PONOVO POWER CO., LTD

PONOVO Introduction

POWER INNOVATION

Who We Are

PONOVO Energy Interconnection Innovation Park Headquarter Office In Beijing

A power system instrument manufacturer

Foundation: 1998 in Beijing
Employees: 400+ (R&D Engineers 200+)
Headquarter: Beijing
Office Location: PONOVO Building (appr. 60,000m^2)
Factory: Chongqing and Beijing
Sales Offices in China: 15 sales branches and 2 technical support center in Nanjing and Chengdu
International sales area: more than 50 countries
Revenue 2019: 247 million RMB ($3.5 billion USD)

What We Do

As the first linear power amplifier manufacturer in China since 1998, PONOVO has been focusing on offering reliable electric testing equipment for global users, including secondary protection relay test sets, power amplifiers, conventional and 4-Quadrant ones, primary injection test set, IEC61850 digital testing tools, HVDC test set, IGBT test system, etc

PONOVO Staring Products

Panel-mounted type

Portable type

Coventional Signal Power Amplifier

Panel-mounted type

Portable type

4-Quadrant Power Amplifier

PA460Bi Newly-launched Conventional Power Amplifier

PA460Bi is the new model among our conventional power amplifier family.

It is equipped with 6 channels of current output, each channel upto 32A, and 6 channels of voltage output, each channel upto 120V. The power output cabalibity of PA460Bi is superior, can be upto to 6*450VA at 32A, 6*60VA at 120V.

Based on linear amplifier design, its accuracy can be <20us, for th input-ouptut delay accuracy and it also has fast reponse time, <20us.

PA460Bi Newly-launched Conventional Power Amplifier

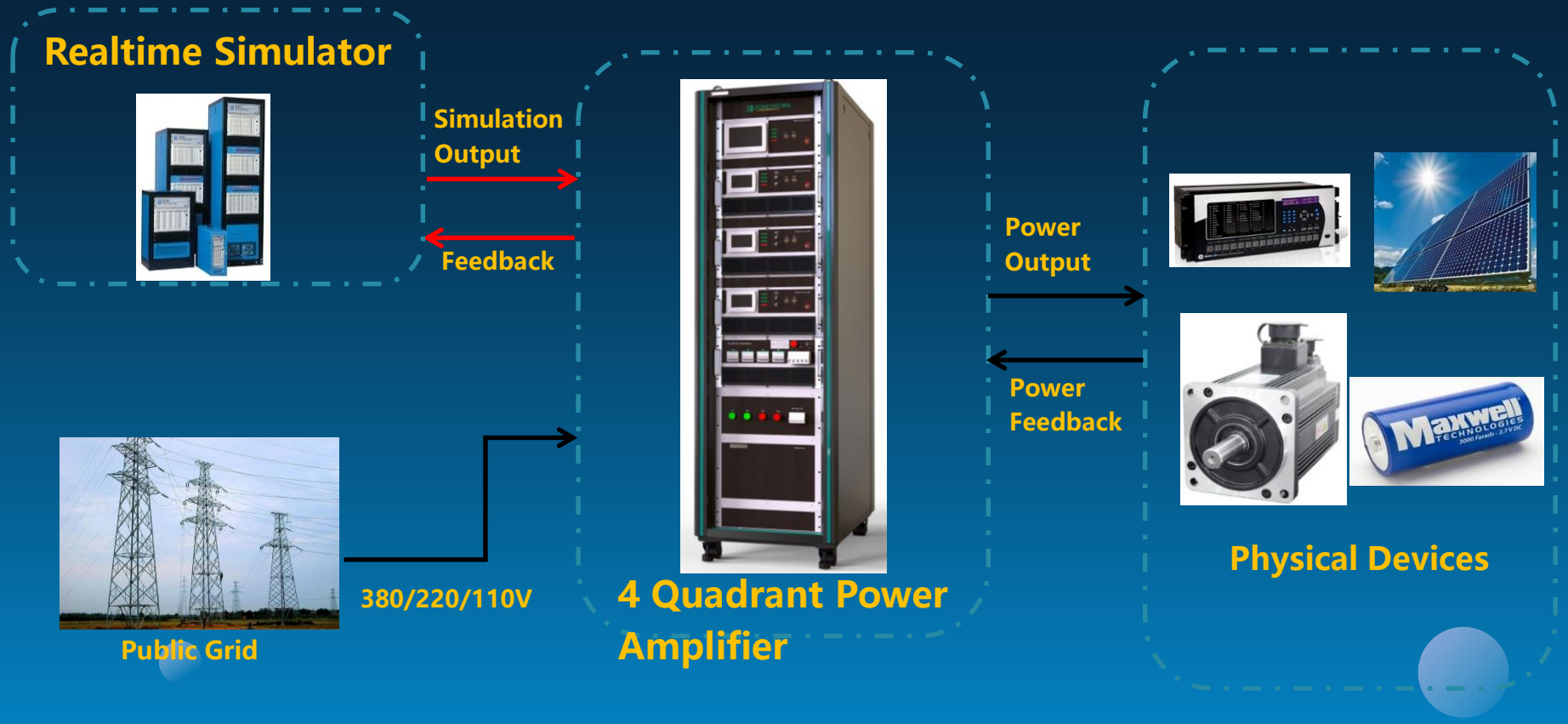
PA460Bi is a portable designed power amplifier, which could be used as a single unit, but also could be installed in 19'inch cabinet to be panel-mounted if necessory. User could freely configure more than 1 unit in their exsiting cabinet, or use PONOVO's cabinet.

It support anlog input and digital intput via Aurora protocol.

PAV Series 4-Quadrant Power Amplifier

- PAV Series Four-quadrant Simulation Power Amplifier based on linear power amplifier technology and integrated advanced technical performance and rich functions.
- It is vastly used by the institutes in the area of power, new energy, aerospace, rail transport, mining, petrochemical etc.
- It is also the ideal R&D device of wind power, PV, electric car, large power charging device, aerospace power system, marine power system, distribute energy, micro grid etc.
- It can directly connect to the popular simulation platform via both digital and analog interface

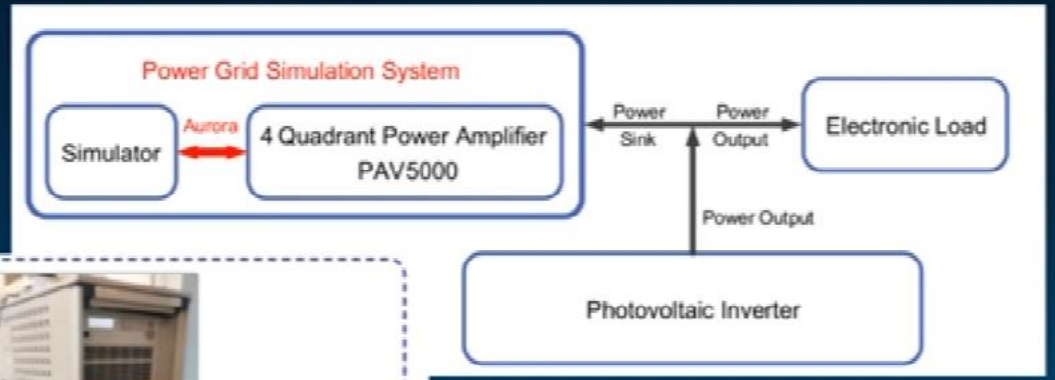
PAV Series 4-Quadrant Power Amplifier



Main Features:

- Extremely low harmonic distortion - Even under very non-linear load conditions
- Fast rise and fall time>50V/μs
- Short Input/Output delay: <10μs
- Wide frequency range DC upto 5kHz
- High output precision and High accuracy output
- Support digital interface via AURORA protocol
- High overload characteristic
- Source mode and Sink mode capability
- Various power level model selectable, from 3000VA to 30kVA

PAV Series 4-Quadrant Power Amplifier



Realtime Simulator

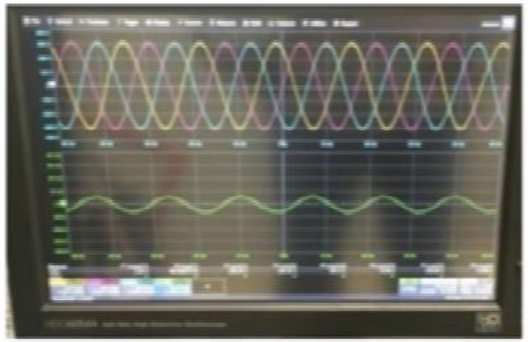
Simulation output

Feedback

4 Quadrant Power Amplifier

Power Power
Sink Output

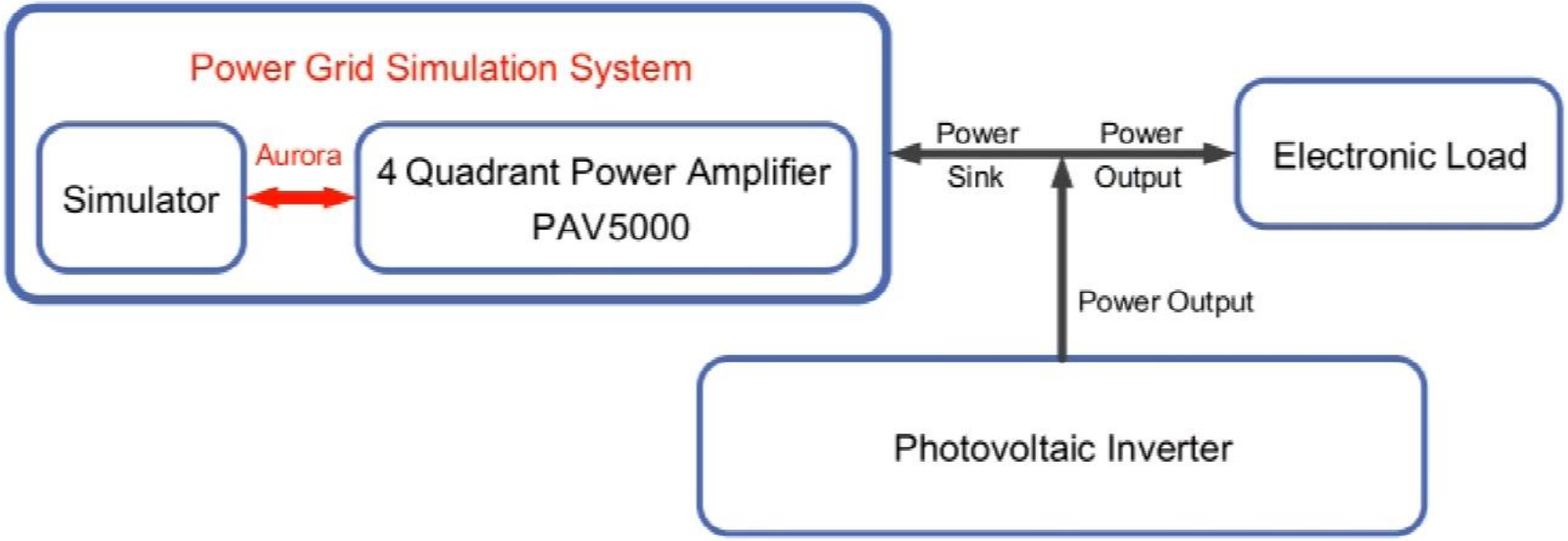
Electronic Load



Output Waveform

Power Output

Photovoltaic Inverter



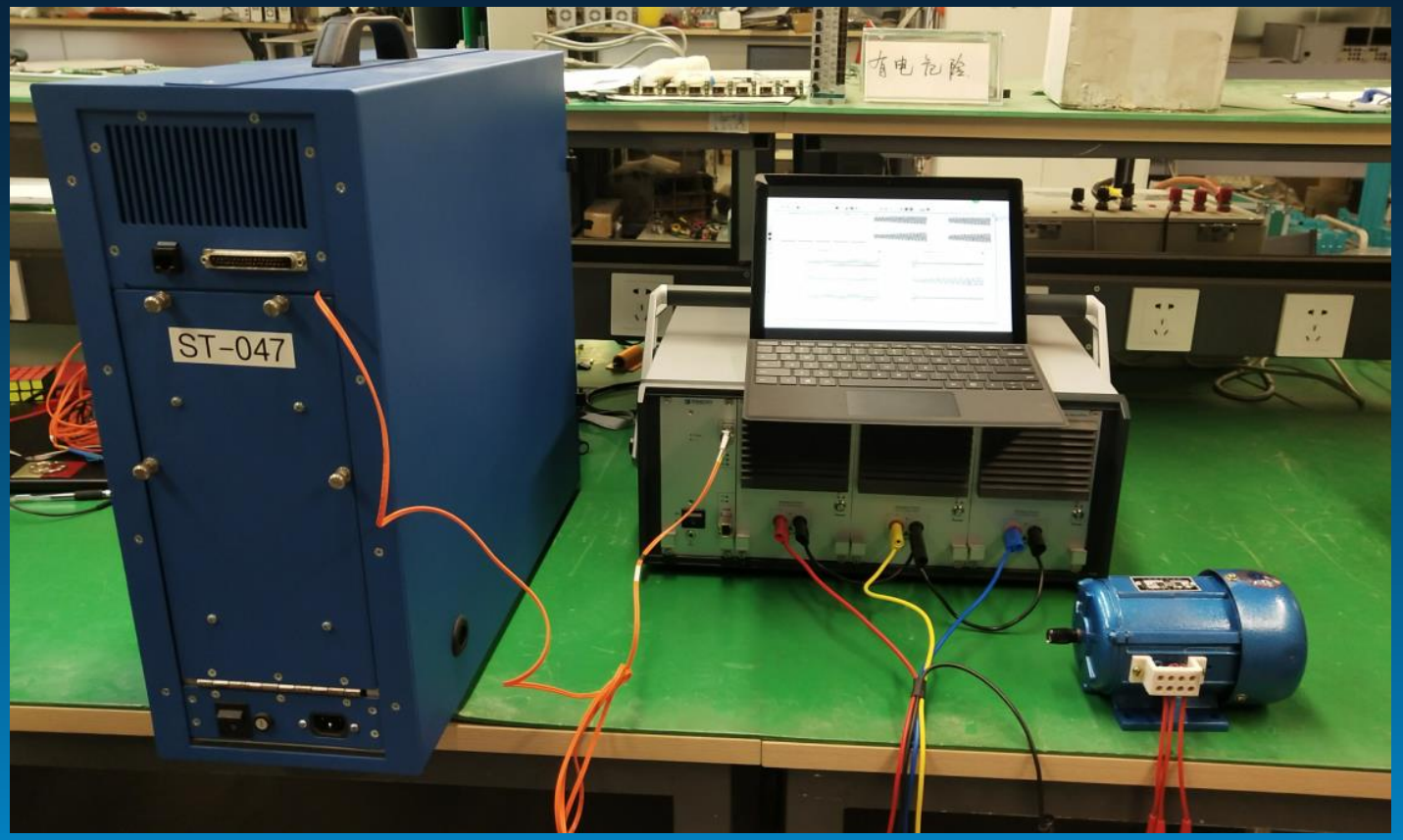
As the diagram above, the PHIL system consists of a PONOVO 4-Q amplifier, RTDS simulator, DC electronic load unit and PV inverter. In the experiment, the DC electronic load unit and PV inverter are the Physical system, 4-Q amplifier and simulator make up the simulation system which simulate a Grid. When the PVPS system is generating power, the DC electronic load unit consume a part of the energy and the residual energy shall be absorbed by the 4-Q amplifier which simulating the energy feedback to the grid. And when the PVPS system could not generate enough energy to drive the DC electronic load unit, the 4-Q amplifier could also be used as a source to drive the load unit, which simulating the power generation from the Grid.

For example, when the PV inverter is outputting 9kW, the DC electronic load unit shall consume 6kW (2kW each phase, 3-phase in total), 4-Q amplifier could sink 3kW (1kW each phase, 3-phase in total). So, to making the power balance of the whole power system in the experiment.

PIV270 Portable 4-Quadrant Power Amplifier

- PIV270 is the portable 4-Quadrant power amplifier model, newly launched in recent years.
- It is the smallest portable linear type 4-Quarant power amplifier in the world, which is equipment with 3-phase voltage output, 3*270V, support both source mode and sink mode power capability.
- It's very good options for universities and institutes who would like to start up the research of PHIL application.

PIV270 Portable 4-Quadrant Power Amplifier



Main Features:

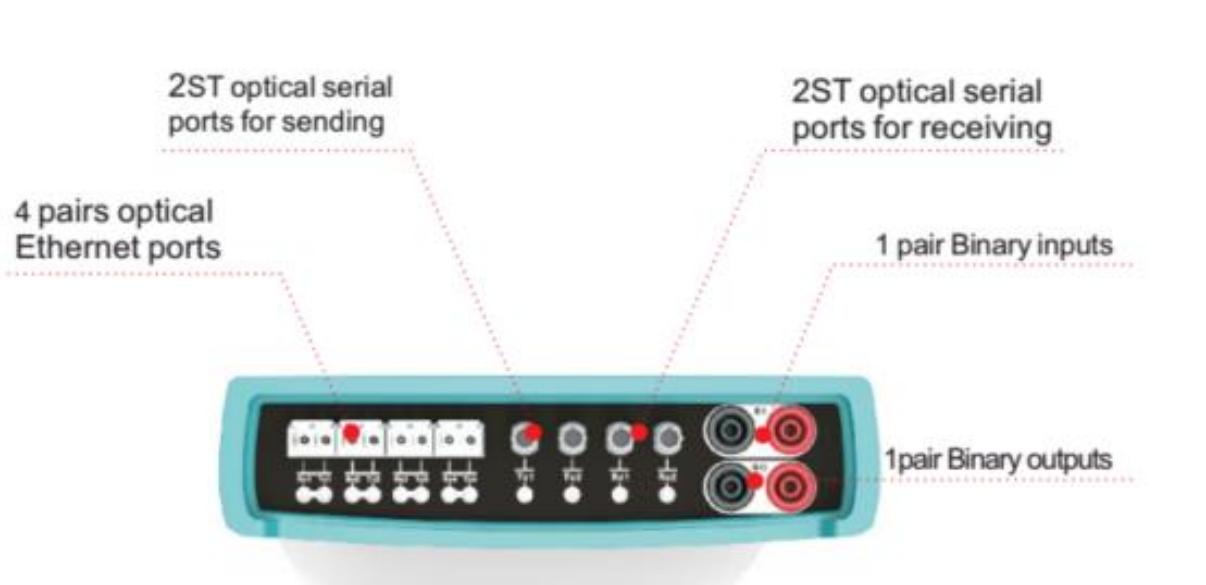
- Extremely low harmonic distortion - Even under very non-linear load conditions
- Fast rise and fall time>38V/μs
- Short Input/Output delay: <10μs
- Wide frequency range DC upto 5kHz
- 3*270V output, 270VA each phase
- support Constant current mode(CC mode), 3*1A
- Built-in both analog input and digital input interface via Aurora protocol
- 4U and less than 19kg

PNS630 IEC61850 Digital Substation Portable Network Analyzer

- PNS630 is handheld IEC61850 network analyzer which could be used for checking different IEDS, such as digital relays, MU,EMU,ECT,EPT, Switch,etc.
- It is equipped with 4 fiber optic ports, 1 pairs of Binary inputs and Binary outputs, support IRIG-B.IEEE1588 time synchronization. It could sending and receiving GOOSE, SV, MMS and other IEC61850 Message.

- It is an excellent multi-functional test tools for research and testings of IEC61850 digital substation.

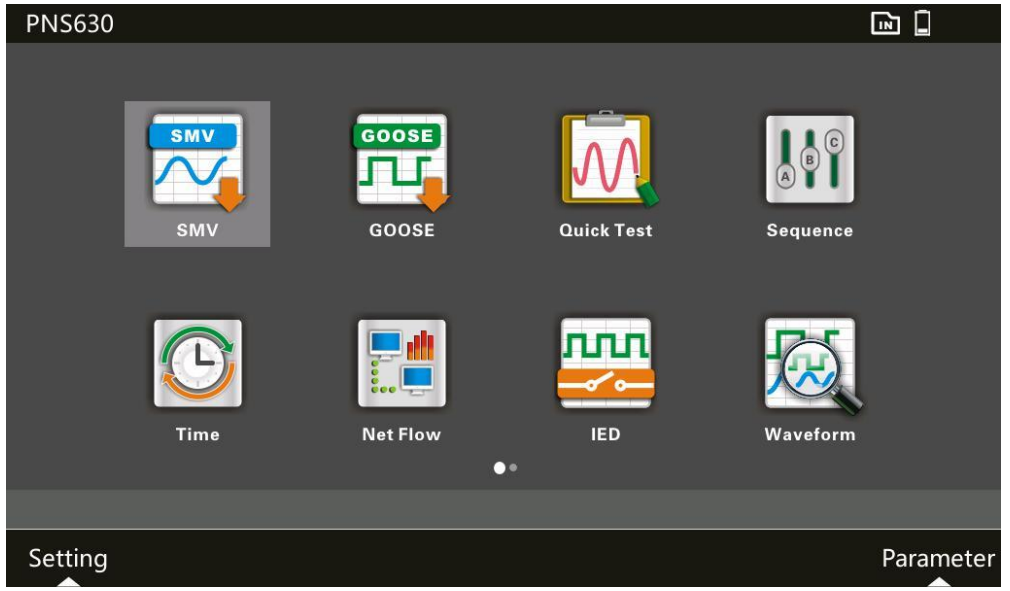
PNS630 IEC61850 Digital Substation Portable Network Analyzer

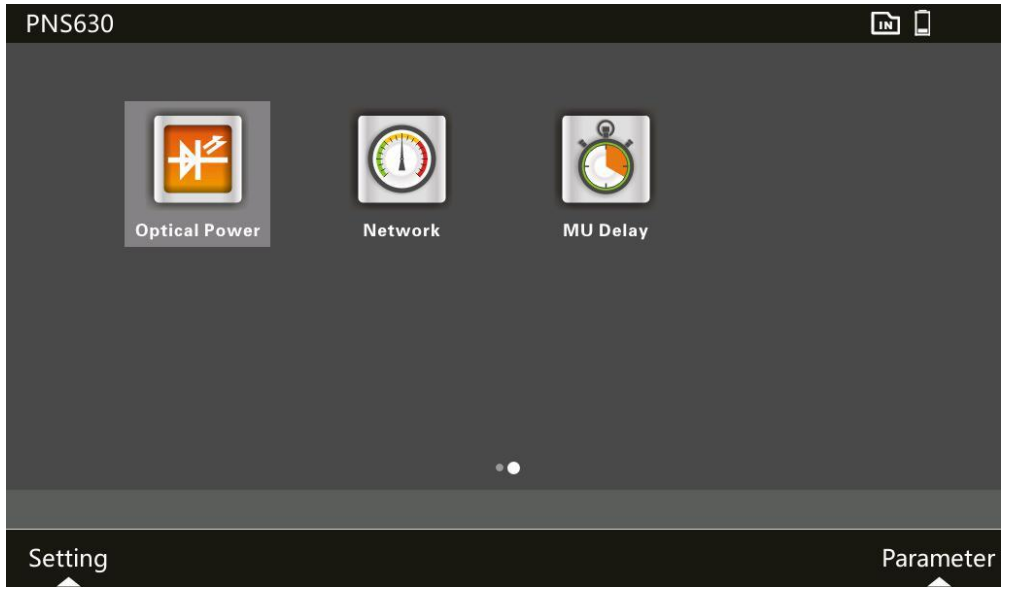


- PNS630 is equipped with 7 inch touch-screen, built-in Li-Battery for long-time operation.
- It is with built-in programme of various test modules for different testings.
- All programme in TF cardEasy to upgrade firmware and software
- 4 changable fiber ports/Ethernet ports

PNS630 IEC61850 Digital Substation Portable Network Analyzer

- Import and Chek SCL Files(SCD, CID,ICD,etc)
- Basic switch network traffic testings
- Basic Relay Testings
- Intelligent terminal testing
- MU Time Delay Testing
- Substation system testing
- Time Synchronization
- Electronic Transformer,CT,PT testings





PNS630 IEC61850 Digital Substation Portable Network Analyzer

Testing example
by using PN630 to test Intelligent Terminal

Function of Intelligent Terminal:
Converting
GOOSE
into
BI/O

Thanks for Watching

PONOVO POWER