCs of the test system in HTML format. For each UUT there will be a separate file. In addition to local test result storing the test system is equipped with real-time test data management service WATS. WATS client, installed on test system PCs, sends test results to the WATS cloud server. The server provides real-time reporting, dashboards, alarms, KPIs, etc. based on test results. It's also possible to browse individual test reports via WATS. WATS has an easy-to-use browser-based user interface. The architecture of the WATS system is shown below.

WATS also supports the creation of product certificates. It's possible to collect a certain set of test results of each product to show and create a product certificate, which is then delivered to the end-customer together with the product. Certificates can be printed out via WATS user interface or the storing of them can be automated. Via WATS API, certificates and other data stored into WATS can be exported to other back-end systems like ERP or SAP. The quotation contains a three-month trial period of WATS. Trial period starts from the SAT. Possible customizations or integrations of WATS shall be quoted separately. You can find more info about WATS at: www.wats.com

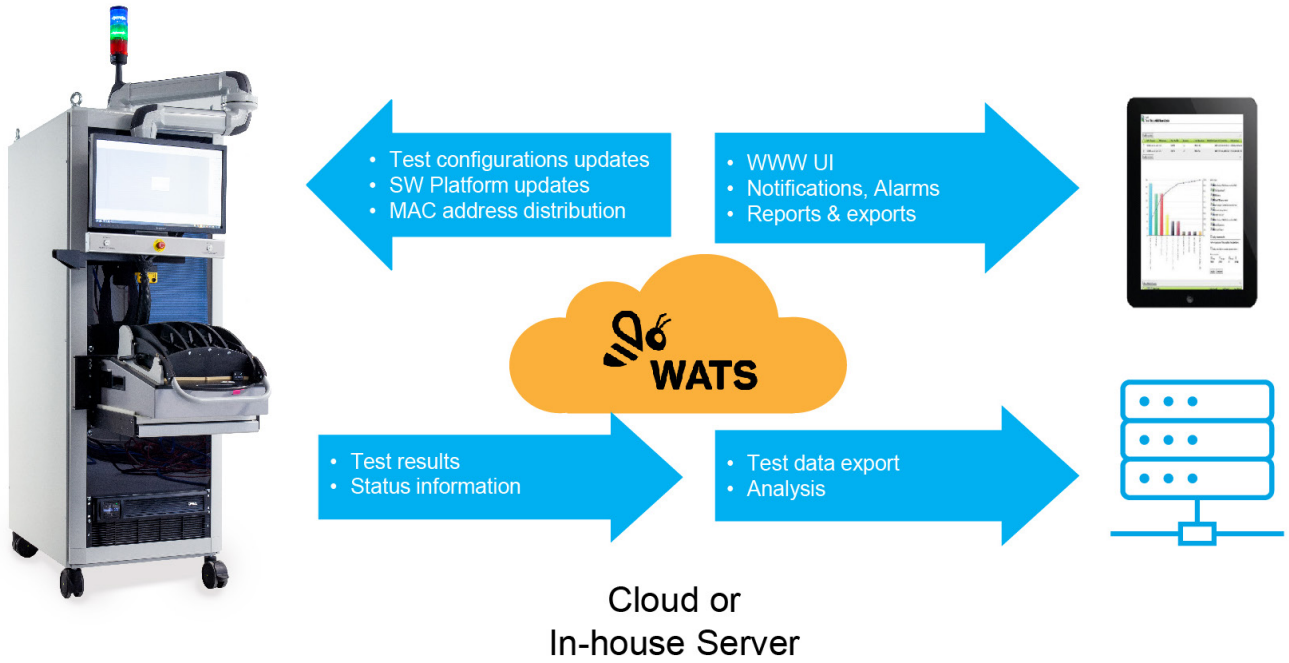


Figure 7. WATS Real-time test data management