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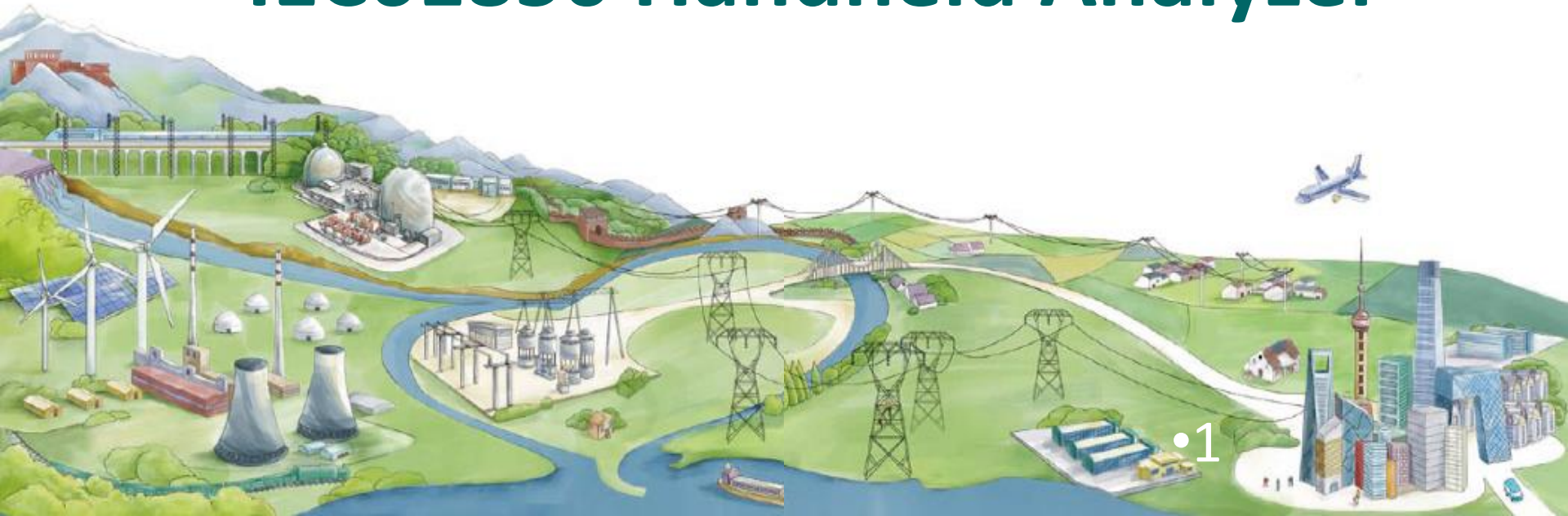
PONOVO PNS630
IEC61850 Handheld Analyzer



IEC 61850 – Types of Messages

GOOSE

SMV

MMS

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PNS630 ALL-IN-ONE Features

- GOOSE TESTING
- SMV TESTING
- MMS TESTING
- TIME SOURCE TESTING
- NETWORK TRAFFIC TESTING
- OPTIC-POWER TESTING
- WAVEFORM RECORDING

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PNS630 Benefits

- LICENSE-FREE
- PROGRAM RUNS FROM SD CARD
- NO FIRMWARE TO UPDATE
- BATTERY OPERATED
- SIMPLE APP-LIKE MODULES
- IMPORT OF IEC61850 SCD FILES

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PNS630 Hardware

7” Touchscreen

Function Keys

Home Key

Enter & ESC

Navigation Buttons

Power ON/OFF

Charge/Run LED

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PNS630 – Hardware

ETHERNET RJ45 (MMS)

MicroSD Card Slot
(File Transfer / Program EXE)

USB Port (Computer)

Power Supply IN
(Re-Chargeable Battery)

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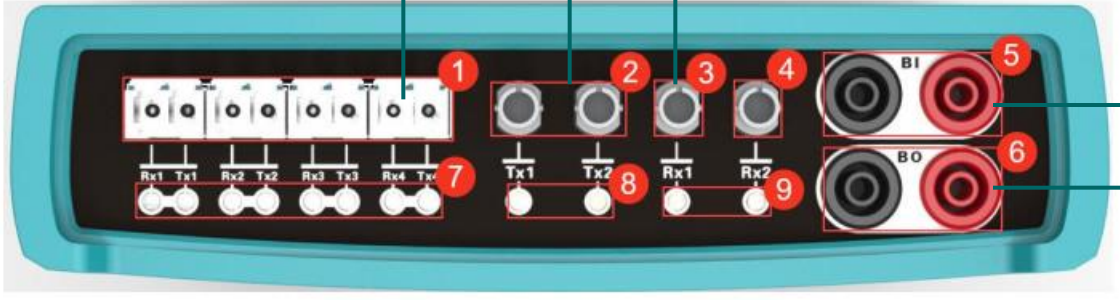
PNS630 – Connection Ports

4x 100Mbps FO Ports LC
(GOOSE, SMV, PTP)

ST FO Port for IRIG-B Send

ST FO Port for IRIG-B Receive



Binary Input

Binary Output

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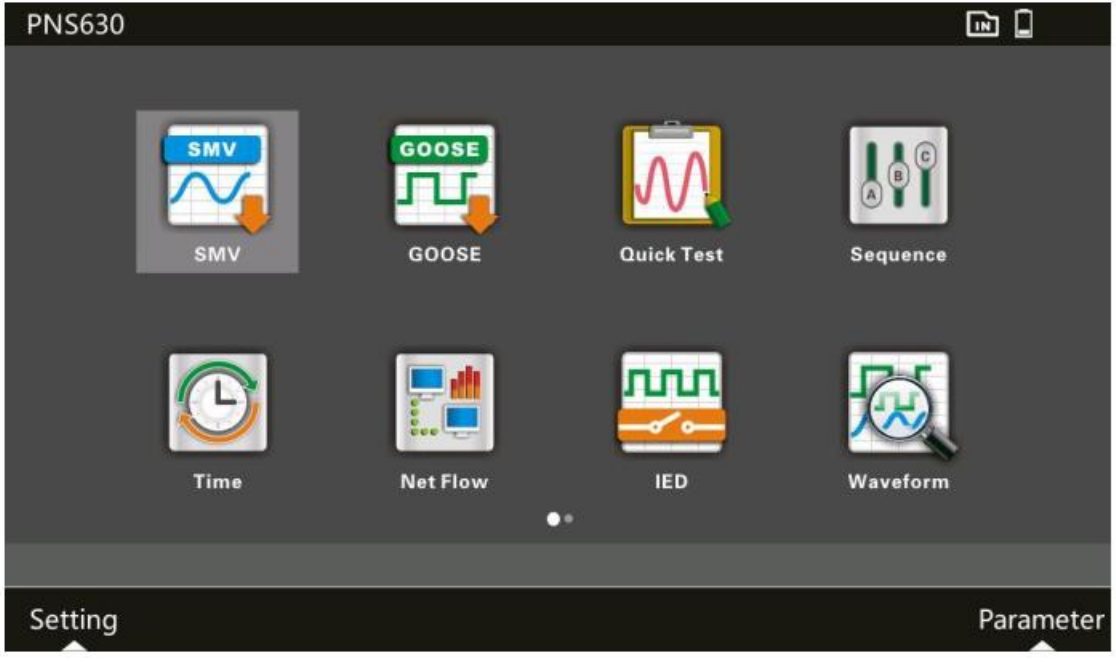
PNS630 – Testing APPS



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GOOSE TESTING

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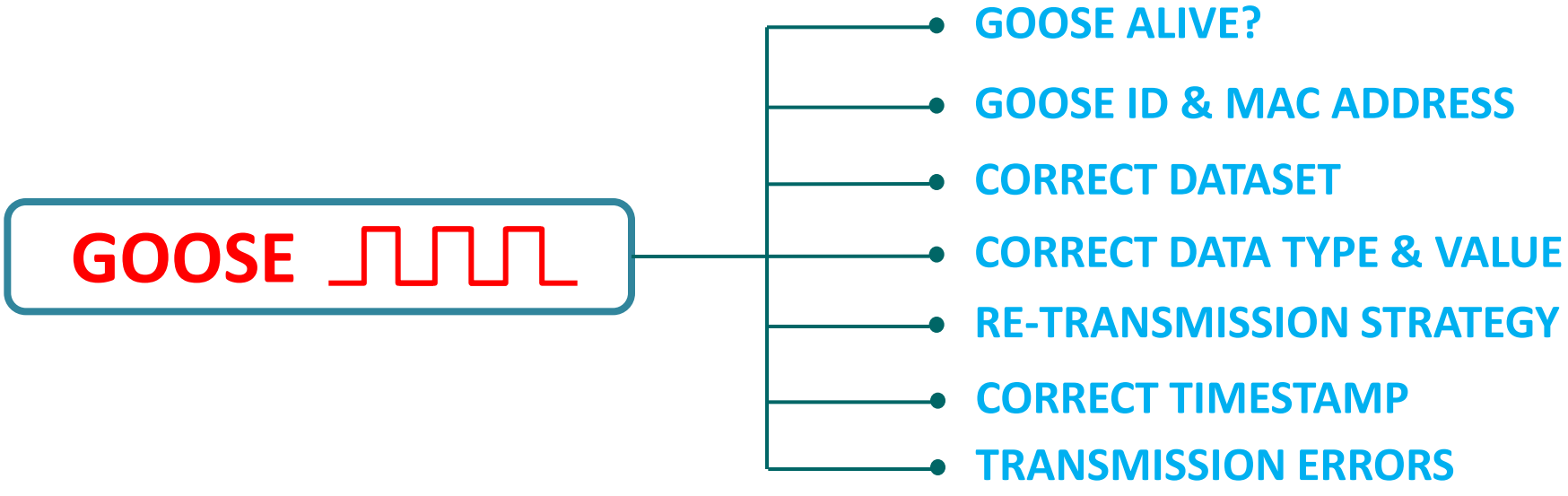
GOOSE – What To Check?



GOOSE Subscription

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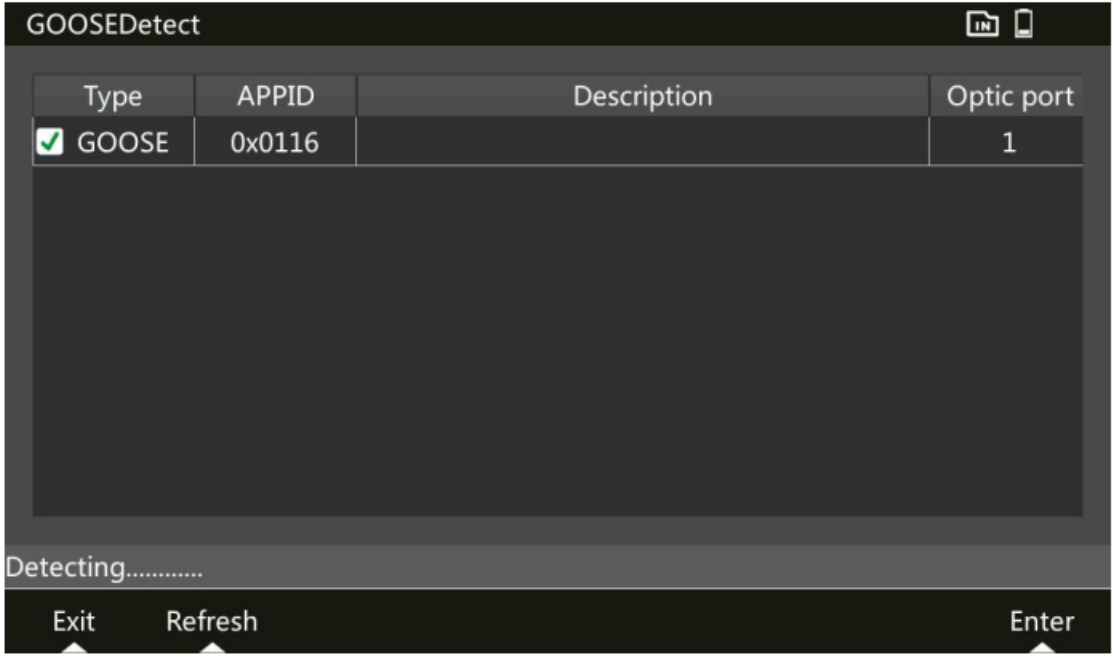
GOOSE Alive?



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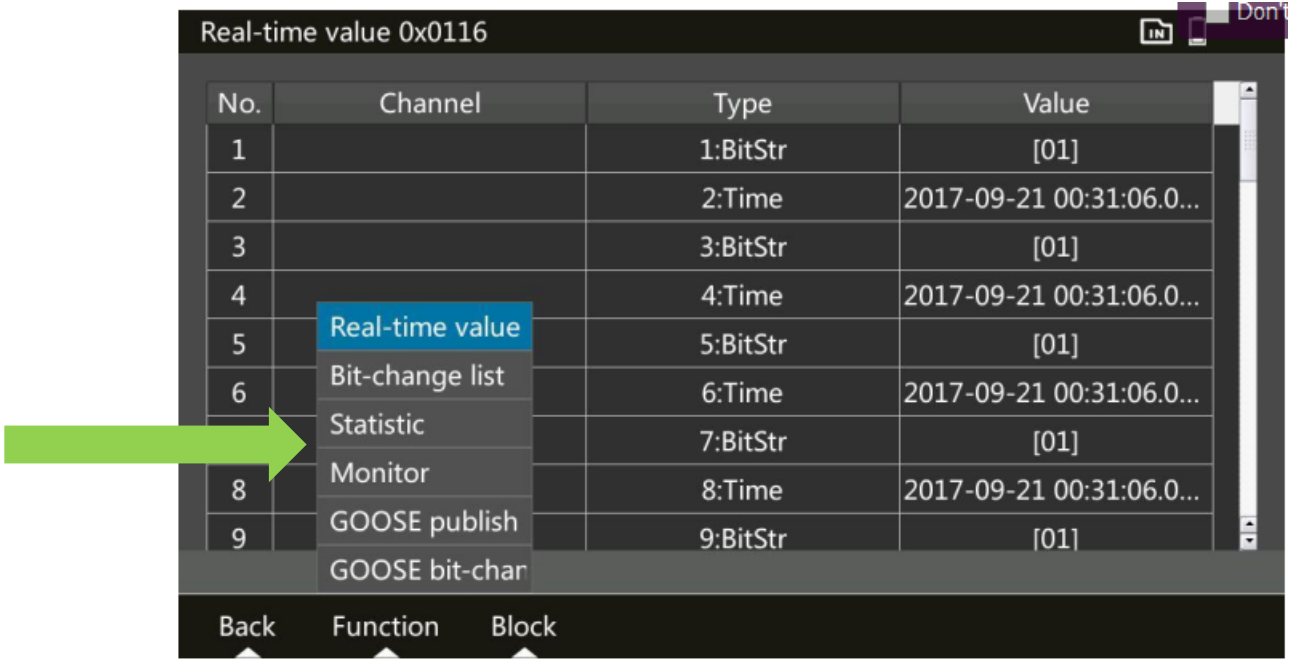
PNS630 - GOOSE Function List



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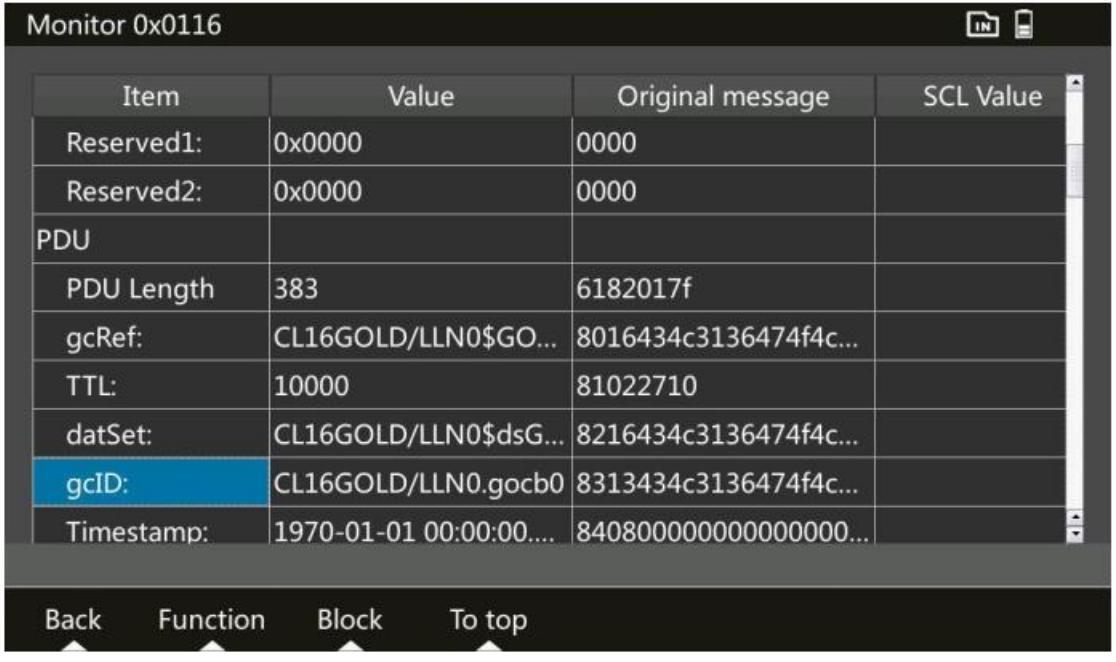
GOOSE ID & MAC Address / Dataset / Timestamp



Function: Monitor

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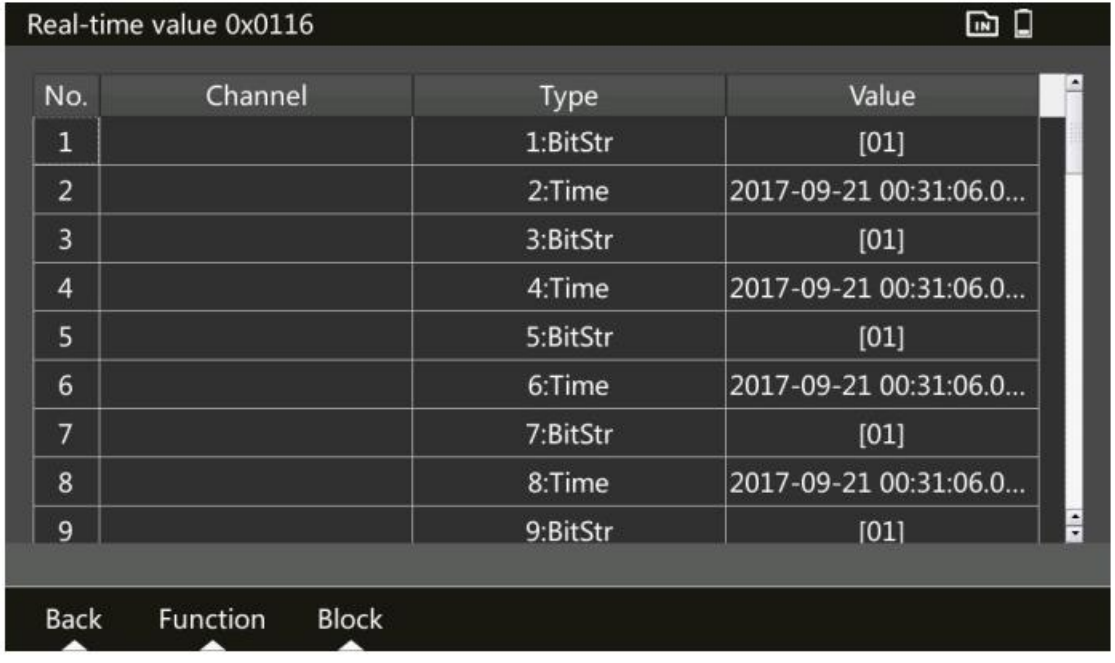
GOOSE Data Type & Values



Function: Real-Time Value

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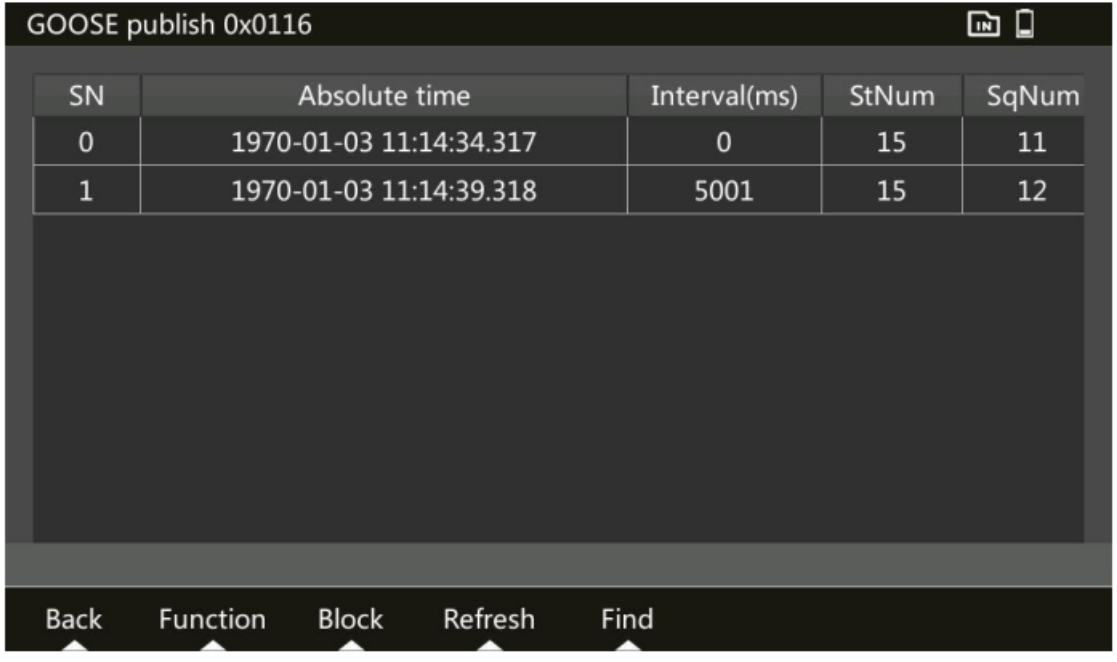
GOOSE Re-Transmission Strategy



Function: GOOSE Publish

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GOOSE Transmission Errors

Function: Statistics

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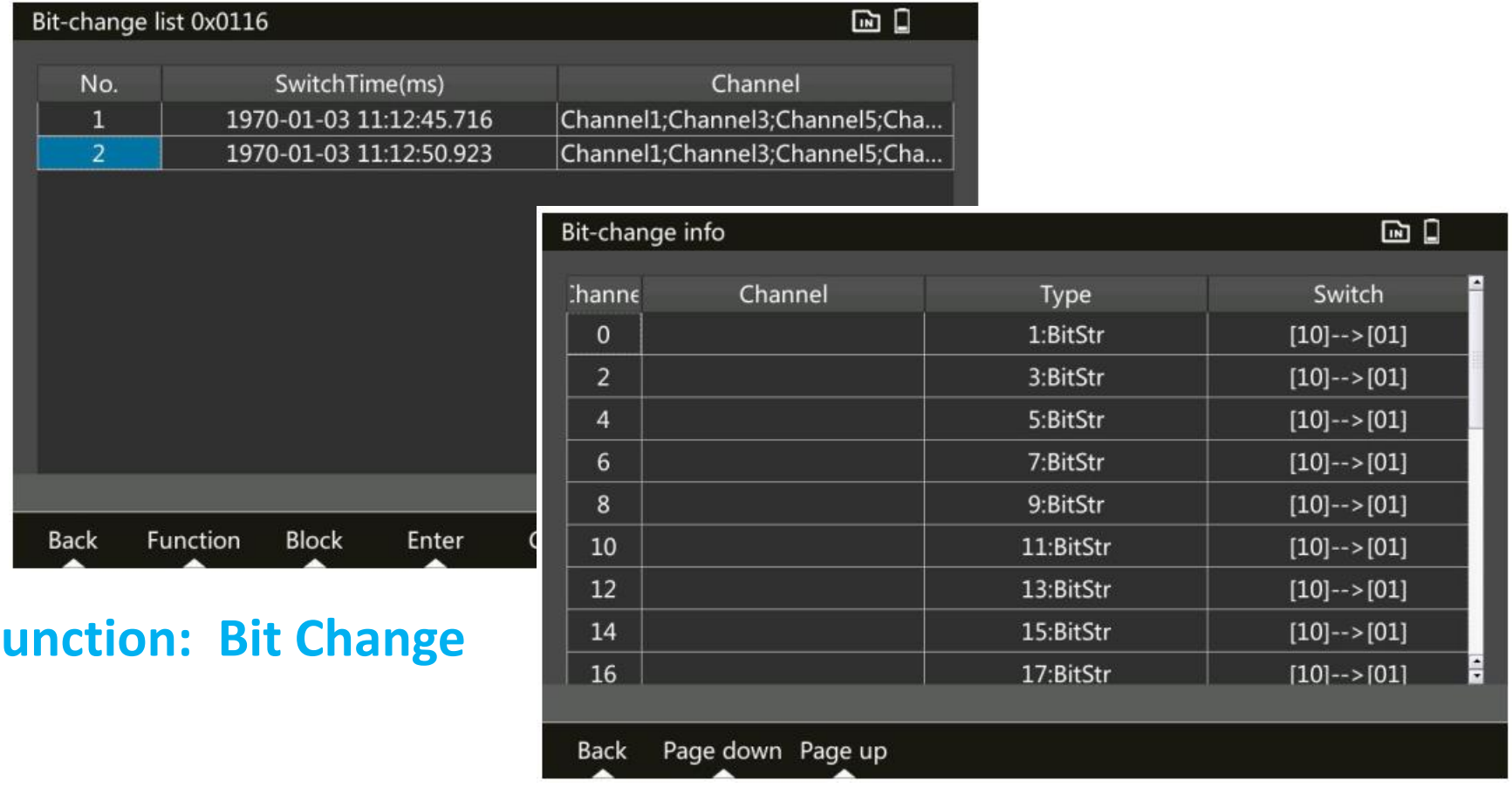
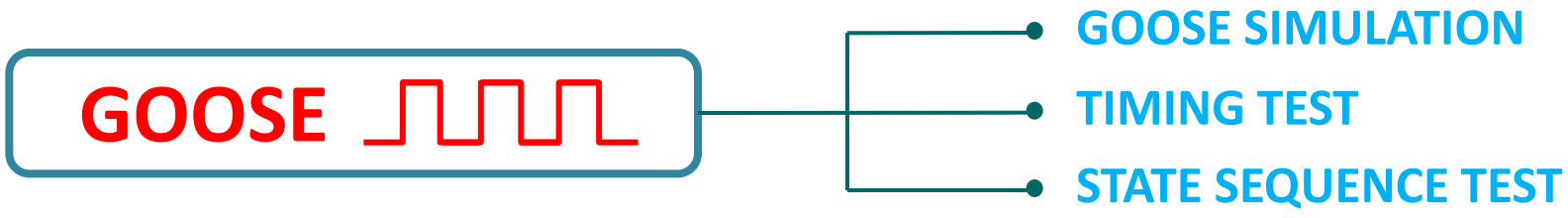
GOOSE Bit Change List & Info



Function: Bit Change

GOOSE – Functional Test



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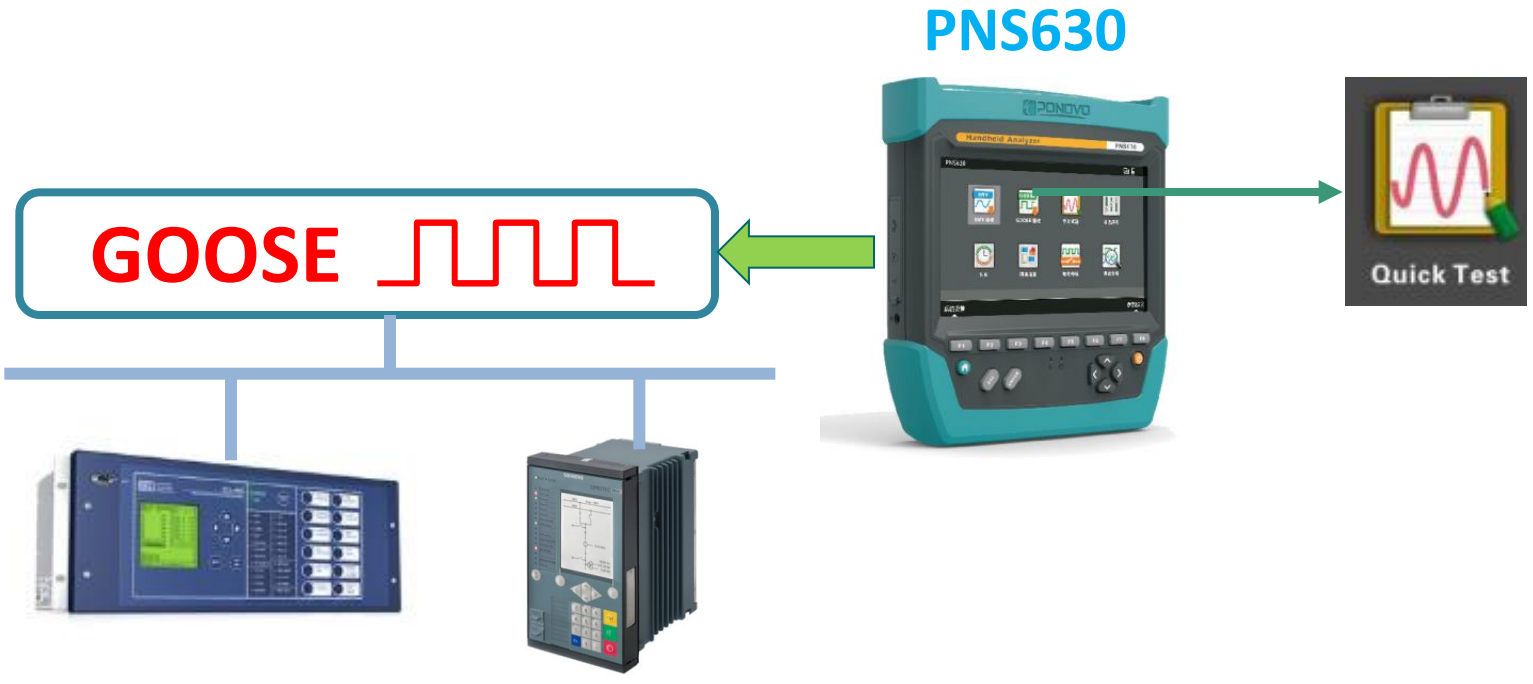
GOOSE Simulation



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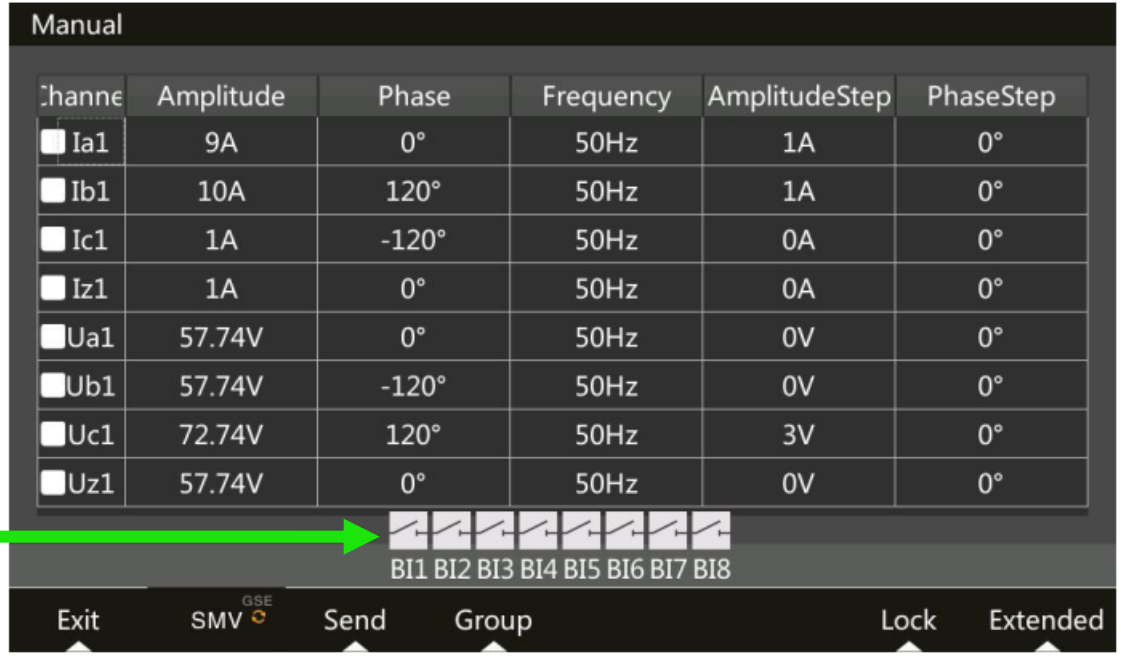
Quick – SMV Simulation

8x Virtual Binary Inputs (Mapped from GOOSE)



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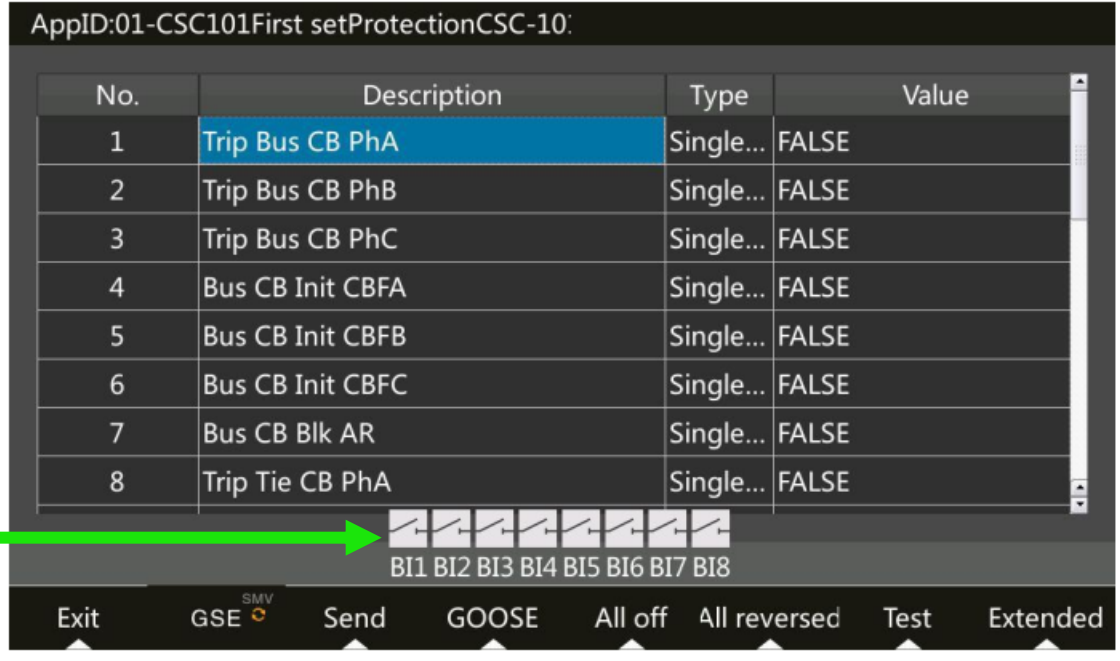
Quick – GOOSE Simulation

8x Virtual Binary Inputs (Mapped from GOOSE)



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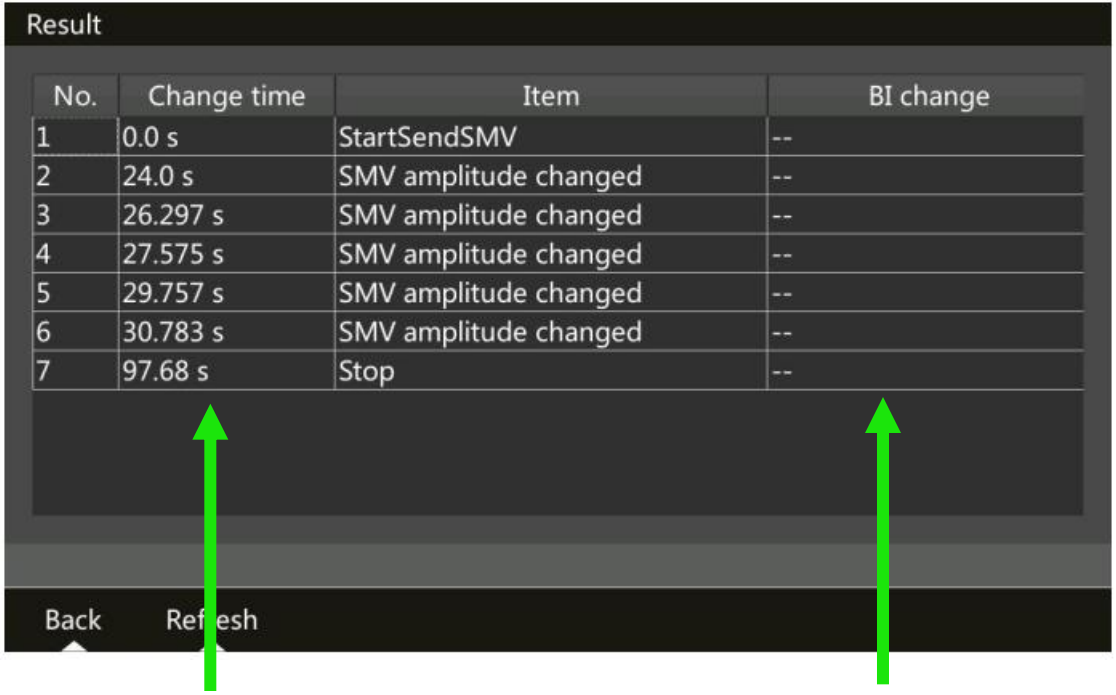
Quick – Results



SOE of SMV or GOOSE Change

Shows changes of Virtual BI's

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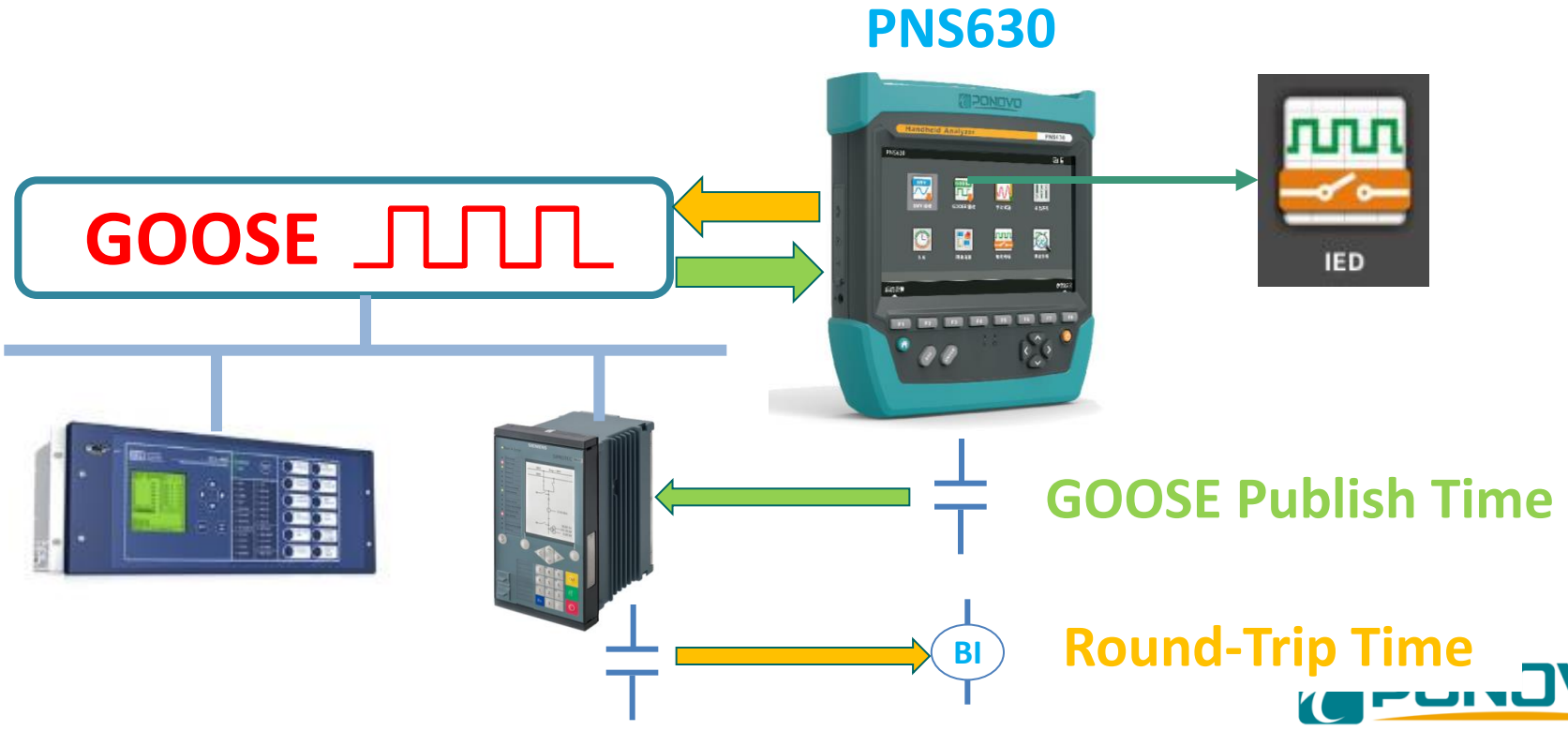
GOOSE Timing Tests



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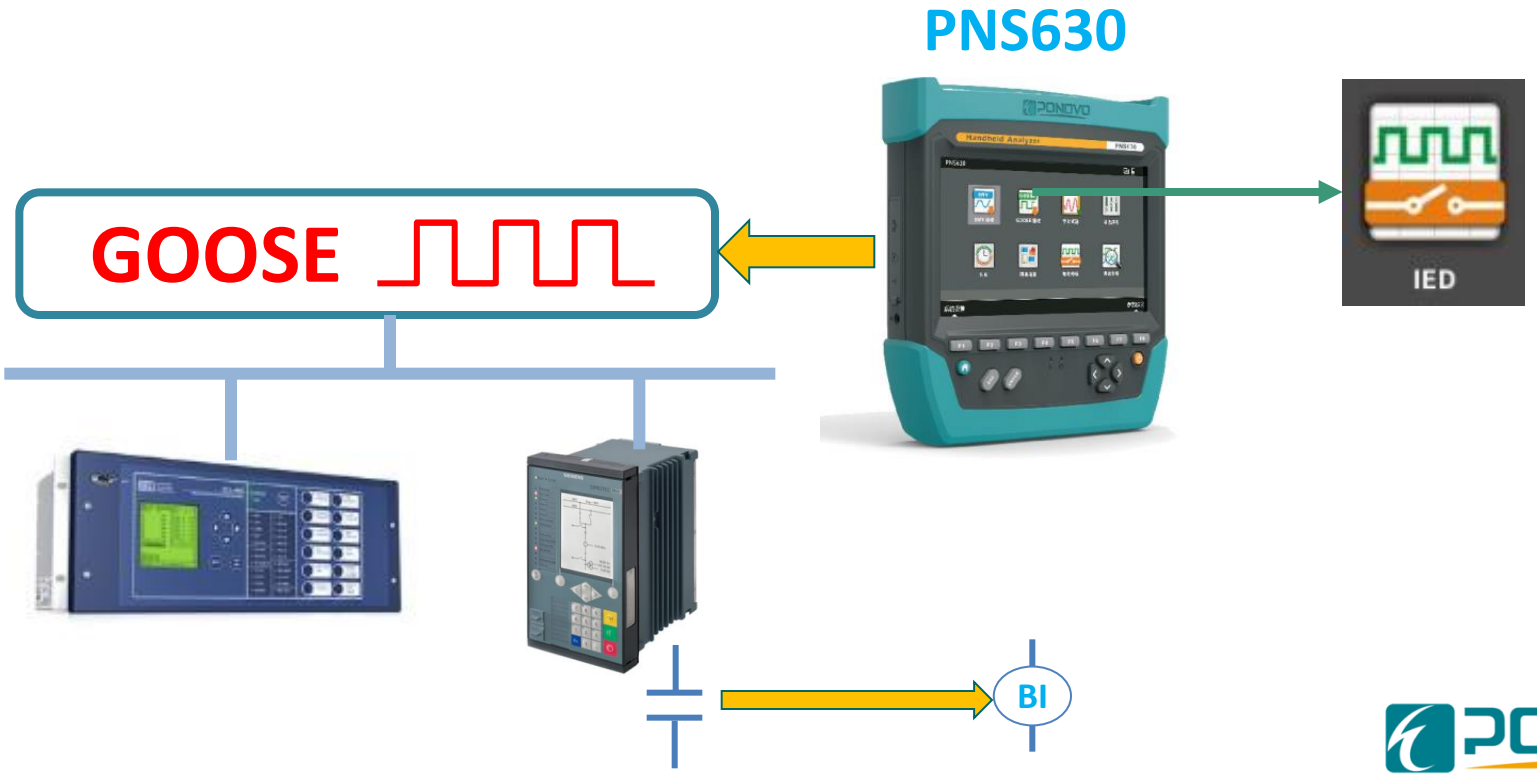
Round-Trip Time Test



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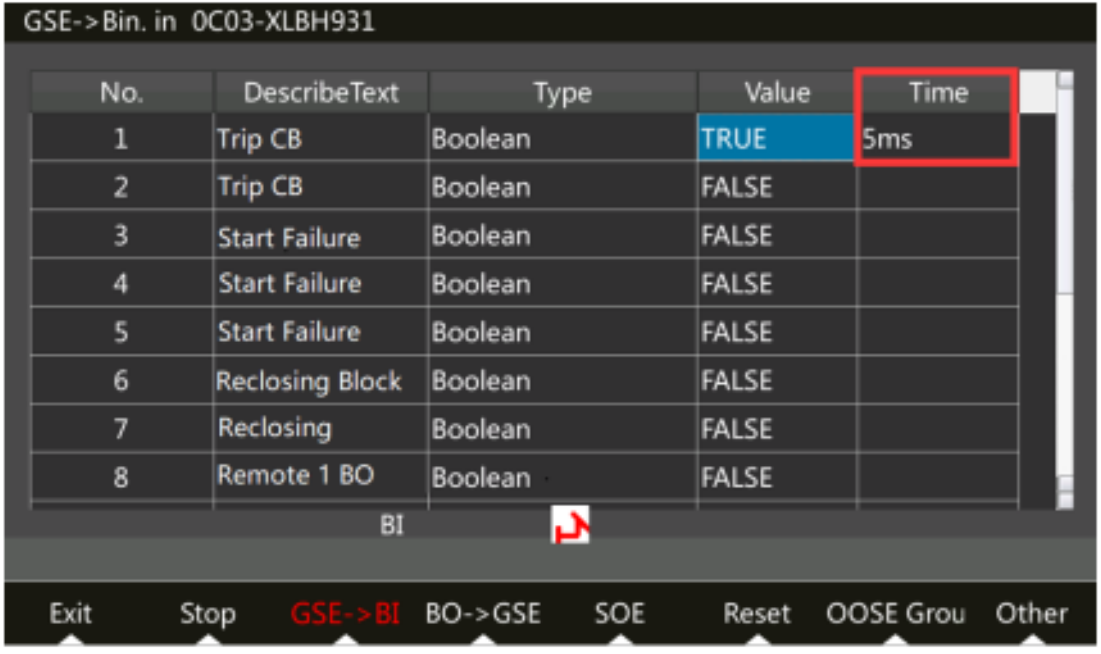
IED – GOOSE->BI Test



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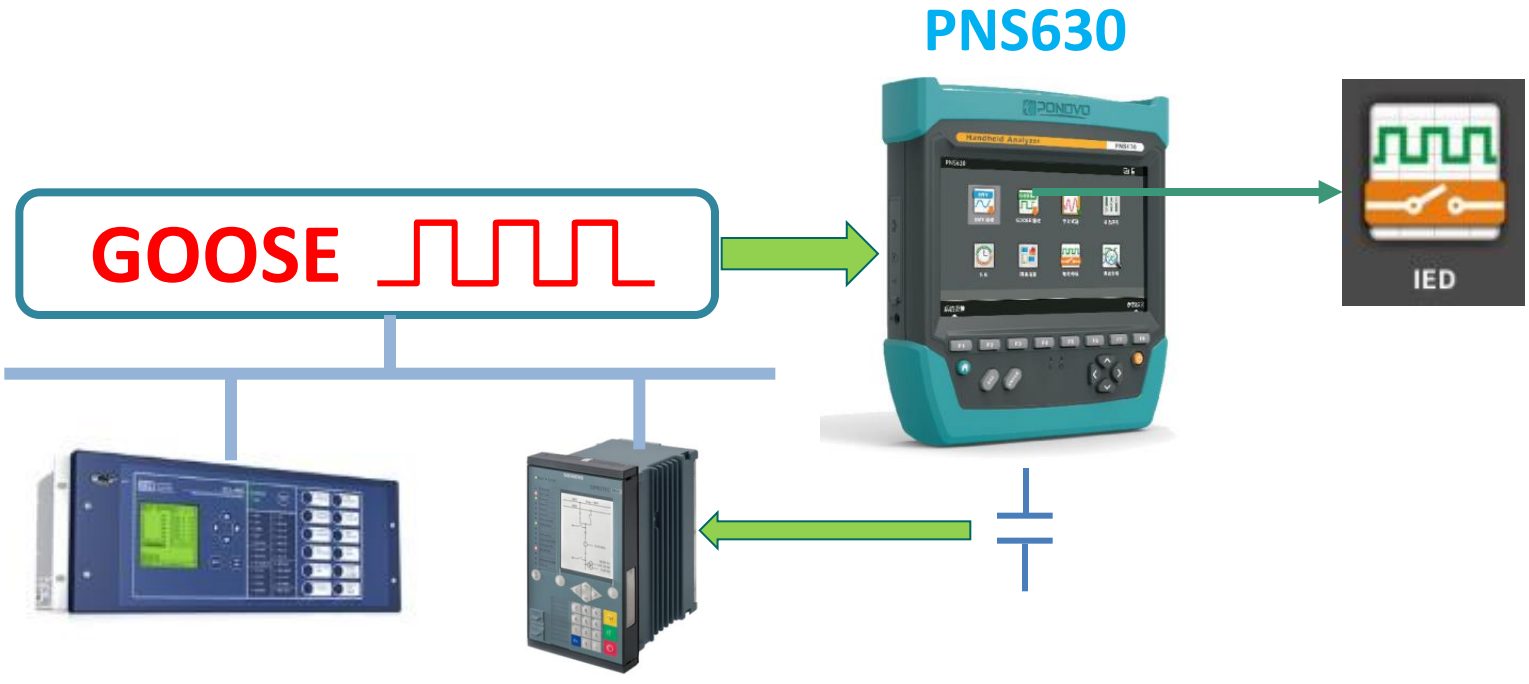
GOOSE Publish Time Test



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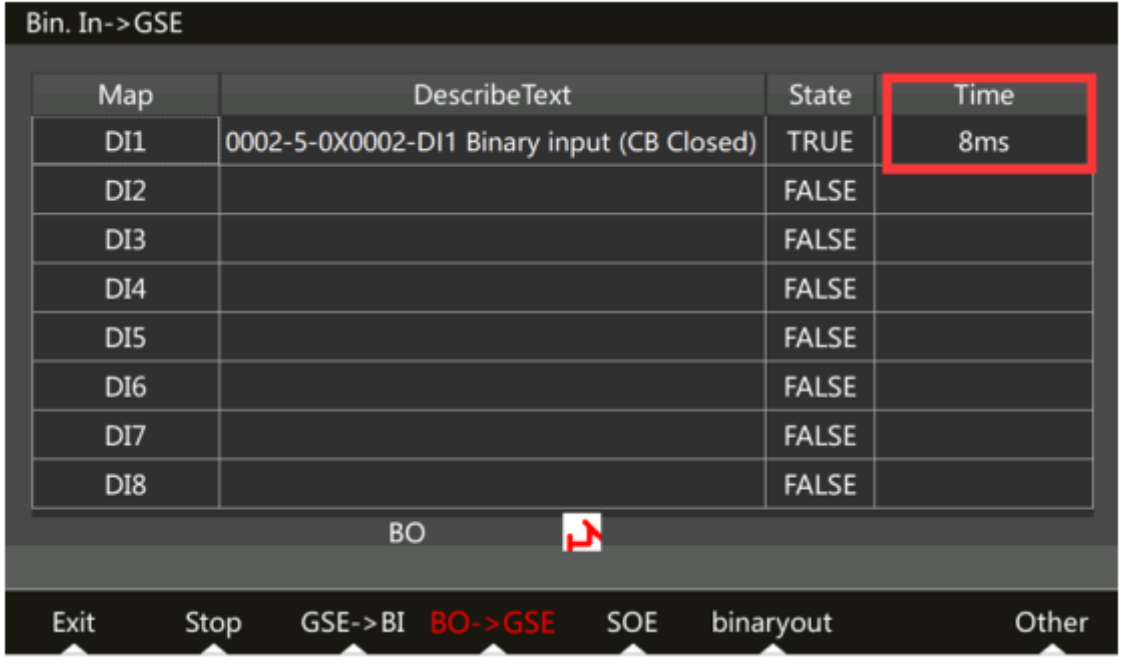
IED – BO->GOOSE Test



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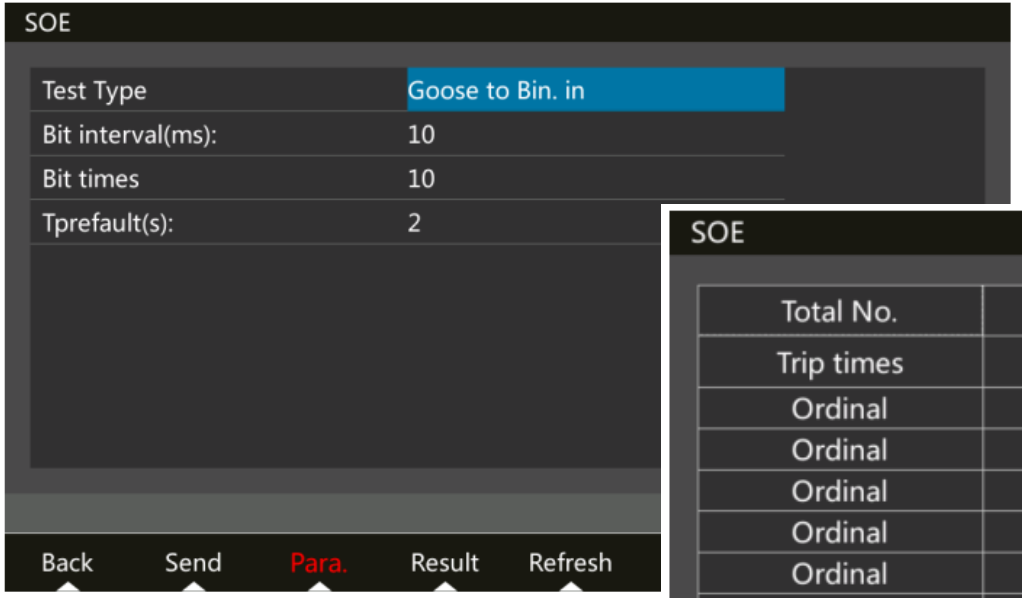
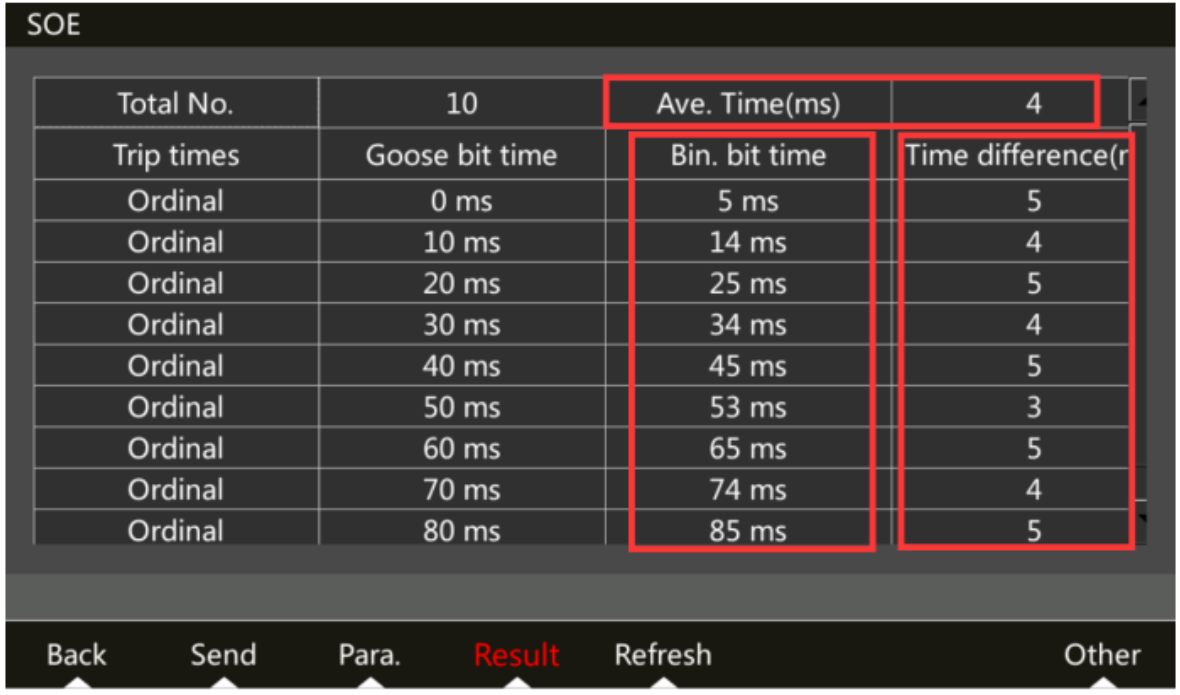
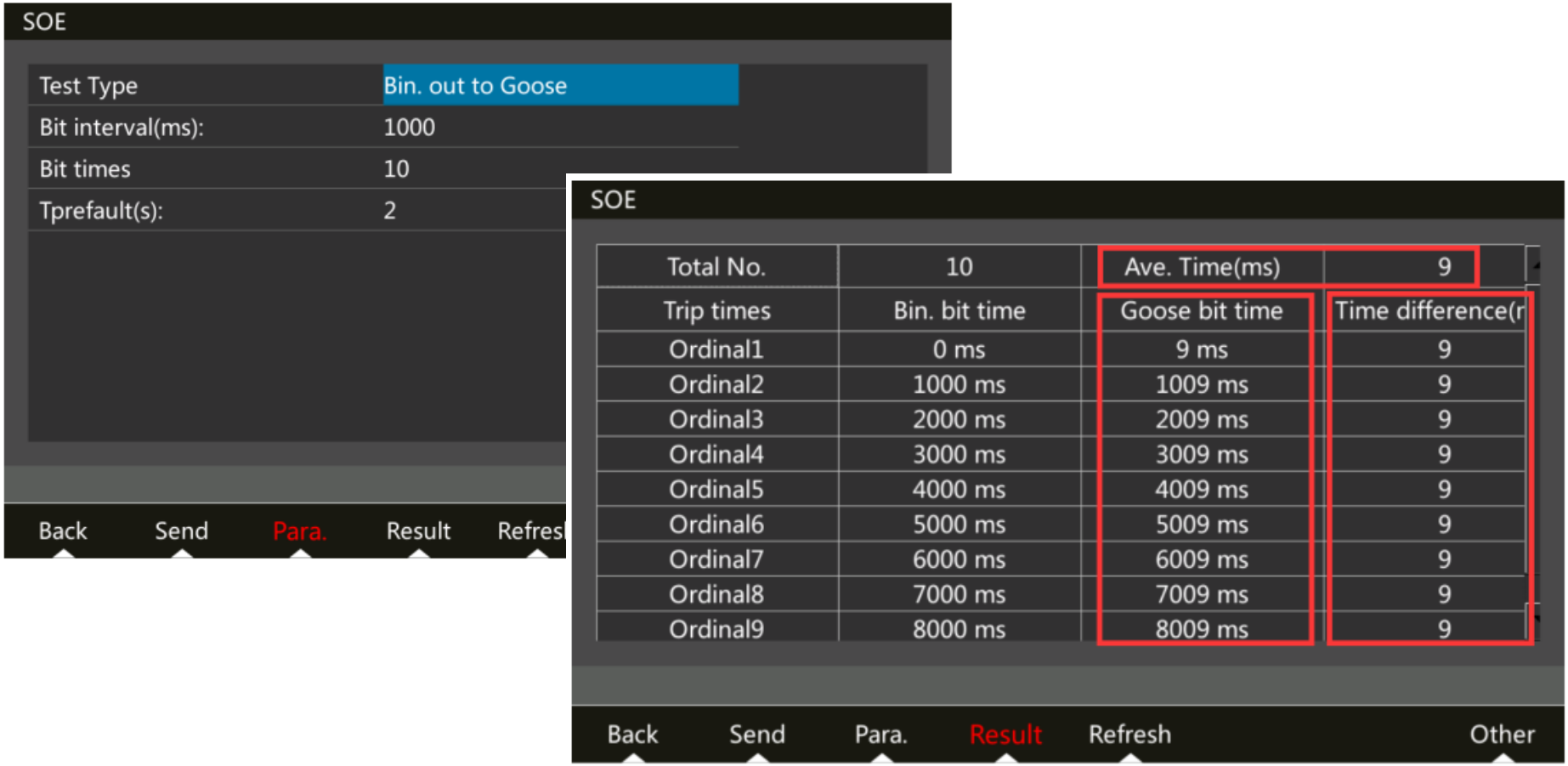
IED – SOE Test (GOOSE->BI)

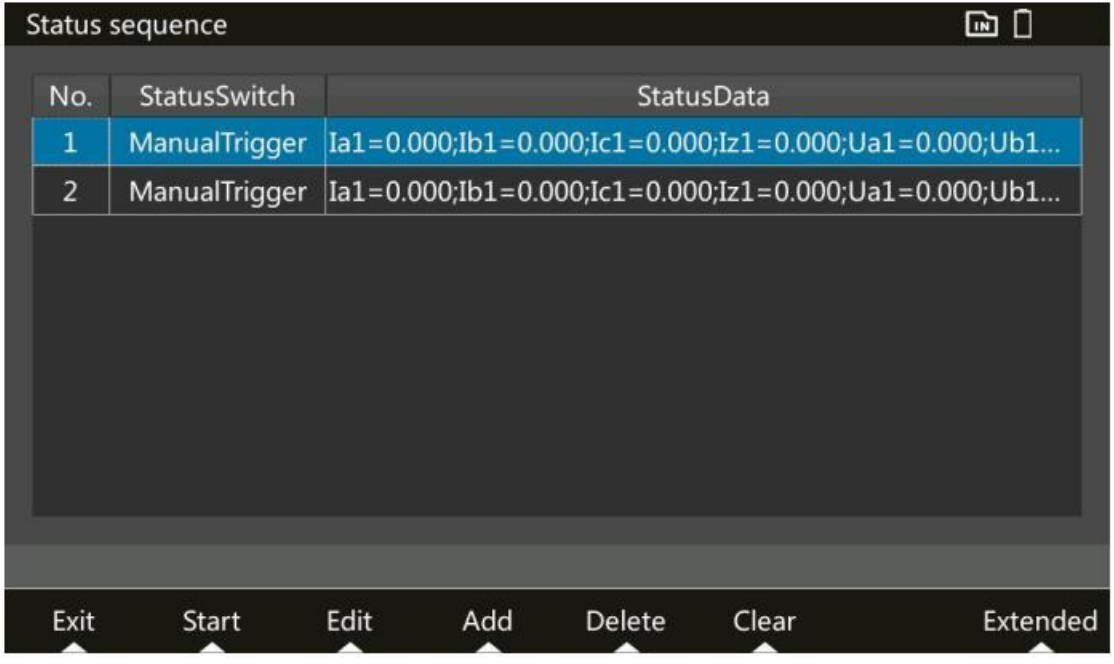




IED – SOE Test (BO->GOOSE)



GOOSE – State Sequence Test



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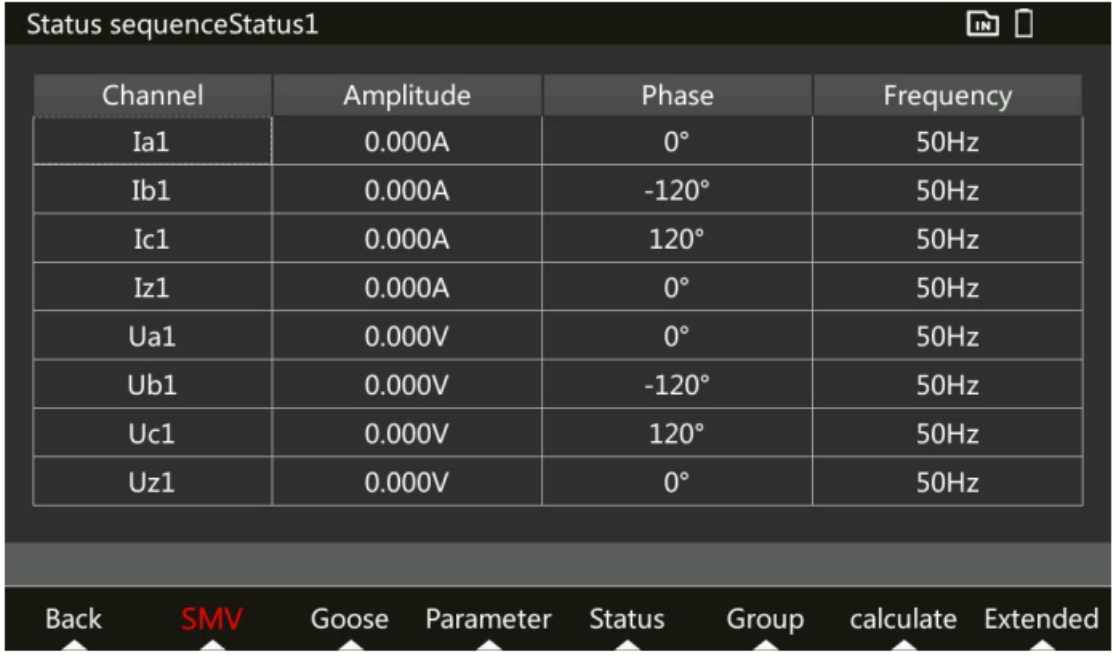
GOOSE – State Sequence Test



Set SMV Values

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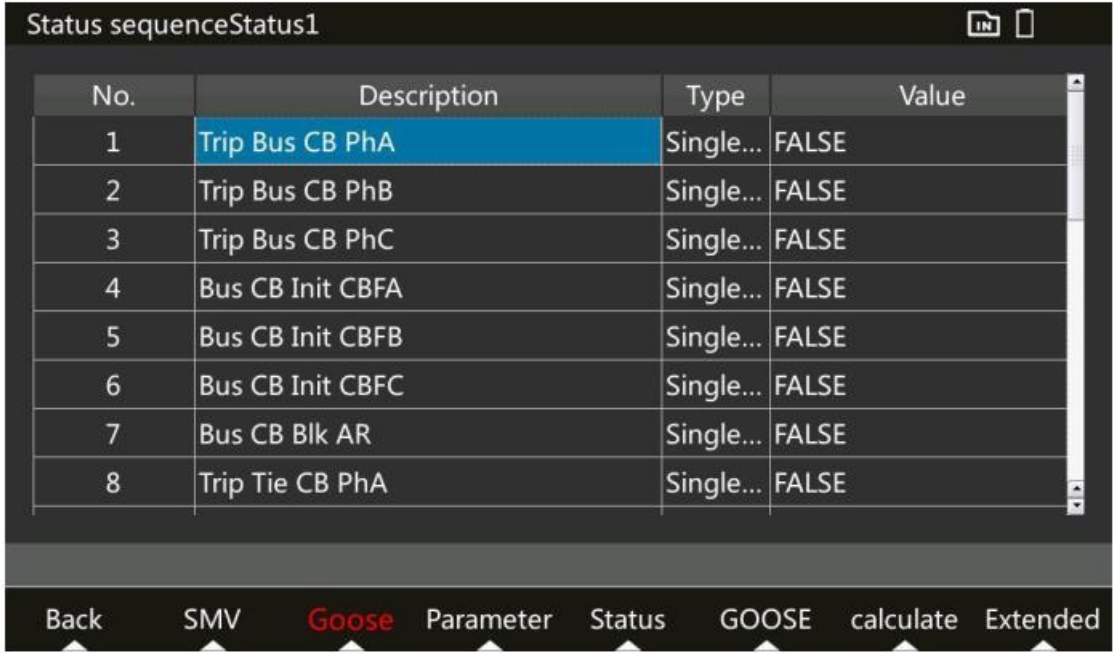
GOOSE – State Sequence Test



Set GOOSE Values

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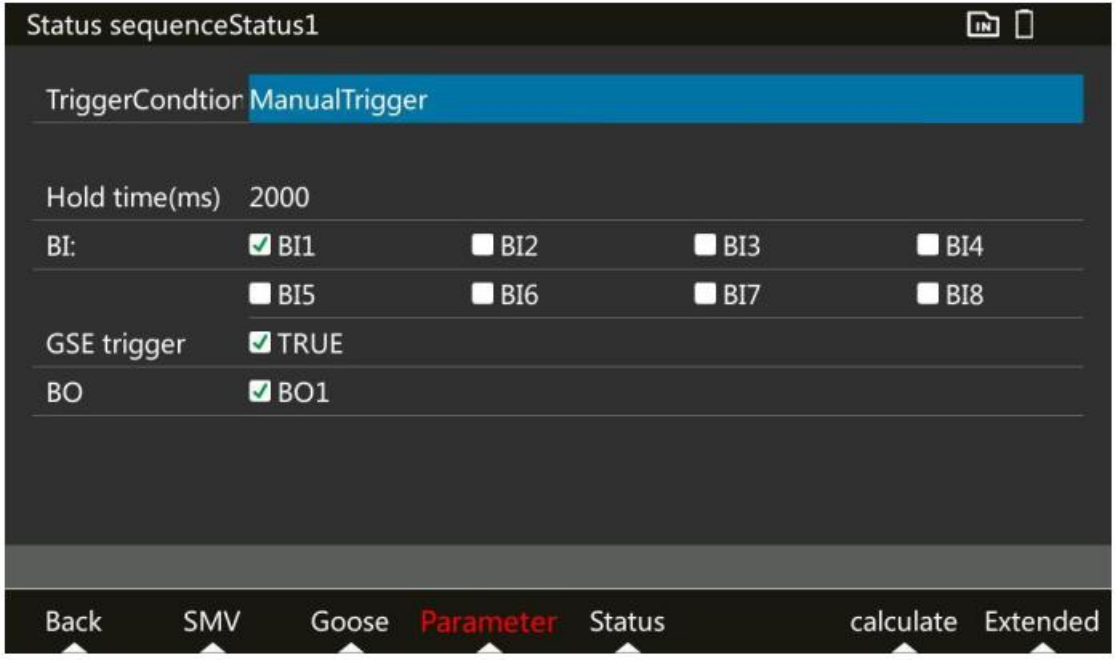
GOOSE – State Sequence Test



Set Trigger

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SMV TESTING

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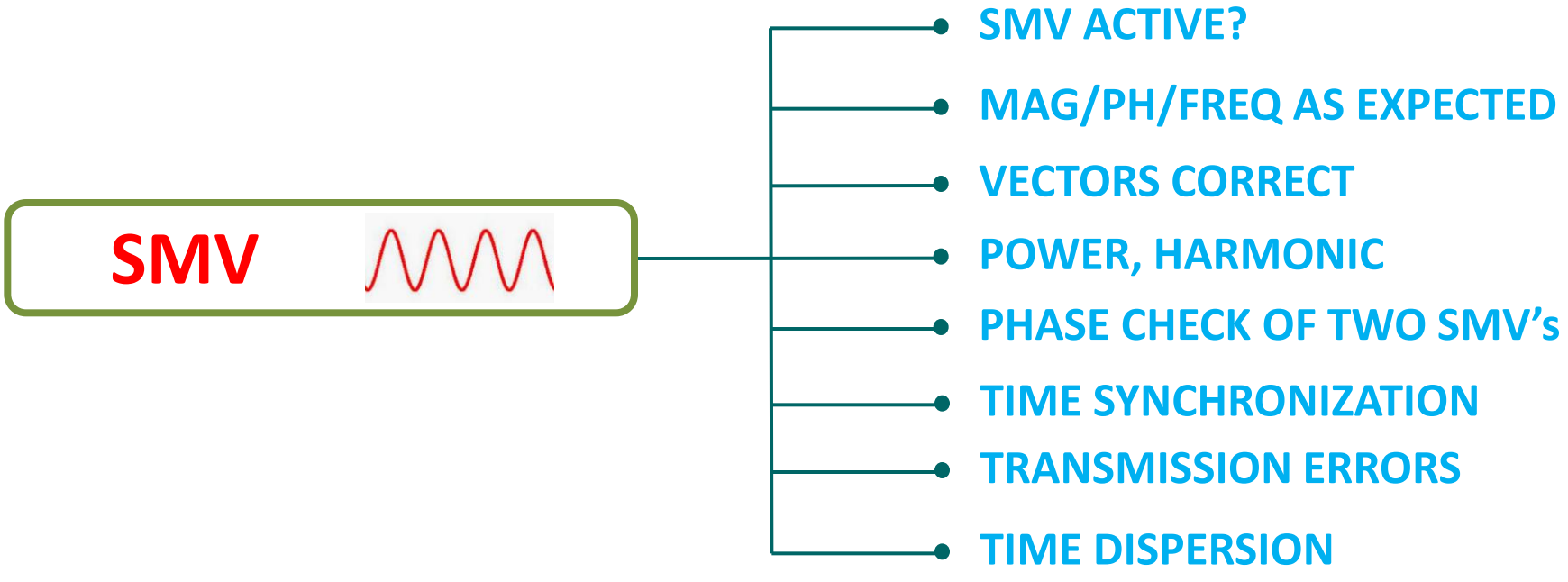
SMV – What To Check?



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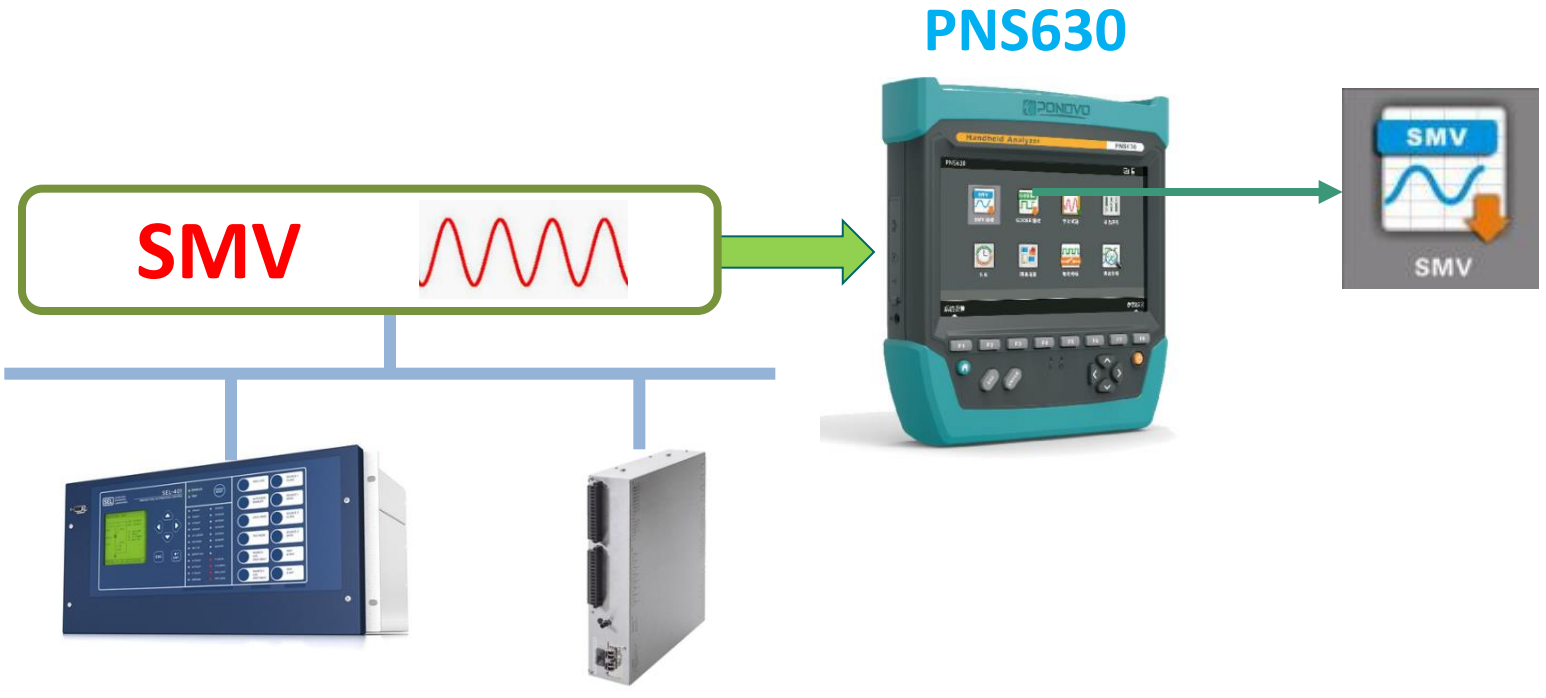
SMV Subscription



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SMV Active?

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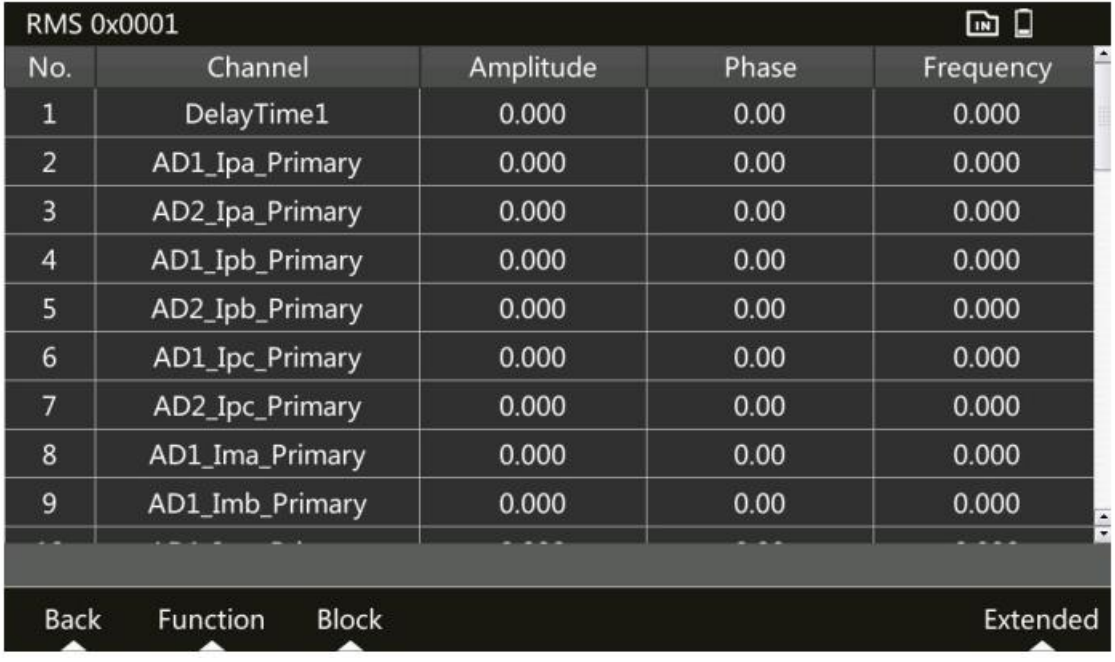
SMV MAG/PH/FREQ



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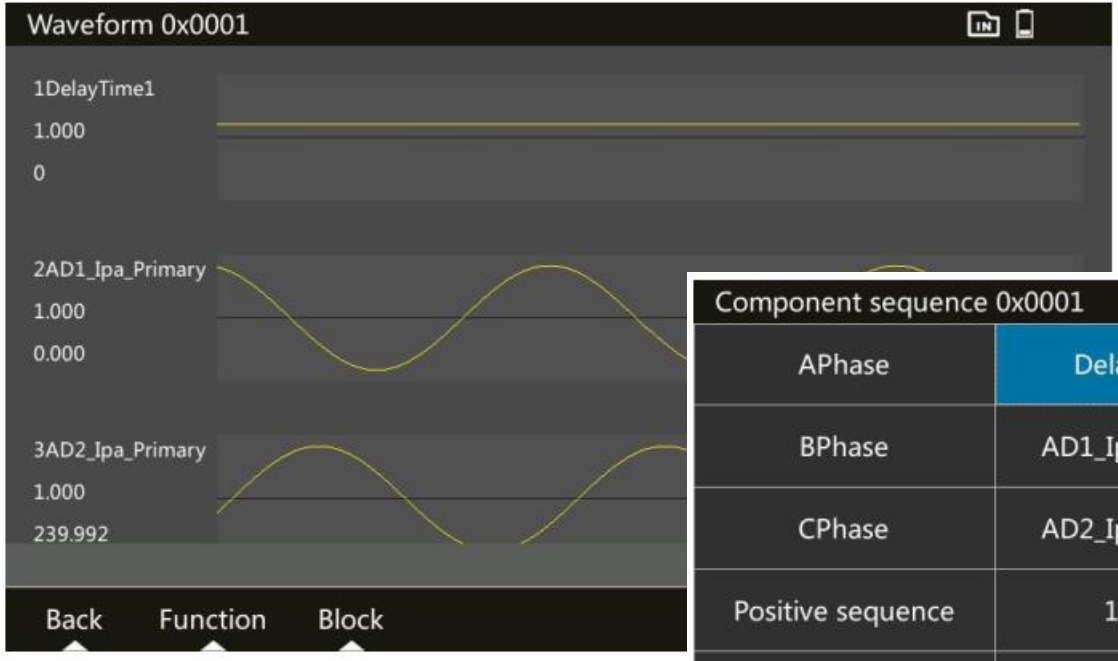
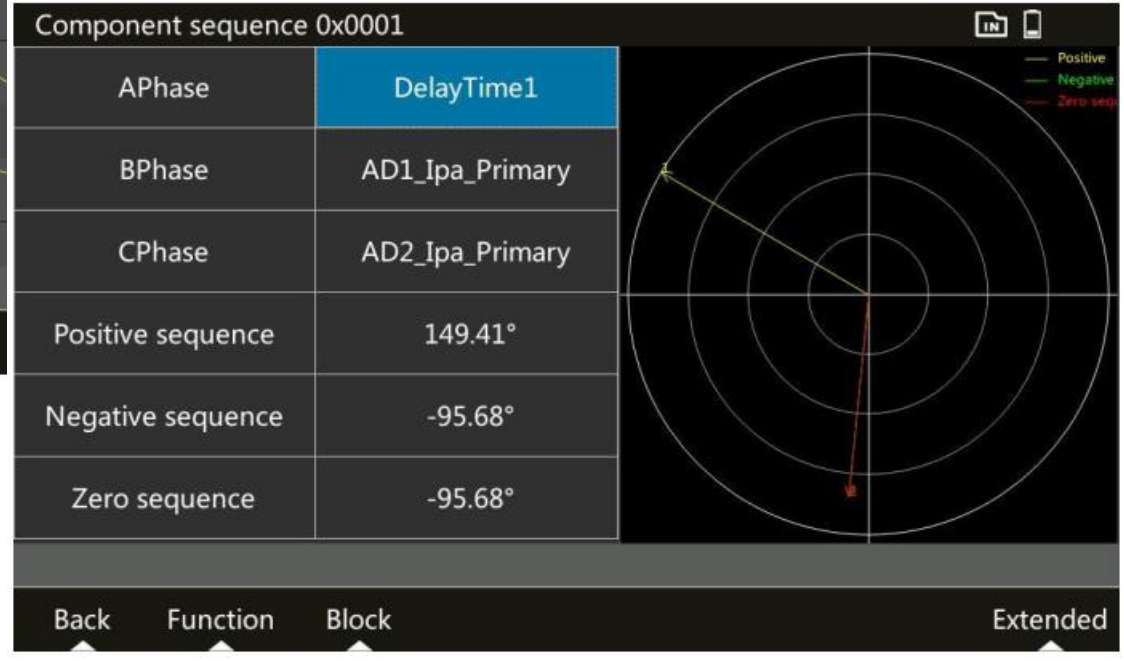
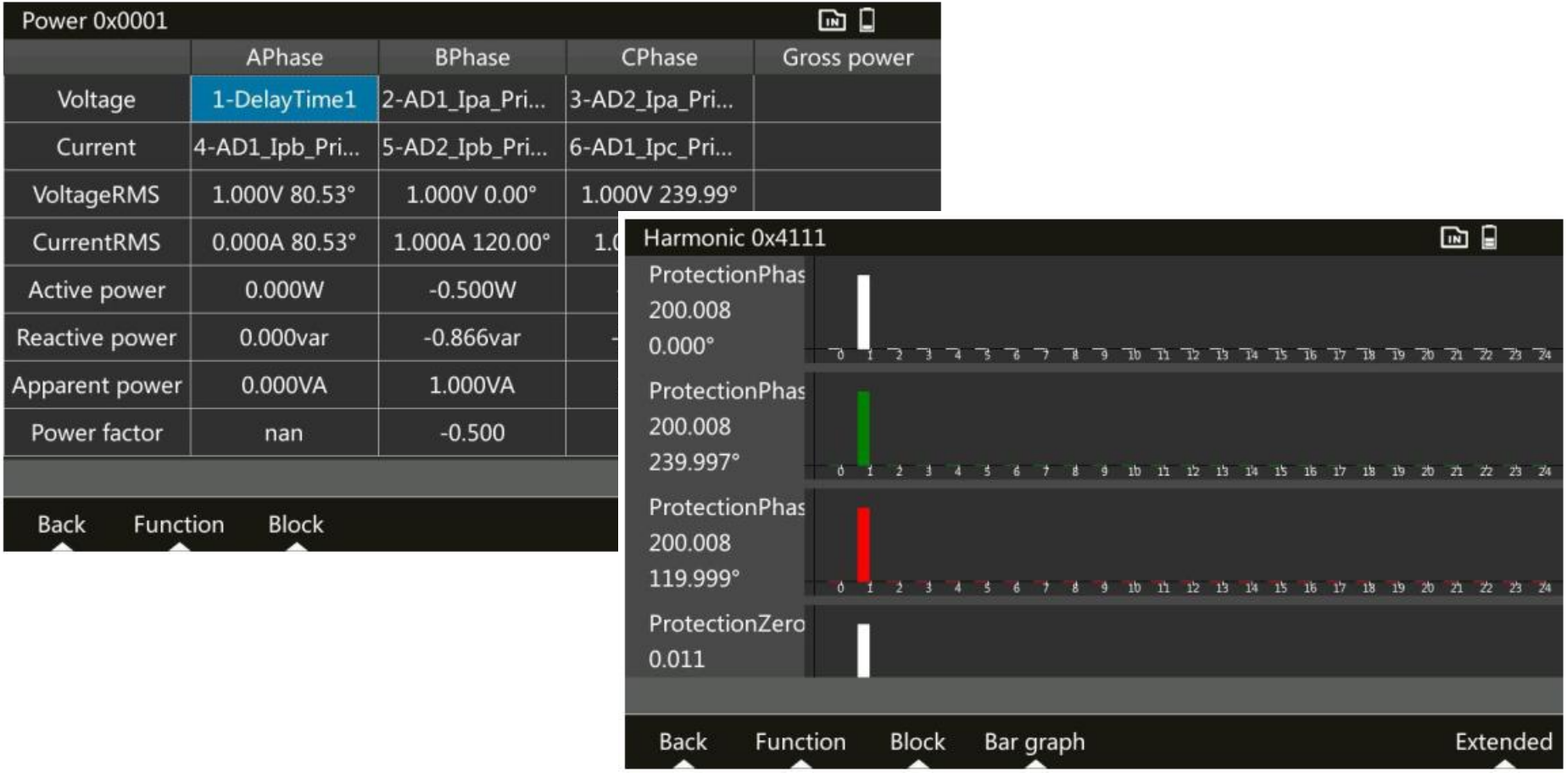
SMV WAVEFORM & VECTORS

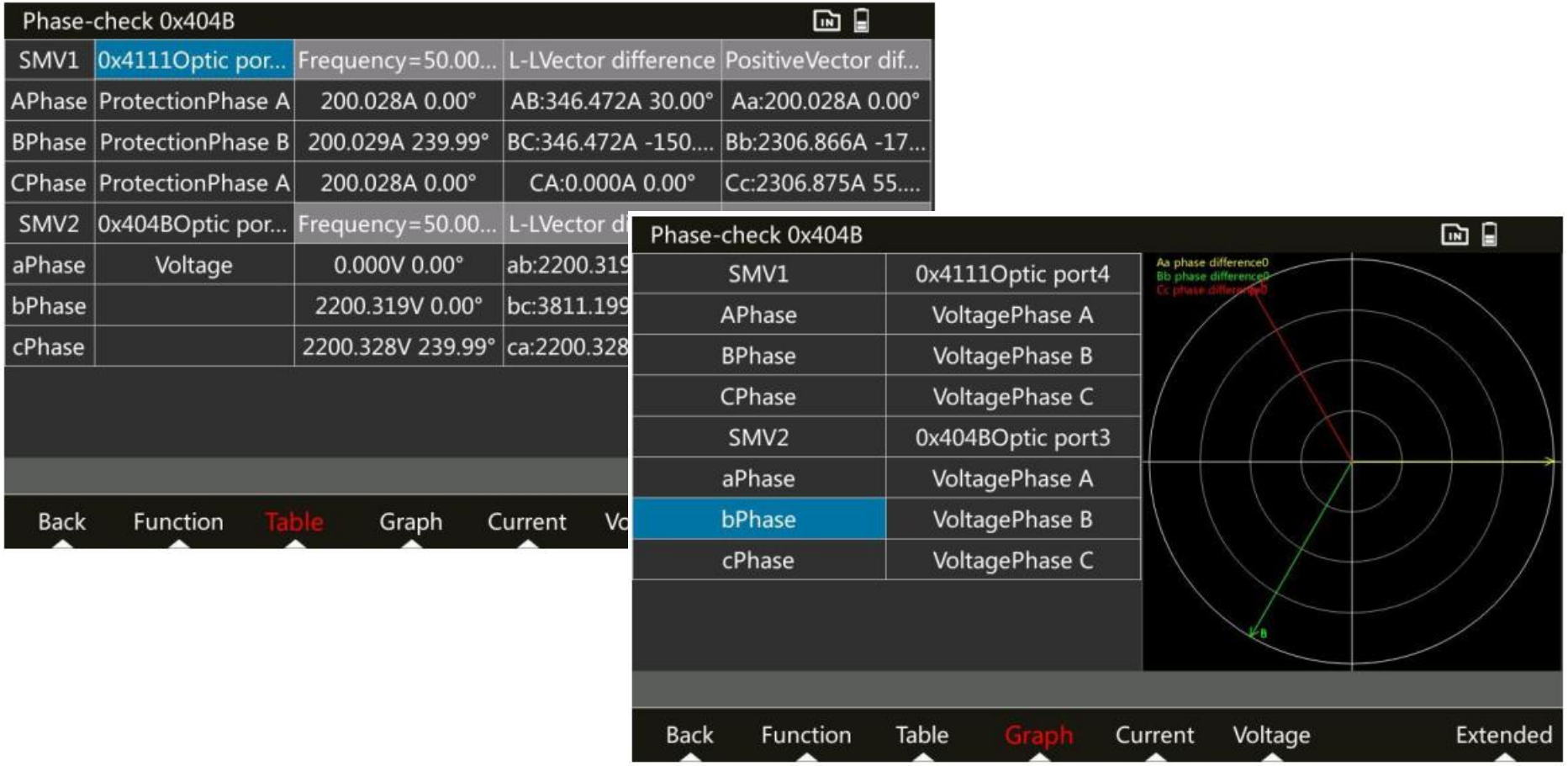




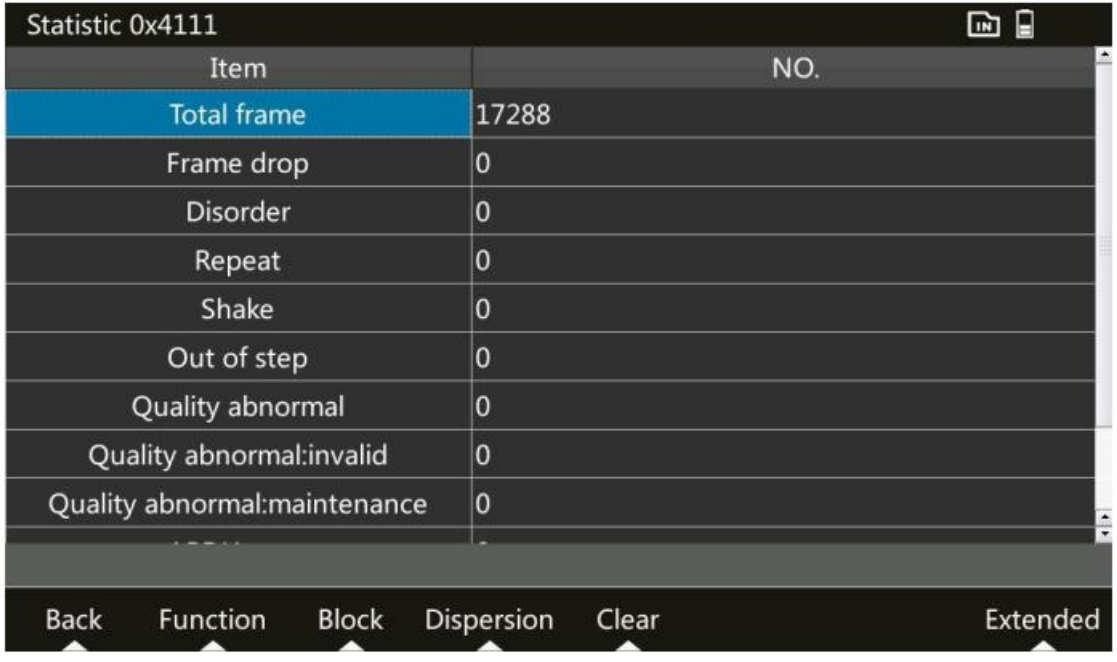
SMV POWER/HARMONICS



SMV PHASE CHECK



SMV TIME SYNC & TRANSMISSION ERRORS



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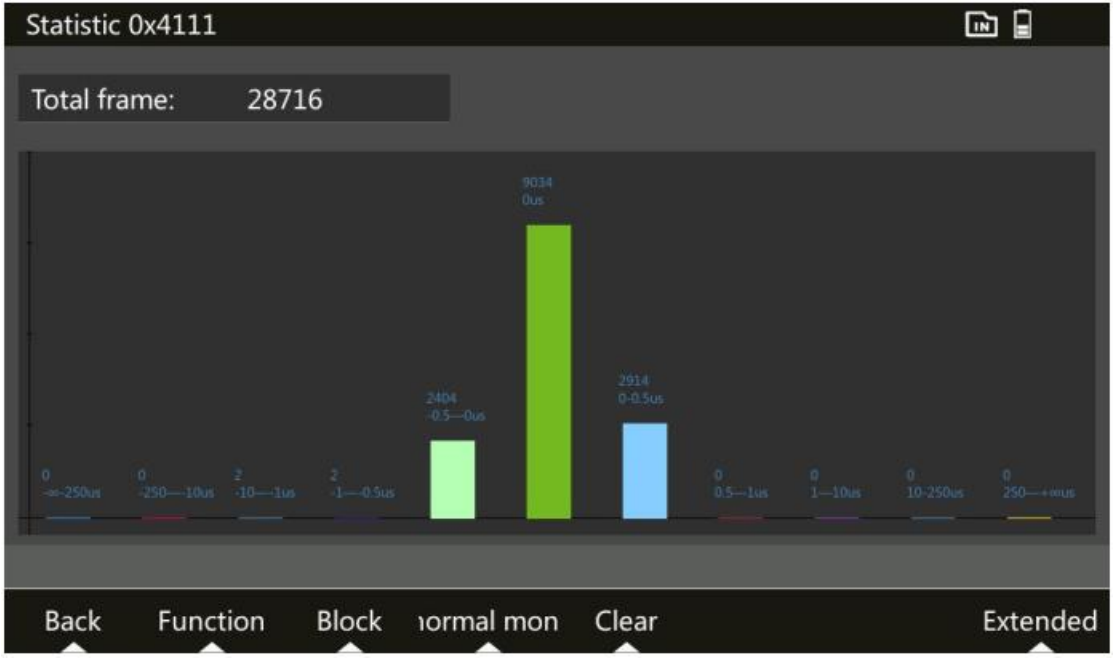
SMV TIME DISPERSION



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SMV – Functional Test

SMV

- SMV SIMULATION
- STATE SEQEUNCE TEST

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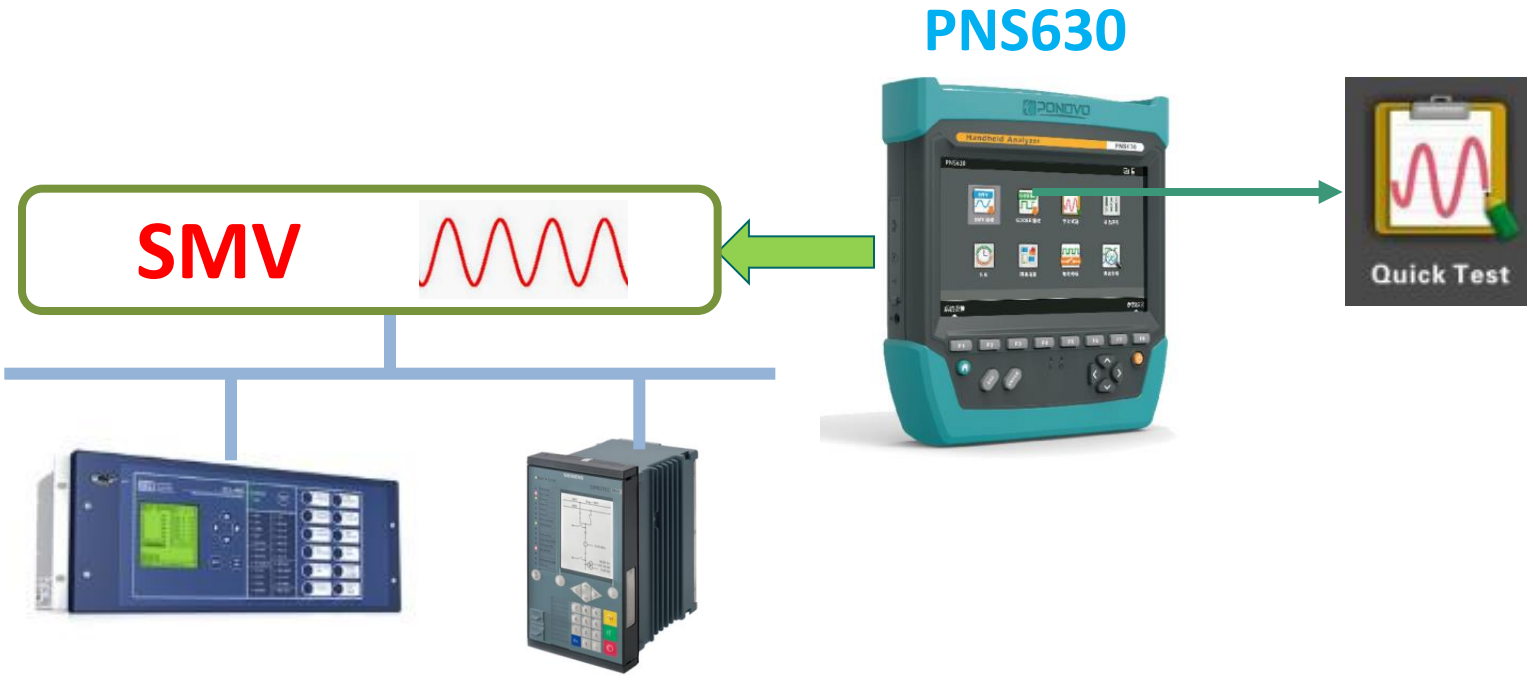
SMV Simulation



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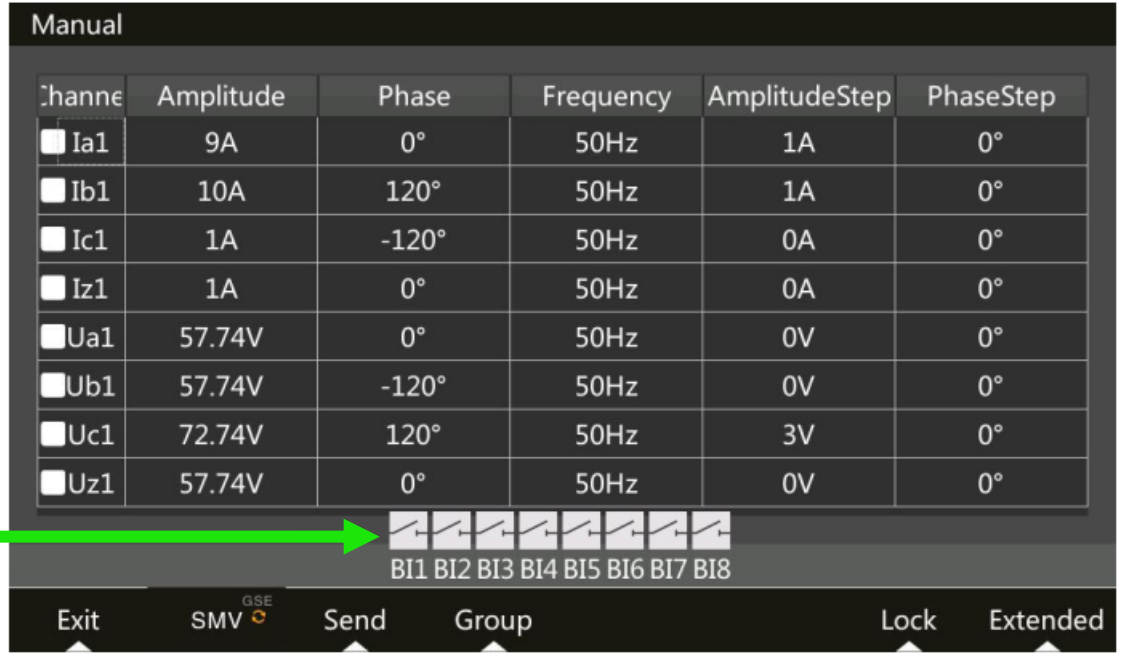
Quick – SMV Simulation

8x Virtual Binary Inputs (Mapped from GOOSE)



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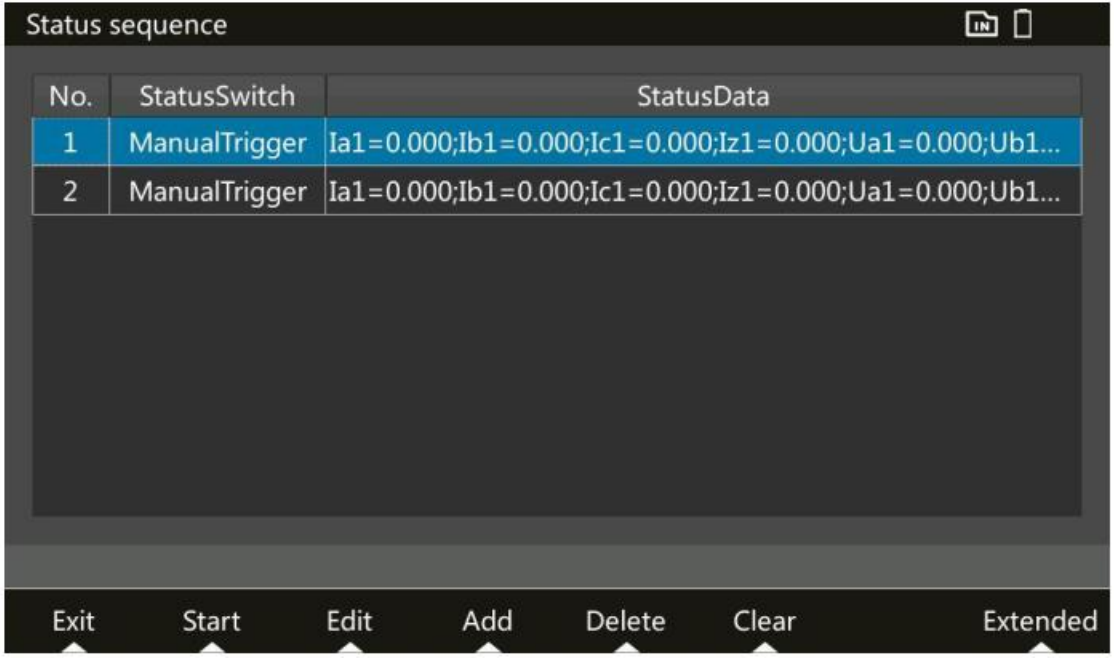
State Sequence Test



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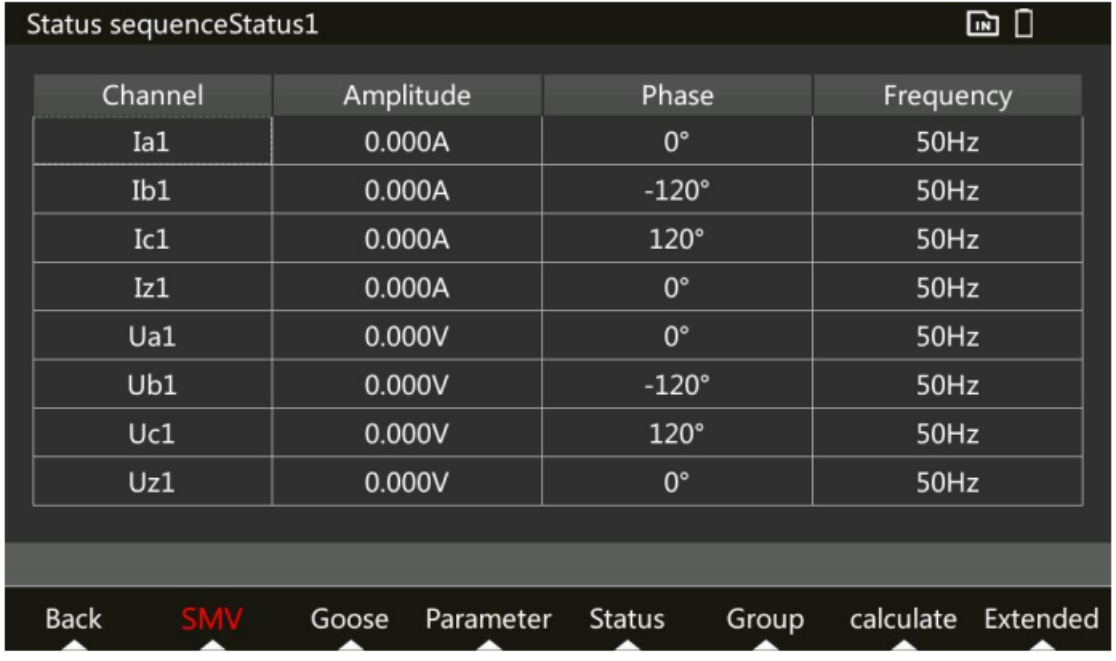
SMV – State Sequence Test



Set SMV Values

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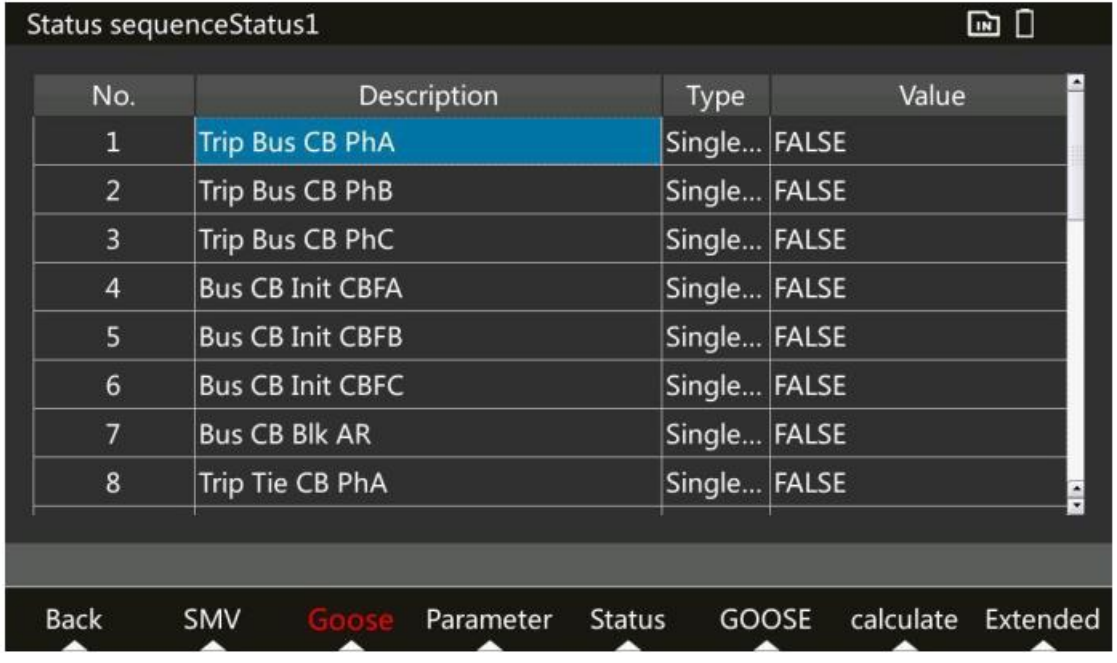
SMV – State Sequence Test



Set GOOSE Values

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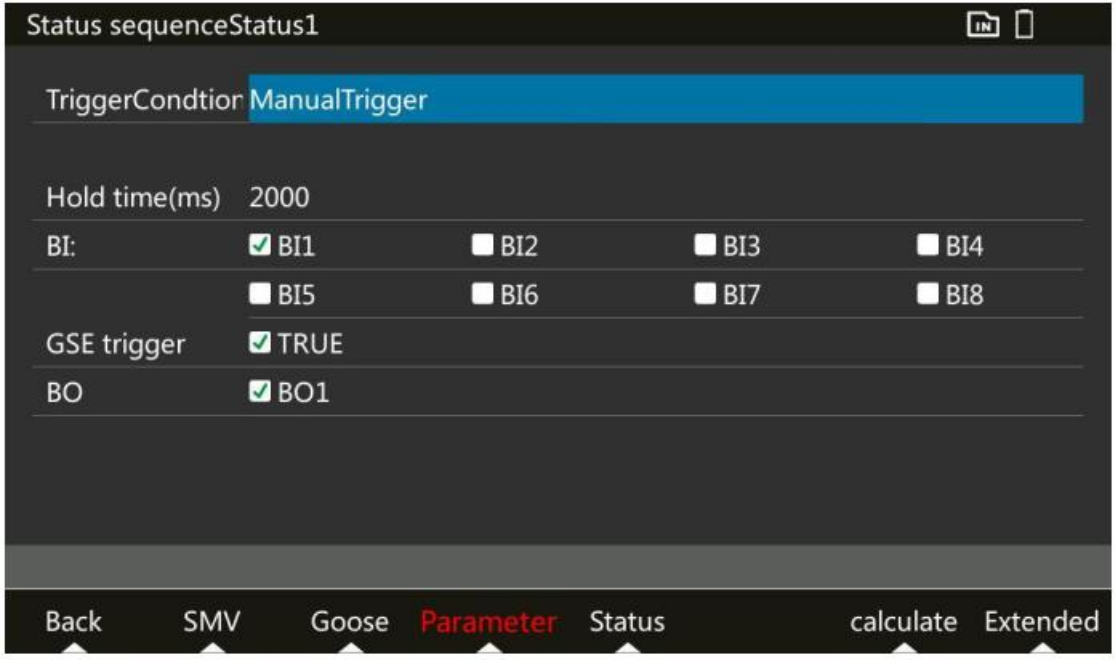
SMV – State Sequence Test



Set Trigger

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WAVEFORM RECORDING

PONOVO POWER CO., LTD

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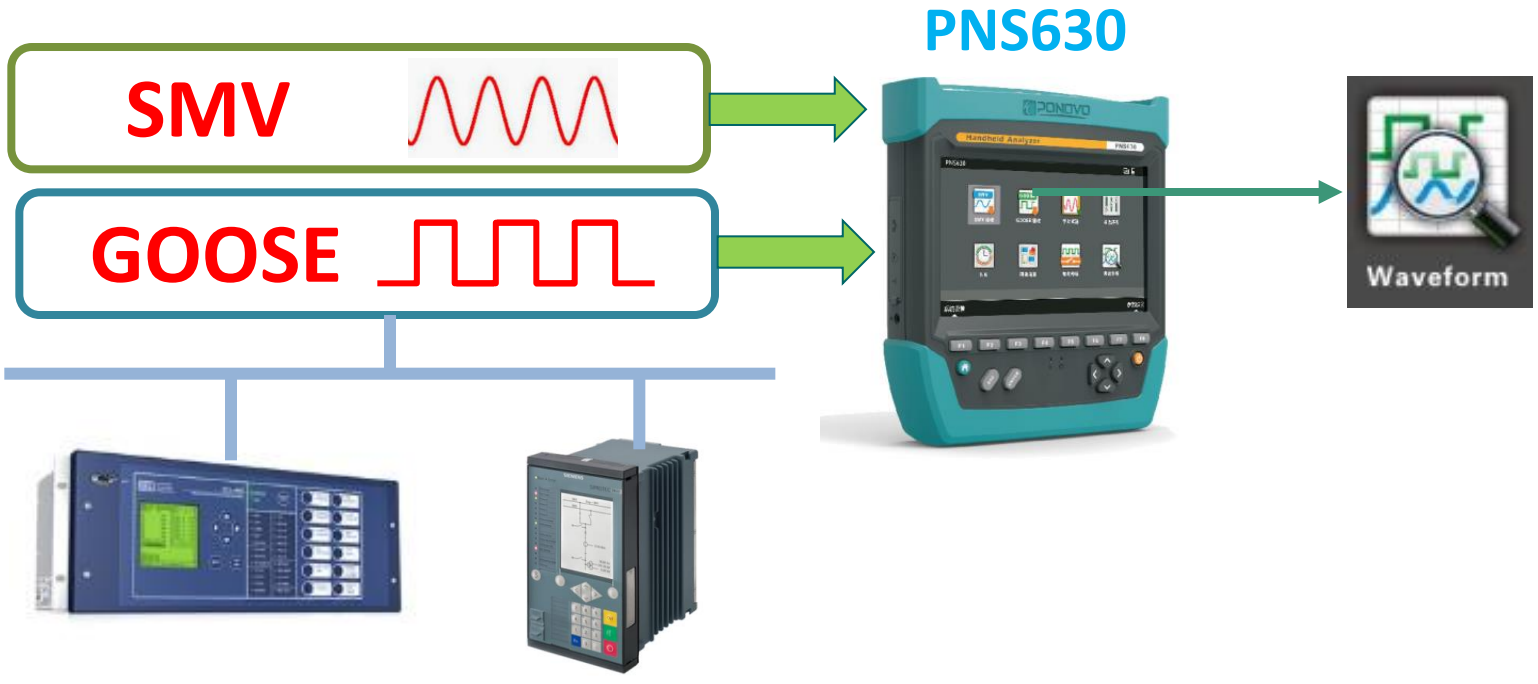
Waveform Recording



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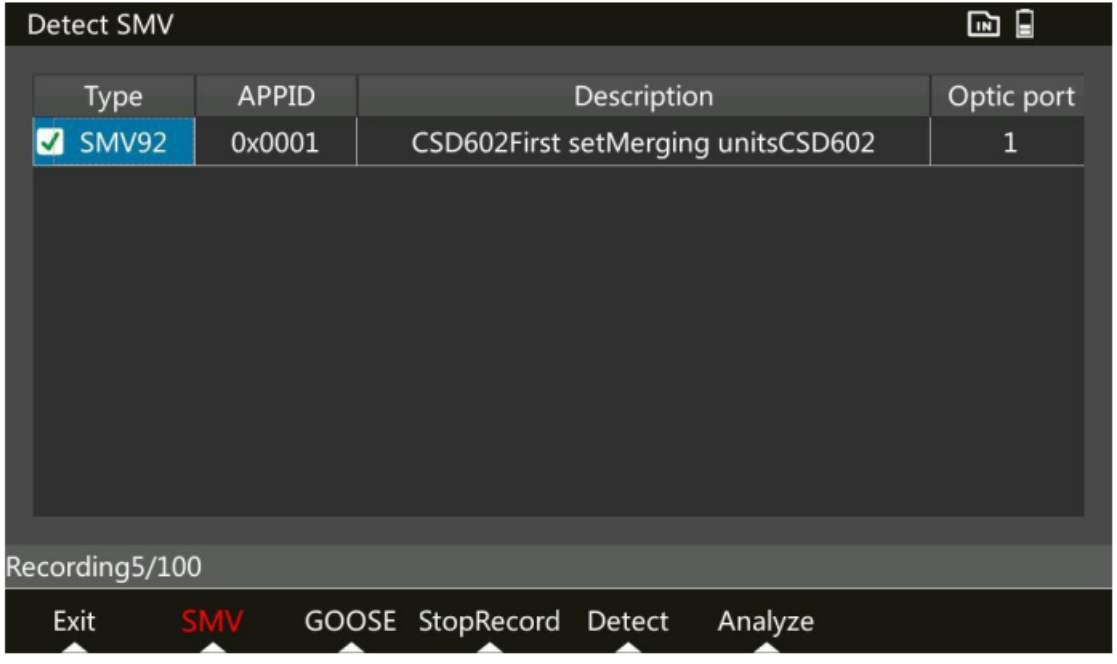
Waveform Recording



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OPTIC-POWER TESTING

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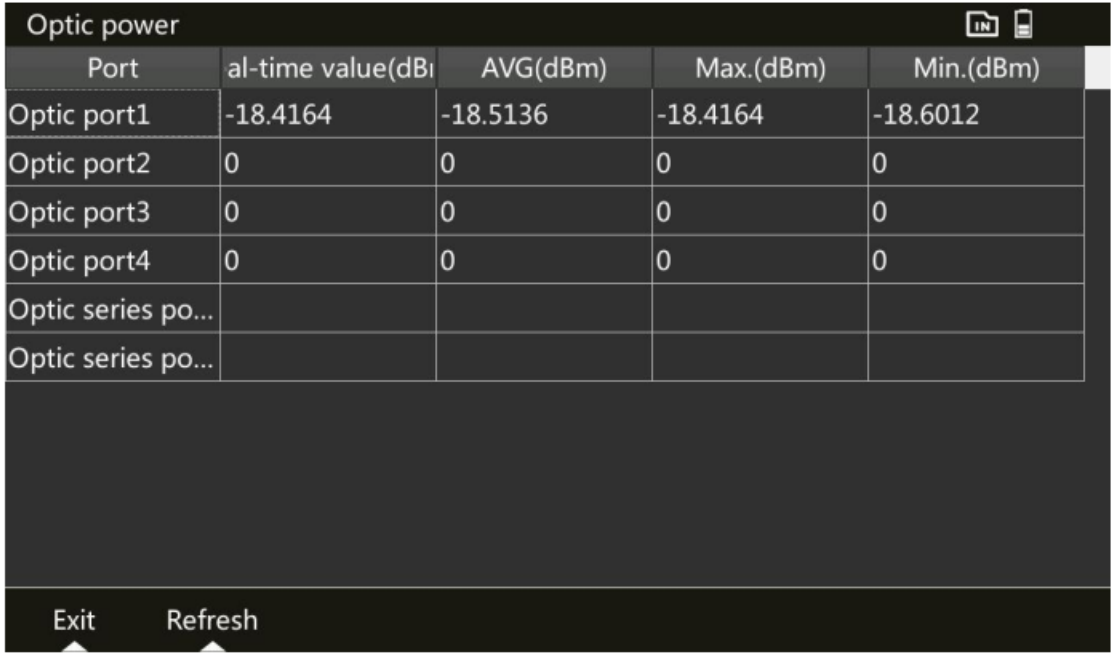
Optic-Power Testing



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TIME SOURCE TESTING

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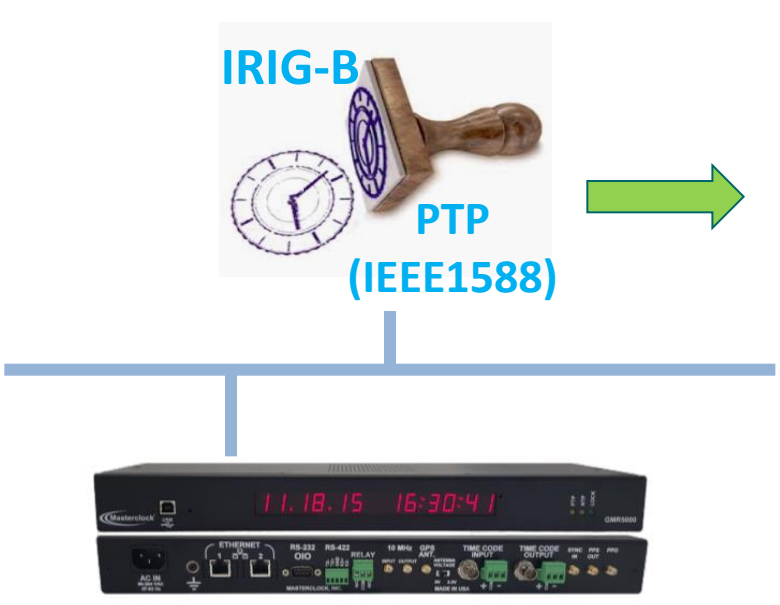
Time Source Testing



PNS630

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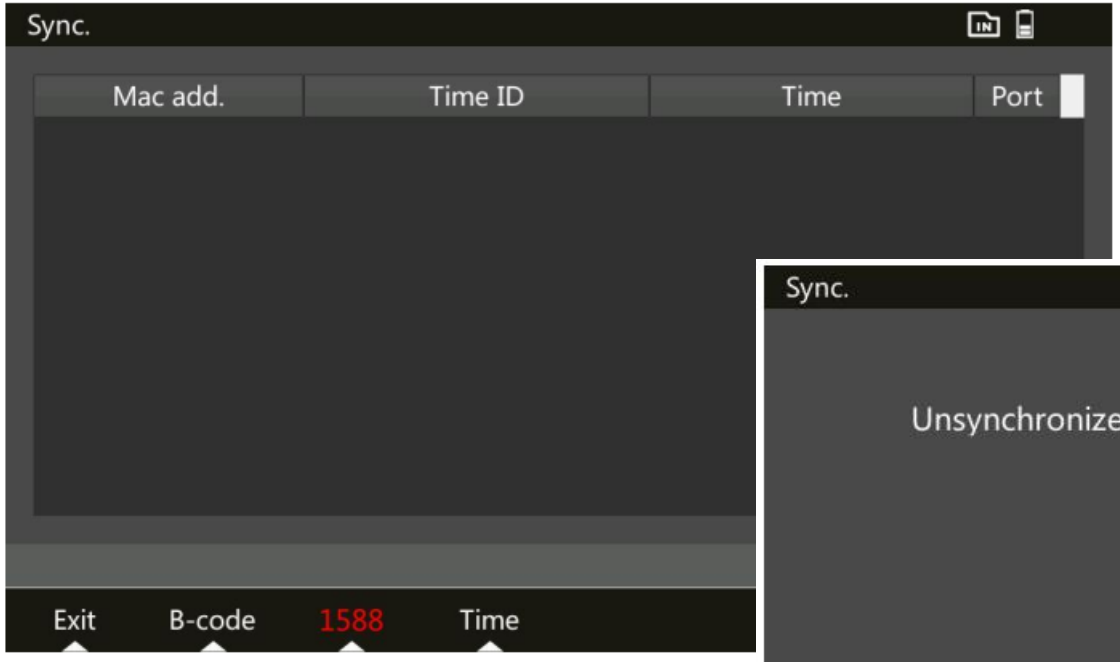
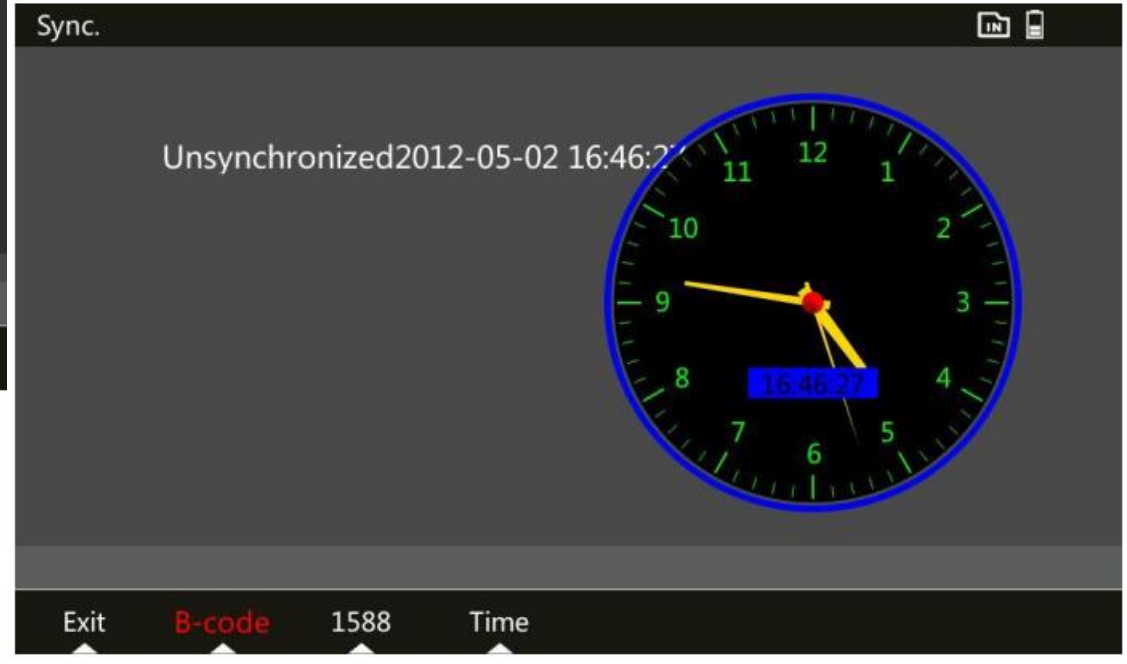
Time Source Testing





NETWORK TRAFFIC TESTING

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Network Testing

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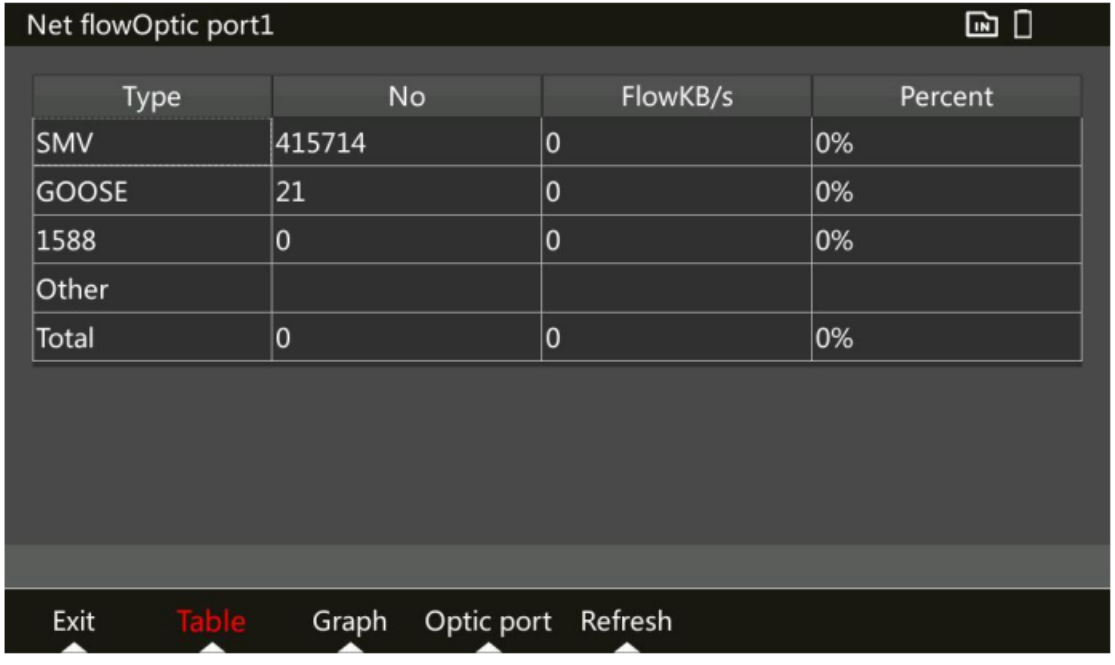
Network Traffic Testing



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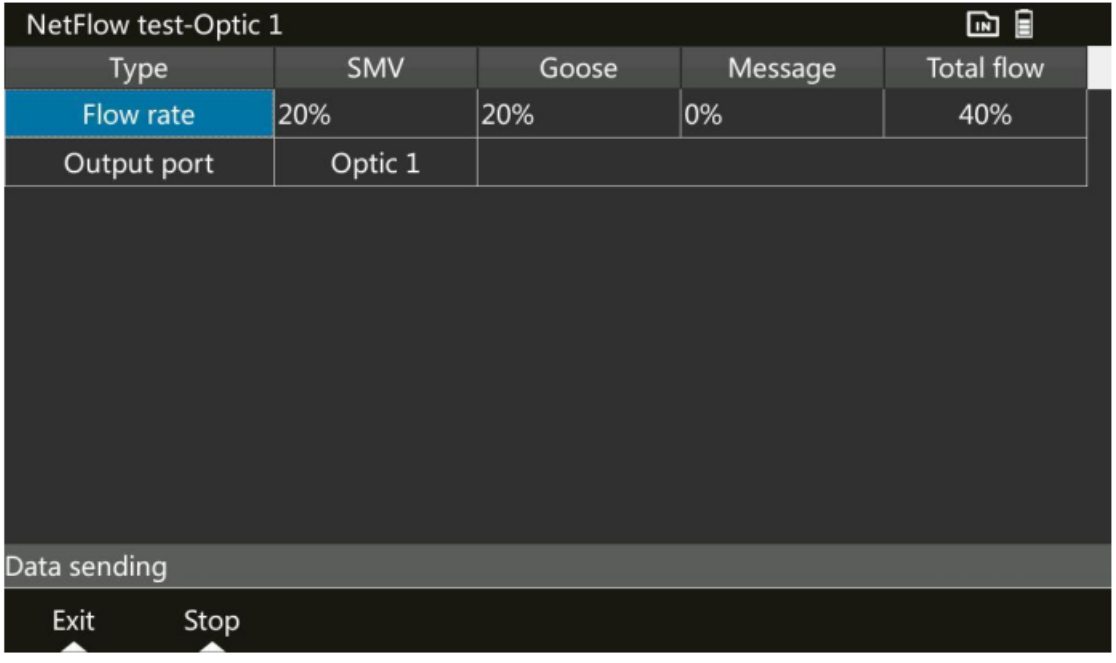
Network Traffic Simulation



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