

NFC & PAYMENT TEST SOLUTION

NFC & Payment Device Test & Verification Solution

KEOLABS ProxiSPY Quest × NomadLAB

A feature comparison of the two units, with guidance on the best fit for your needs.

Positive One Corporation | nfc.positive-one.com

ProxiSPY Quest = lab-based precision analyzer / NomadLAB = portable, field-ready analyzer & emulator



Challenges in NFC & Payment Device Verification

NFC and payment devices use both contactless and contact communication. Given the breadth of standards and interoperability demands, consistent testing from development to shipment is essential.



Interoperability

Cards, smartphones, POS terminals and more from different vendors must be verified to communicate correctly.



Multi-layered Protocols

Broad standards from the physical to the application layer: ISO14443, FeliCa, NFC Forum, ISO7816, SWP and more.



Testing at Every Stage

Needs differ across development debugging, shipment inspection, and field troubleshooting.



Field Reproducibility

Mobility is needed to capture and analyze on the spot faults that behave differently in lab and field.

The two KEOLABS units cover these challenges with complementary strengths: benchtop precision analysis and portable field response.

Two NFC Testers to Suit Your Purpose



ProxiSPY Quest

Lab precision monitoring unit

- Monitoring-dedicated unit for contactless analysis
- Precise data capture from analog down to bit level
- “Quest” app strong in waveform & noise analysis
- Ideal for interoperability & shipment QC

Power: AC 100-240V / Analysis unit: Bit



NomadLAB

Portable field analyzer & emulator

- Portable unit for end-to-end contact/contactless analysis
- Standalone operation via on-board touch screen
- Supports ISO14443 / ISO7816 card emulation
- Ideal for development & on-site troubleshooting

Power: USB (built-in battery, up to 4h) / Analysis unit: Byte

A Benchtop Monitor for Lab-grade Precision



ProxiSPY Quest unit — captures card-to-reader communication via an RF probe and card reader

Captures 13.56 MHz contactless communication (ISO14443 (A/B) / FeliCa / ISO18092 / ISO15693 / NFC Forum) in monitoring-only mode, visualizing interoperability issues with precision from analog to bit level.



Analog Viewer

Oscilloscope-style display of signals. RF / IQ modulation reveals noise and read-failure causes.



Trace (Digital)

Auto-decomposes communication into protocol/response units. List / sequence / timing views.

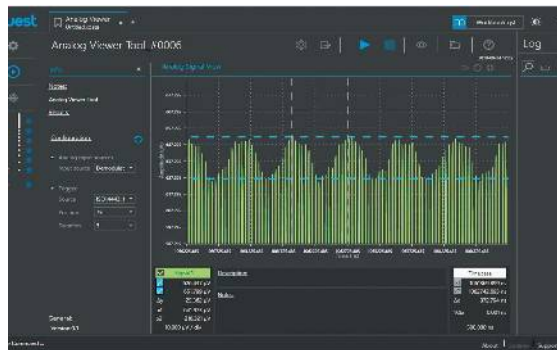


Scenario (Automation)

Program in any COM-compatible language to automate card/reader testing.

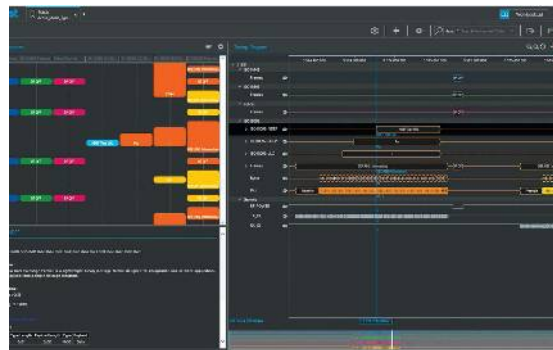
Three Analysis Functions in the “Quest” App

Captured communication is analyzed in the Windows application “Quest” — from waveforms to protocols to test automation.



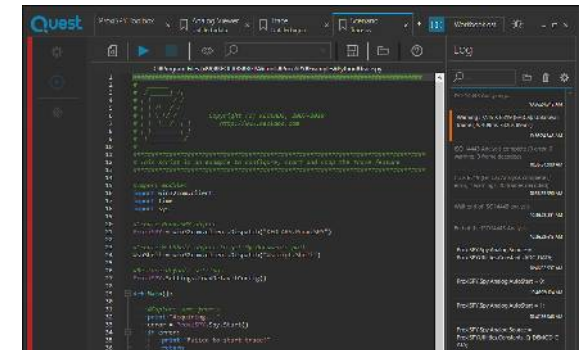
01 Analog Viewer

Oscilloscope-style display of captured signals. RF / IQ modulation for noise and read-failure analysis.



02 Trace

Auto-decomposes communication into protocol/response units. List / sequence / timing views.



03 Scenario

Program in COM-compatible languages to automate card/reader testing.

A Field-portable, All-in-One Analyzer & Emulator



A large color touch screen and various probes enable standalone operation without a PC

A single handheld unit monitors 13.56 MHz contactless plus ISO7816 / SWP(HCI) contact communication end-to-end. It also supports ISO14443 / ISO7816 card emulation.



Standalone Operation

Displays RF level and protocols on-board. Capture and save to SD without a PC.



Card Emulation

Emulates ISO14443(A/B) & ISO7816 cards at digital level. No physical card required.

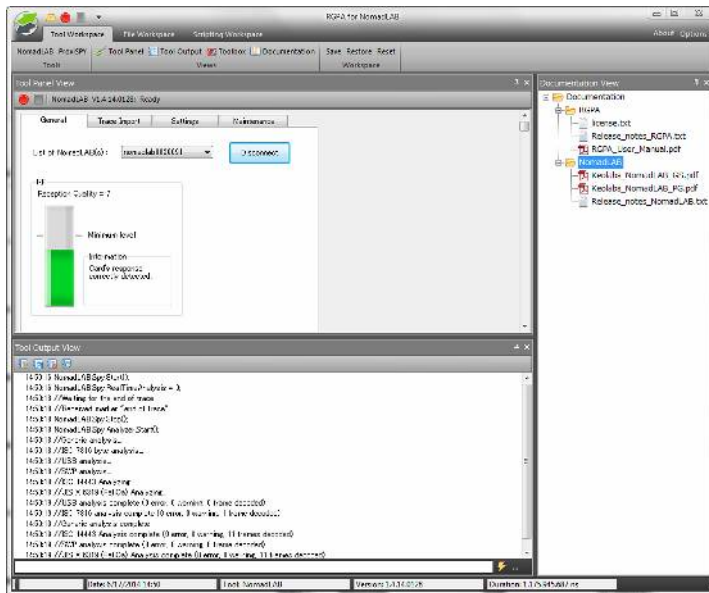


End-to-End Analysis

Analyzes terminal-USIM-CLF contact communication and NFC together. Traces the full mobile-NFC path.

In-depth Analysis with the Free “RGPA” Software

NomadLAB analyzes down to byte level in the free Windows software “RGPA”. It controls the unit via USB, and being free, capture data can be shared with other departments and customers.



RGPA for NomadLAB — Tool Workspace (RF level check & analysis log)

Key Analysis Views

Timing Diagram

Detailed graph display via cursor operations

Sequences View

Simple command & response verification

Description View

Dictionary based on each specification

Annotations View

Add comments anywhere on the waveform

List View

Time-series view by protocol; .htm/.txt export

Search View

Search protocols from Hex & command list

Statistics View

Timing statistics between command/response

Warnings View

Displays detected errors (BCC / parity)

NomadLAB: Supported Protocols & Functions

Function \ Protocol	ISO14443 (A/B)	FeliCa	ISO18092	ISO15693	NFC Forum (*1)	ISO7816	SWP/HCI
Monitoring (*2)	○	○	○	×	○	○	○
Analog Output	×	×	×	×	×	×	×
Card Emulation (*2)	○	×	×	×	×	○	×
Reader Emulation	×	×	×	×	×	×	×

*1 : NDEF, SNEP, LLCP, DEP, etc.

*2 : Digital / application level only



Broad monitoring of contactless (ISO14443/FeliCa/NFC Forum) and contact (ISO7816/SWP), plus ISO14443 & ISO7816 card emulation. Note: ISO15693, analog output and reader emulation are not supported.

Contactless Feature Comparison

Item	ProxiSPY Quest	NomadLAB
ISO14443 Monitoring	○	○
FeliCa Monitoring	○	○
ISO18092 Monitoring	○	○
ISO15693 Monitoring	○	×
NFC Forum Monitoring	○	○
Monitoring Level	Analog / Digital / App	Digital / App
Card Emulation	×	○ (ISO14443 A/B)
Analysis Unit	Bit	Byte
Analog Output	○	×
Power Supply	AC 100-240V	USB
On-board Display	×	○

Precision analog / bit analysis → **ProxiSPY Quest** Contact support, emulation & portability → **NomadLAB**

Recommended Use by Purpose



ProxiSPY Quest is ideal

- Precise analysis down to analog waveforms & noise
- Shipment inspection & interoperability QA
- Settled, in-depth analysis at the bench
- Broad contactless analysis incl. FeliCa & ISO15693



NomadLAB is ideal

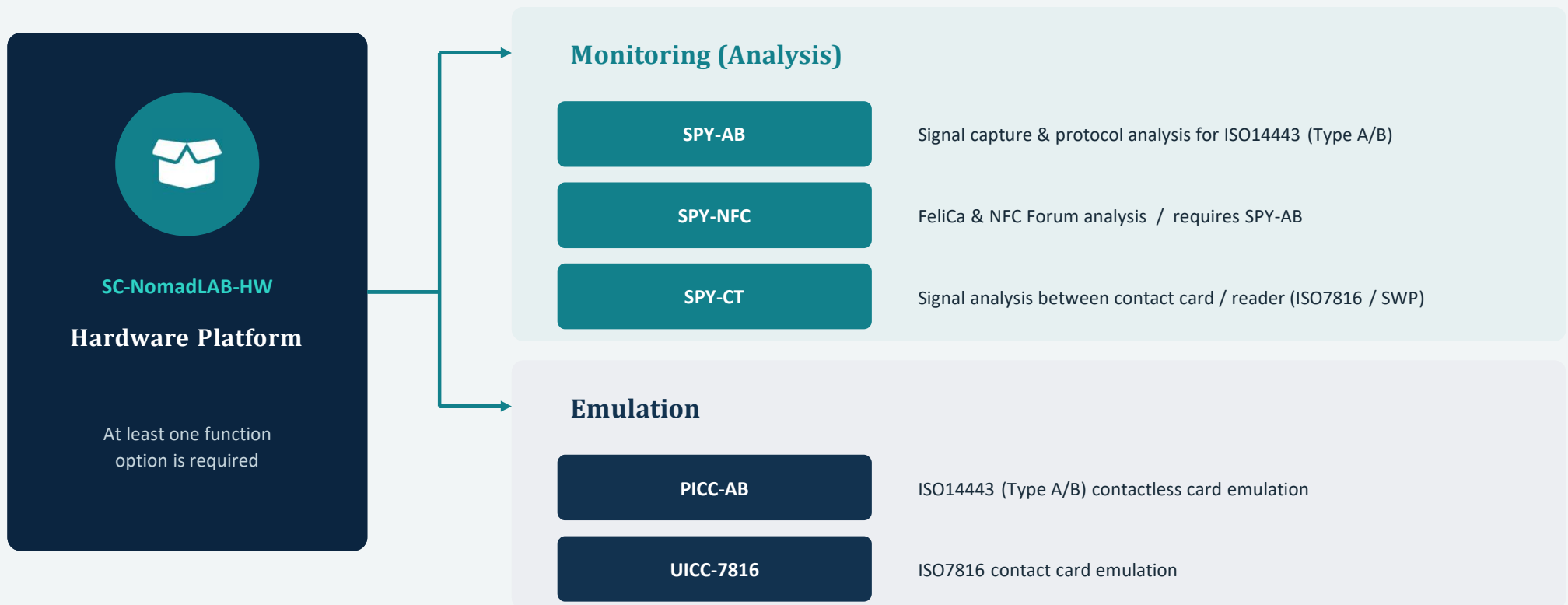
- Verification at the development site or in the field
- End-to-end analysis of contact + contactless
- Develop readers by emulating without physical cards
- Standalone operation using only the on-board screen



Use both together to link lab precision analysis with field response — RGPA is free, so capture data can be shared with other departments and customers.

NomadLAB: Choose Only the Options You Need

Add analysis and emulation functions to the hardware platform. Phased expansion after purchase is easy.



All part numbers are provided with the "SC-NomadLAB-" prefix.

SUMMARY Proposal Summary

The right test environment, two units in concert.



ProxiSPY Quest

For lab precision analysis & shipment QC. Analog-to-bit level, rich contactless protocols and noise analysis.



NomadLAB

For field response & development debugging. End-to-end contact/contactless analysis, card emulation, standalone use.



Using Both

Share data via the free RGPA to link lab and field. Introduce options in phases as your needs grow.

For demos, quotes and option configuration, please contact us.

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