TK-2

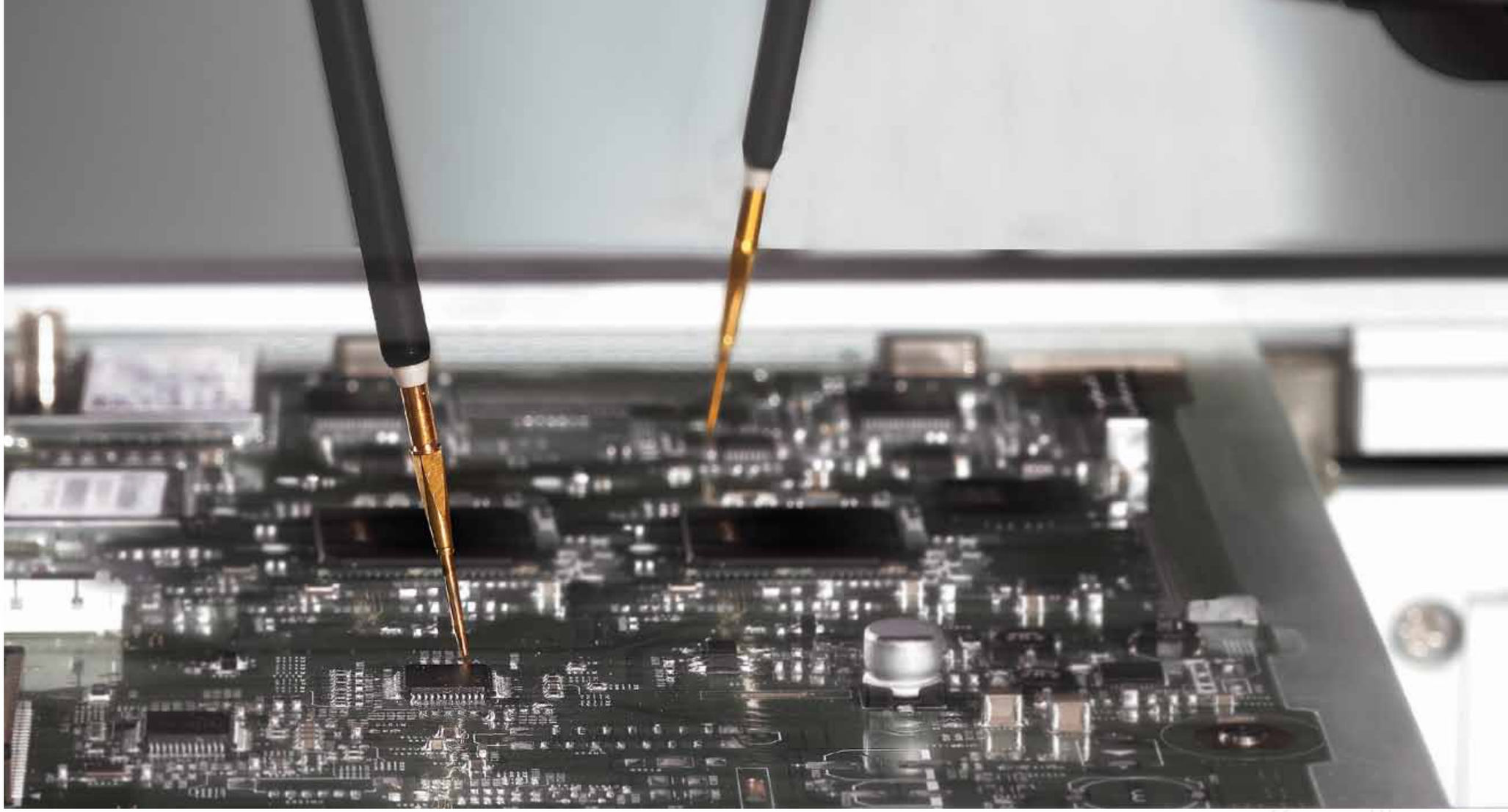
Flying Probe that Beyond your imagination

"Let us do the test"

TK-2 Flying Probe Troubleshooting System

TESTING HOUSE KOREA

The World Premier Total Test Solution Provider



2 Heads Flying Probe System

Application : Circuit Board and BGA Rework

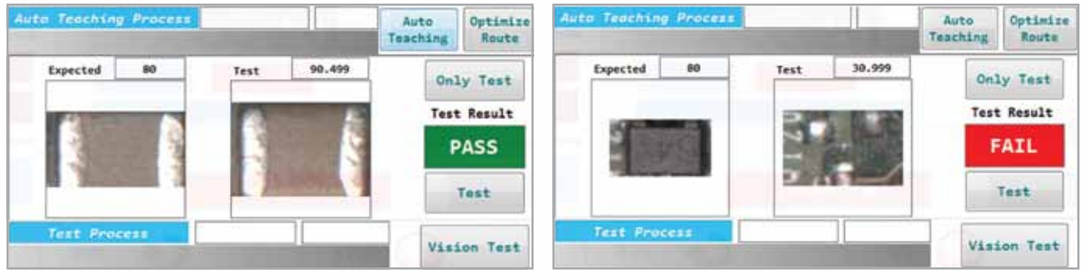
- Robot Axis : X axis, Y axis, R(Rotation) axis, T(Probe)
- Robot Each Head : X axis, Y axis, R(Rotation) axis, T(Probe) axis
- Robot Clamping : axis, F1(Clamping) axis, F2(Clamping) axis
- Robot Clamping : F1(Clamping) axis, F2(Clamping) axis
- Probing Accuracy : ±50micron
- Probing정확성 ±50micron

Key Features

- Vision Test
- VI Test
- Open & Short Test
- DMM Test
- Voltage test (on powered test)
- Current monitoring
- Laser auto height sensor
- Barcode reader with vision camera (1D and 2D)
- Auto create test plan available based on CAD data
- Partial area test plan
- Manual create test plan available with no CAD data
- Fixtureless
- The high speeds switch control for each module.
- 5 different types of speed control including a soft touch
- Protect from the environment noise.
- User friendly Intuitive Graphic interface
- Easy to install - No compressor required
- Control software to monitor, analyze and optimize the process
- Free software upgrade
- Test result report available in CSV file
- Full safety features for the operator
- Good segment for Rework, Inspection and R&D Lab
- No need for expert technician to operate
- CAD converter (Optional)
- Upgrading instruments (Optional)
- Customizing (Optional)

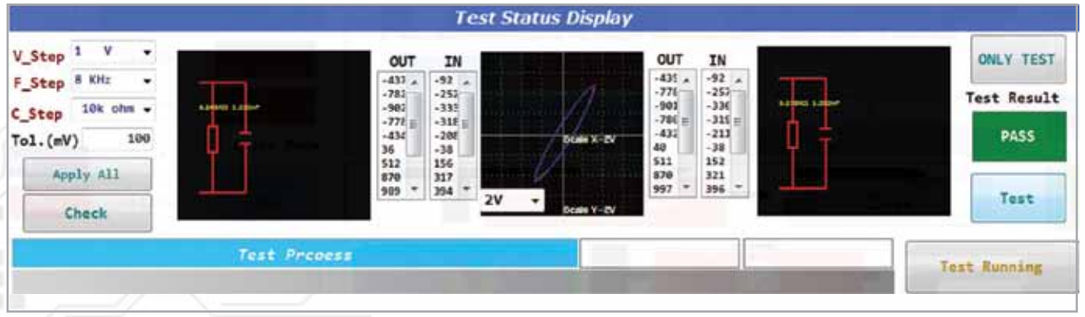
Vision Test

Vision test detects the presence or absence of components using pattern matching.
Vision Pattern Matching을 이용하여 부품의 이상유무를 검출한다.



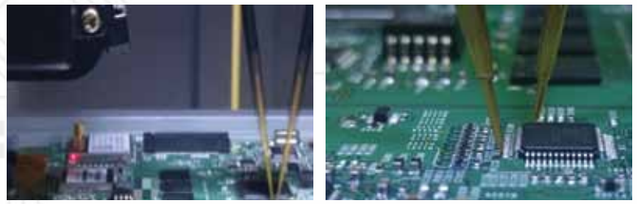
VI Test

In state that the power is not applied, the measurement and the fault are detected through the VI module based on the combination of VCF (Voltage, Current, and Frequency)
전원을 인가하지 않은 상태에서 VCF(Voltage, Current, Frequency)를 조합한 VI 모듈을 통하여 측정, 불량을 검출한다.



Open & Short Test

Find an open or short circuit.
회로의 단락과 단선을 측정한다.



DMM Test with simple ICT

Simple ICT function is supported by various capacity value checks by components using DMM (Digital Multi Meter)
DMM(Digital Multi Meter)을 통한 부품별 다양한 용량값 점검으로 간이 ICT 기능을 지원한다.

Standard DMM (Keysight 34465A)
(R/C/D/DCV)

National Instrument PXI-4072
PXI – 1033 Chassis (R/C/D/L/DCV)
(Optional)

Voltage Test (On Powered)

The power supplied with connecting method, it detects power failure through measuring current change between the GND and each test point.
제품의 전원부와 커넥팅 방식을 통하여 전원을 인가하고, 각 Test Point와 GND간의 전압측정을 통하여 전원 불량을 검출한다.

(Optional)

Multi- Function Unit with Matrix Modules

The Multi-Function unit with matrix module supports variety of test modes.
Matrix 모듈을 이용한 Multi-Function Unit 사용으로 다양한 테스트 모드를 지원한다.

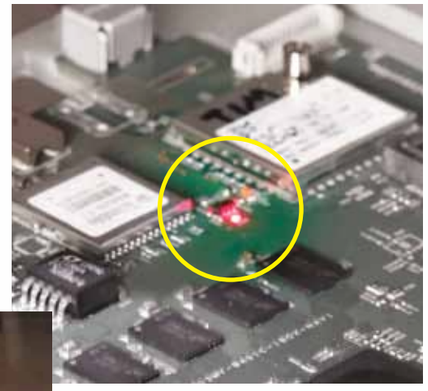
Barcode Reader with Vision Camera

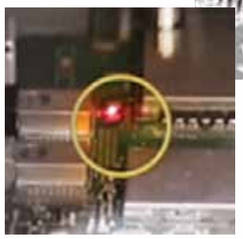
Vision camera scans standard one-dimensional bar-code and a two dimensional barcode.
Vision Camera를 이용하여 표준규격1차원 바코드, 2차원 바코드를 스캔한다.

* Optional for Handy Scanner

Laser Auto Height Sensor

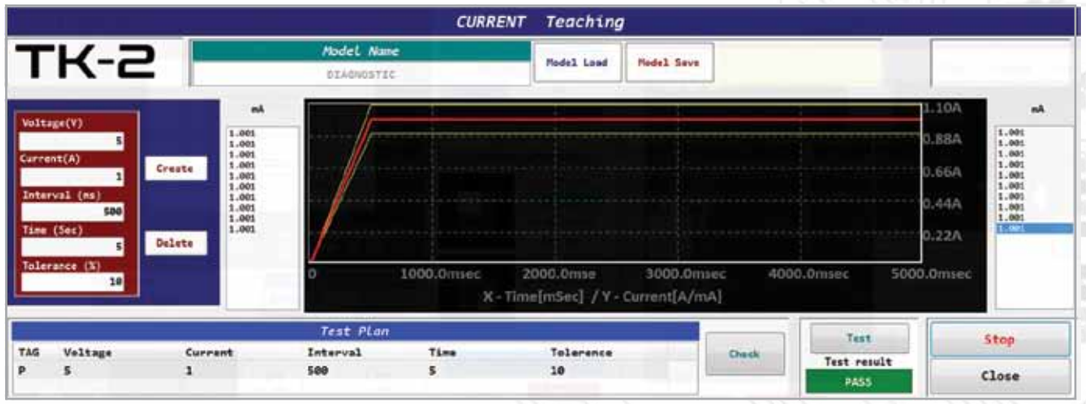
Auto height sensor automatically measures the heights of components and protect against from the damage between probe and components during operation.
Auto Height Sensor를 통해, 부품의 높이를 자동 측정하여 position generate에 정보를 입력하면 Test Plan 생성시 충돌 여부를 체크 한다.





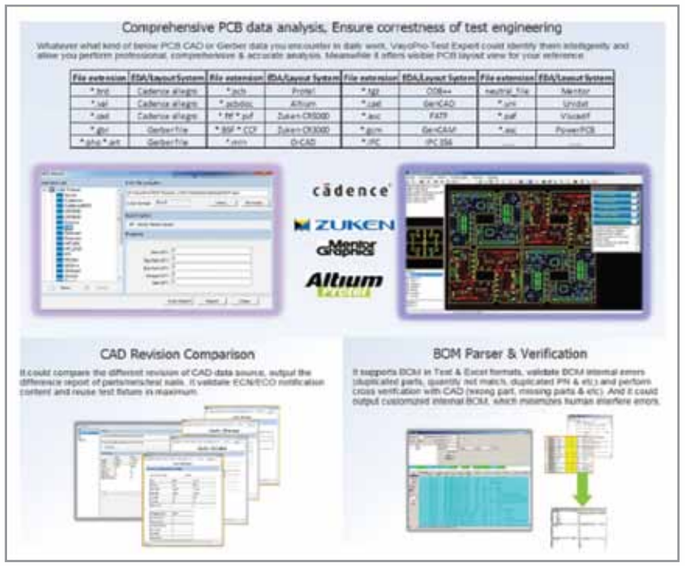
Current Monitoring

Monitoring the amount of current change to applied power and identify the power failures. (Minimum Interval 200M/Sec)
인가된 전원의 전류 변화량을 모니터링 하여 전원불량을 식별한다. (Minimum Interval 200M/Sec)



CAD Convert (Optional)

Tk-2 has ability to import and convert 25 different kinds of CADs
TK-2는 25가지 다른 종류의 CAD import 및 convert가 가능하다.



Full Safety features for the Operator

Tk-2 designed to have all safety protections for the operator's safety and other electrical external factors.
Safety Area Sensor, Electronic Safety Relay 등으로 사용자의 안전 및 외부의 전기 요인으로 인한 설비손상으로부터 보호한다.

5 different types of speed control

Tk-2 has 5 different types of speed control unit for probe touch.
TK-2는 5종류의 테스트 속도를 지원한다.

☑ Soft ☑ Slow ☑ Normal ☑ Fast ☑ Extra Fast

Auto Create Test Plan

Tk-2 supports auto create test plan based on CAD data.
제품의 CAD 데이터를 기반으로 자동 테스트플랜을 지원한다.

Manual Create Test Plan (No CAD Data)

If there is no CAD data, it supports auto test plan after inputting data to position generate manually.
CAD 데이터가 없을 경우 수동으로 position generate 에 데이터 입력 후 자동 테스트플랜을 지원한다.

Partial Area Test Plan

TK-2 supports a partial area test plan that it could only test in selected areas of the target board.
보드의 원하는 부분만 선택하여 테스트 진행이 가능하다.

Test Result Report available in CSV file

The test result report is available in CSV file. The report will provide with detail result of the target tested board in each individual test steps.
테스트 완료 후 결과 리포트는 CSV 파일로 확인이 가능하며 상세하게 테스트 보드에 대한 리포트가 생성된다.

[DMM]

TAG	Part-Head1	Part-Head2	Net-Head1	Net-Head2	Mode	Bom	Low	High	Expected	Measured	Result
P	R8.1	R8.2	GND	GND	Resistor	3.3K	10	10	3.3K	3.233K	Pass
*	R11.1	R11.2	S1.1	R3.2	Resistor	6.8K	10	10	6.8K	6.728K	Pass
P	C27.2	C27.1	S1.1	S1.2	Capacitor	0.01u	20	20	0.01u	9.957n	Pass
*	C3.1	C3.2	S1.2	S1.3	Capacitor	47n	20	20	44n	43.658n	Pass
P	C28.1	C28.2	R3.1	R3.2	Capacitor	0.01u	20	20	9.75n	9.452n	Pass
P	R23.2	R23.1	R3.1	C20.2	Resistor	2.2K	10	10	2.2K	2.182K	Pass
*	R21.2	R21.1	C20.1	C20.2	Resistor	10K	10	10	10K	9.949K	Pass
P	R12.2	R12.1	C20.1	R16.2	Resistor	6.8K	10	10	6.8K	6.769K	Pass
P	C2.1	C2.2	R16.1	R16.2	Capacitor	220u	20	20	220u	257.992n	Pass
P	R20.1	R20.2	R14.1	R14.2	Resistor	0	-1	10	5	0.505	Pass
P	R14.1	R14.2	Q3.1	LED1.4	Resistor	200	10	10	220	199.709	Pass
P	R16.1	R16.2	Q3.2	Q3.3	Resistor	200	10	10	220	201.086	Pass
P	C20.1	C20.2	Q3.2	Q3.1	Capacitor	100n	20	20	100n	93.455n	Pass
P	R3.1	R3.2	LED1.4	LED1.3	Resistor	270	10	10	270	274.794	Pass
P	R24.1	R24.2	LED1.2	LED1.3	Resistor	10K	10	10	10K	9.736k	Pass
P	C22.1	C22.2	LED1.1	LED1.2	Capacitor	0.01u	20	20	0.01u	9.244n	Pass
P	R18.1	R18.2	R14.1	Q2.3	Resistor	6.8K	10	10	6.8K	6.736K	Pass
P	R1.1	R1.2	Q2.2	Q2.1	Resistor	10K	10	20	9.6K	10.589K	Pass
P	C6.2	C6.1	R20.1	C4.2	Capacitor	330u	-1	20	95u	99.350u	Pass
P	R9.2	R9.1	C4.2	C4.1	Resistor	0	-1	10	5	0.142	Pass

(Sample of Test Report in CSV File)

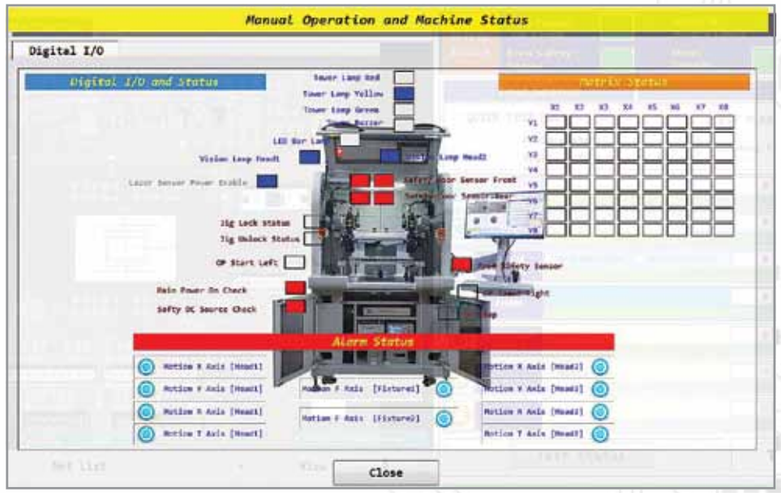
TK-2 Intuitie Graphic Interface

TK-2 Main Interface

— User friendly Intuitive Graphic interface

— Tk-2 Main interface with all test status and process

TK-2 Status Interface



— Full machine status alert before testing

Test Point and Information (Position Generate) Interface

- Create Test Plan
  - Test Point
  - Component Layout
  - Component Information
  - Component Height
- CAD Import
- CAD Convert (optional)

Vision Test Interface

- High Resolution Camera
- Inspection Area
  - Pattern Matching
    - Wrong Parts
    - Reversed Parts
    - Missing Parts
  - Barcode Reading
    - 1D and 2D
- 2 Cameras supports with
  - Alignment / Vision

VI Test Interface

- Display : Circuit Equivalent Diagram
- VI Curve Comparison
- Several Different Test Modes Support (Voltage/Current/Frequency)

Open & Short Test Interface

— Inspection Area

- Find an open or short circuit

DMM Test Interface

— Inspection Area

- Resistor
- Capacitor
- Diode
- Inductor (National Instrument-PXI)
- DCV (Power)

Voltage & Current Test (On Powered) Interface

— On Powered Test (The board that requires a on power test)

- Current test
- Voltage test

Test Coverage Interface

— The target board test coverage of each tested area

— Listed with tested components counts and total tested coverage of target board

MANUFACTURER

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MODEL NAME		TK-2
Equipment Picture		
Specification	Main Body Dimensions	1200x1100x1700 mm (Width x Length x Height)
	Probing Area	300x200 (Width x Length) mm
	Probing Precision	± 50 micron (0.05mm)
	Single Probe Repeatability	± 50 micron (0.05mm)
	Component Height	0 ~ 40 mm
	Measurement Speed(test/sec)	5/sec
	Weight	800KG
Probe	Flying Probe Head	2 Heads
	Min Contact Pad	100 micron (0.1mm)
	Min Contact Pitch	500 micron (0.5mm)
Testability & Measurement	VI Curve Test (VCF)	Yes
	Capacitor	Yes
	Diode VZ Measure	Yes
	Zener Diode	Yes
	Digital TR	Yes (Diode Test / Resistor Test)
	photocoupler	Yes (Diode Test / Resistor Test)
	Short	Yes
	Open	Yes
	DC Voltage	Yes
	Resistor	Yes
	On Powered Test	Yes (Edge Type)
	FET on Resistance	Yes (Diode Test / Resistor Test)
	Vision Test	Yes (Pattern Matching)
Additional Features	Component Height Measurement	Yes (Laser Height Sensor)
	Barcode Reading	Yes (1D/2D Barcodes)
Optional	Accessories (Handy Scanner, Ticket Printer & Others)	Inquiry
	CAD Convertor	Inquiry
	National Instrument PXI (PXI-4072,1033)	Inquiry

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