Tools for Managing & Troubleshooting OSDP Deployments

John Nemerofsky, Sage Integration

Jon Uren, Cypress Integration Solutions

Jacob LeRoy, Cypress Integration Solutions

SIA EDUCATION at iSC

In partnership with
SIA EDUCATION at iSC

Built by
RX
In the business of building businesses

Panel Members

John Nemerofsky, Chief Operating Officer, Sage Integration

Jon Uren, President & CEO, Cypress Integration Solutions

Jacob LeRoy, Sr. Sales & Development Manager, Cypress Integration Solutions

Why OSDP?

Why OSDP?

Because the current situation is like Vegas baby!

- Non-deterministic "protocols"

- High risk (known vulnerabilities)

- Time to say goodbye to legacy protocols

Why OSDP?

Secure communication

- Secure Channel: Encryption & authentication

- Supervision

- Meets Infosec requirements

In partnership with
SIA
EDUCATION at iSC

Built by
RX
In the business of
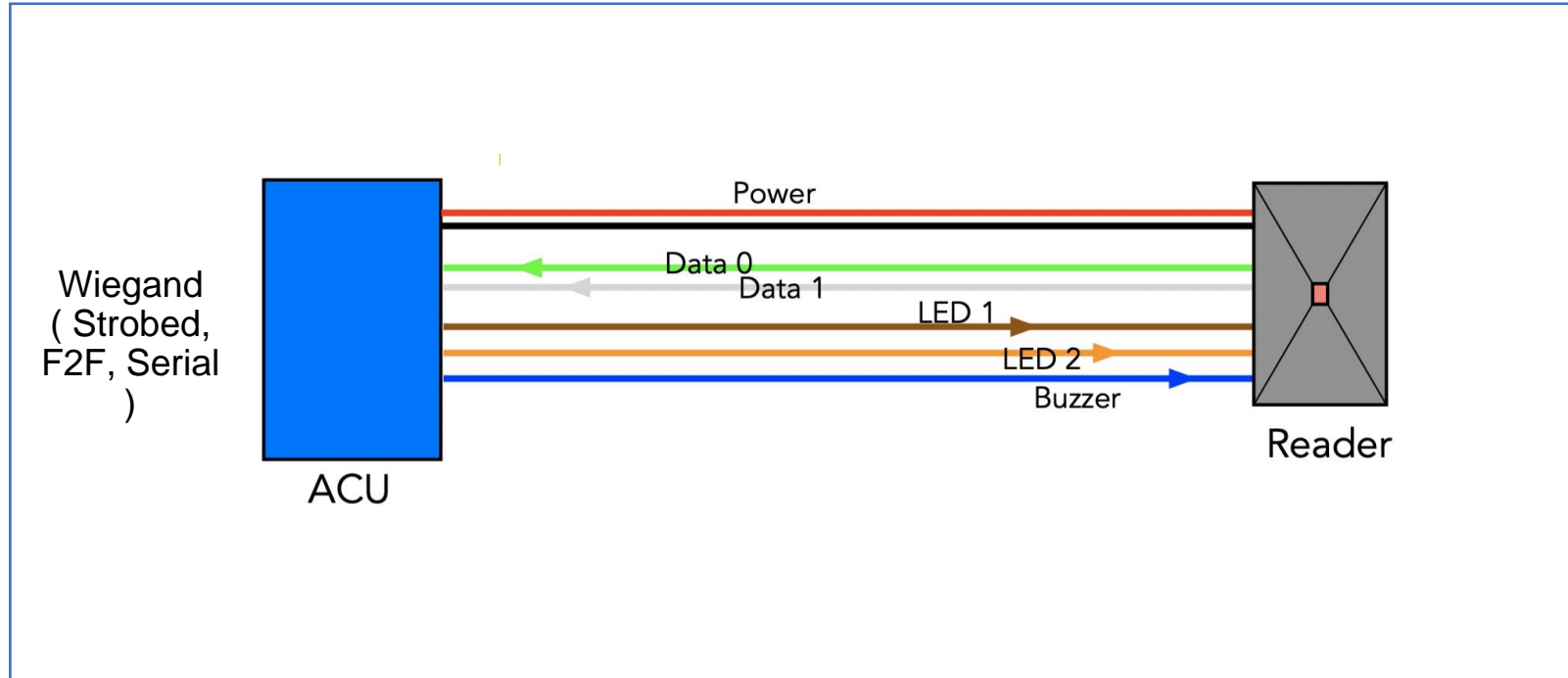building businesses

Why OSDP?

Enhanced functionality

- Longer distances & multi-drop installations

- Larger data formats & higher baud rates

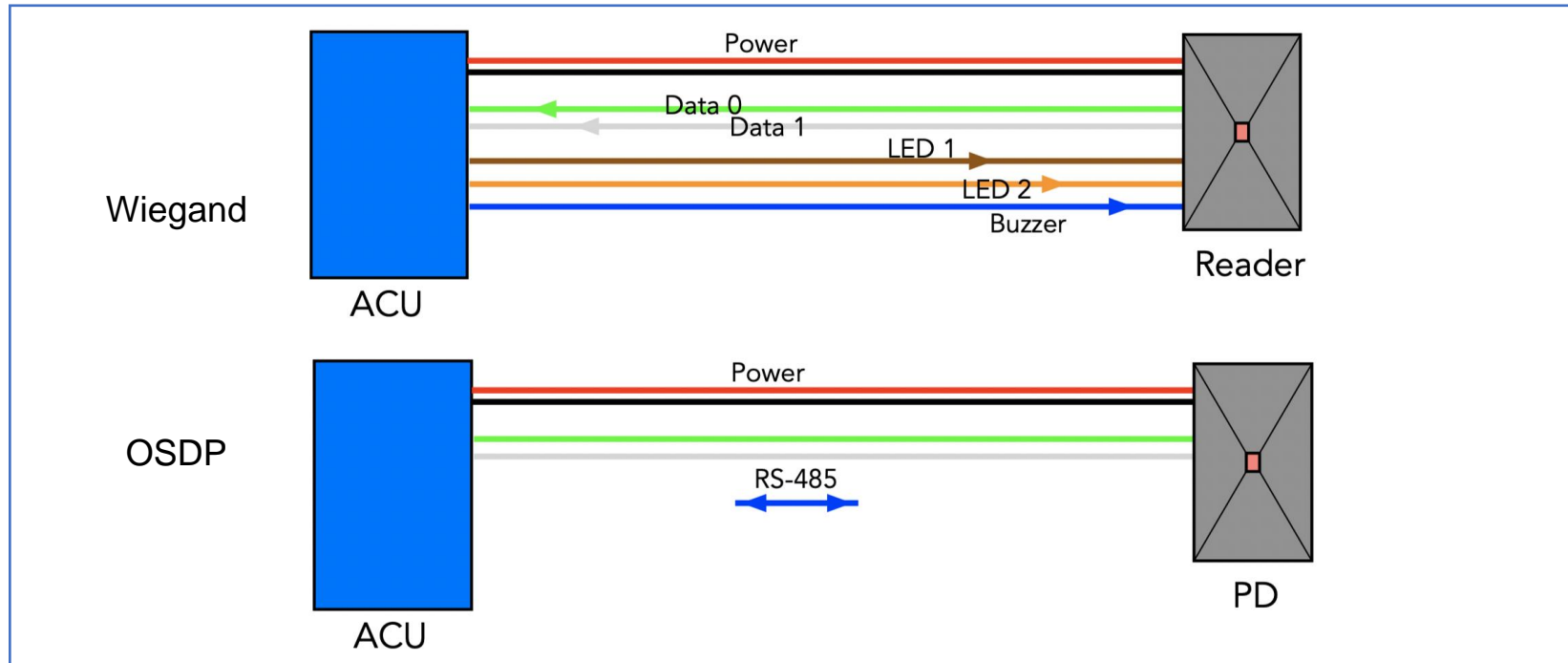- Remote updates from panel

Why OSDP?

Improved interoperability

- Certified IEC industry standard since 2020 (IEC EC 60839-11-5)

- OSDP Verified program helps ensure interoperability

- SIA training courses

- PSIA's Public Key Open Credential specification now supports OSDP

In partnership with
SIA EDUCATION at iSC

Built by
RX In the business of building businesses

Comparison of OSDP and Wiegand wiring

Comparison of OSDP and Wiegand wiring

Major differences

Simplex vs. Half Duplex

- Wiegand is one way unsupervised

- Wiegand functionality is done via discrete signaling wires

- Wiegand Vulnerability - no ability to secure the transmission

- OSDP is bidirectional, fully supervised

- OSDP functionality is done via commands / replies

- OSDP can be encrypted and authenticated

- Multi-Drop Topologies
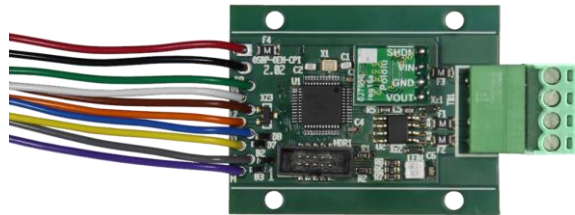
Major differences

Industry impact

- Hot Dog Stand

- Fortune 500

In partnership with
SIA
EDUCATION at iSC

Built by
RX
In the business of
building businesses

OSDP systems

Full systems vs. retrofits

Wiegand

OSDP

OSDP systems

Retrofitting Wiegand system

- Install new OSDP devices in existing Wiegand systems

- Upgrade highest security areas with OSDP readers & converters

- Cost & time savings but restricted to 1-to-1 expansion

In partnership with
SIA EDUCATION at iSC

Built by
RX
In the business of building businesses

OSDP systems

Full OSDP systems

- Takes full advantage of OSDP
- Main system components all support OSDP
- For new construction or when budget / timeframe support replacement

In partnership with
SIA EDUCATION at iSC

Built by
RX   In the business of building businesses

OSDP components

OSDP panel (ACU) sourcing considerations

- Maximum number of OSDP devices on single port (generally 1, 2, 4, 8)

- How it supports I/O

- Range of baud rates supported

- Pairing mode for Secure Channel encryption

- Configuring controller to poll each reader (multi-drop)

OSDP components

OSDP reader (PD) sourcing consideration

- Default configuration

- Configuring address/baud rate for each reader

- Secure Channel key management

- Factory default process

OSDP components

Home-run installation

Multi-drop installation
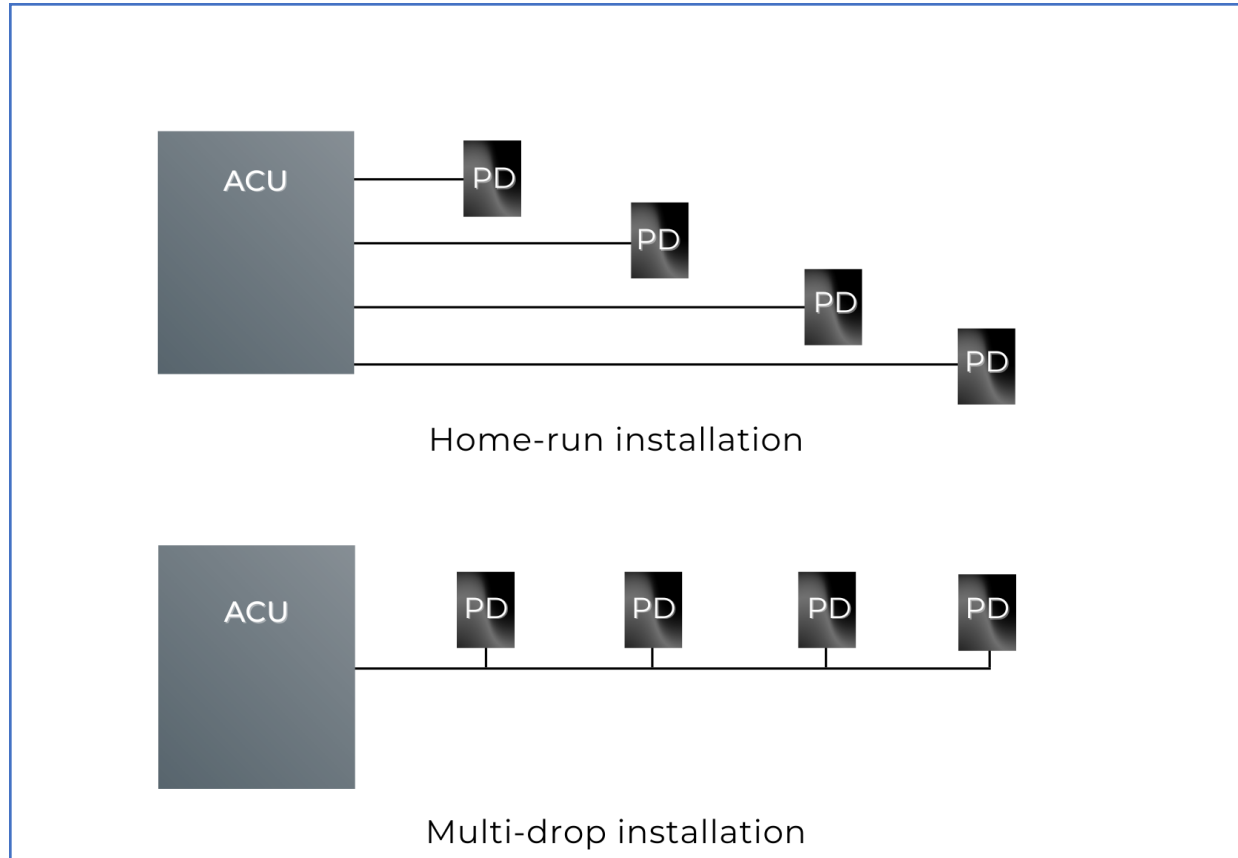
OSDP best practices

Order of installation

OSDP best practices

"Dead or Alive" demo

OSDP best practices

Configuration

- Know your tool options: Built-in, controller, or third-party
- Preconfigure / test Secure Channel encryption key, device address, baud rate

OSDP best practices

Device address: Required step in OSDP (different from Wiegand!)

- Find default addresses of both reader & controller

- Plan device addresses

- Preconfigure and bench-test before installing

OSDP best practices

Baud rate (reader-panel communication speed)

- OSDP specification defines 6 rates; what does your device support?

- Lower rates better to start (example: 9600)

- Higher baud rate better for higher bandwidth needs (example: biometric)

OSDP best practices

Secure Channel encryption: CRITICAL to enable on every OSDP reader

- Review manufacturer's and 3rd party options

- Always set up 'out of band'

- Key management

In partnership with
SIA
EDUCATION at **iSC**

Built by
RX   In the business of
building businesses
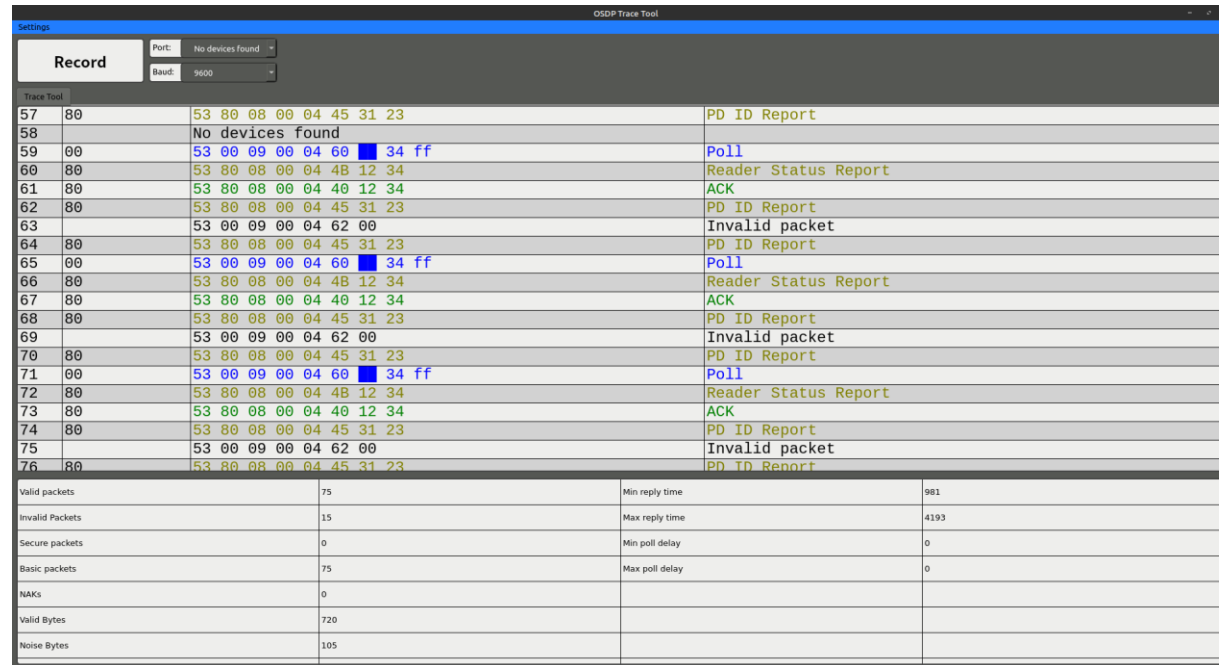
You can't fix what you can't see

- No instructions
- No measurements
- Lack of experience
- No built-in indicators
- Misinterpretation
- Incompatibility
- Improper configuration
- Improper Installation
- Edge case

Problem

In partnership with
SIA
EDUCATION at ISC

Built by
RX
In the business of building businesses
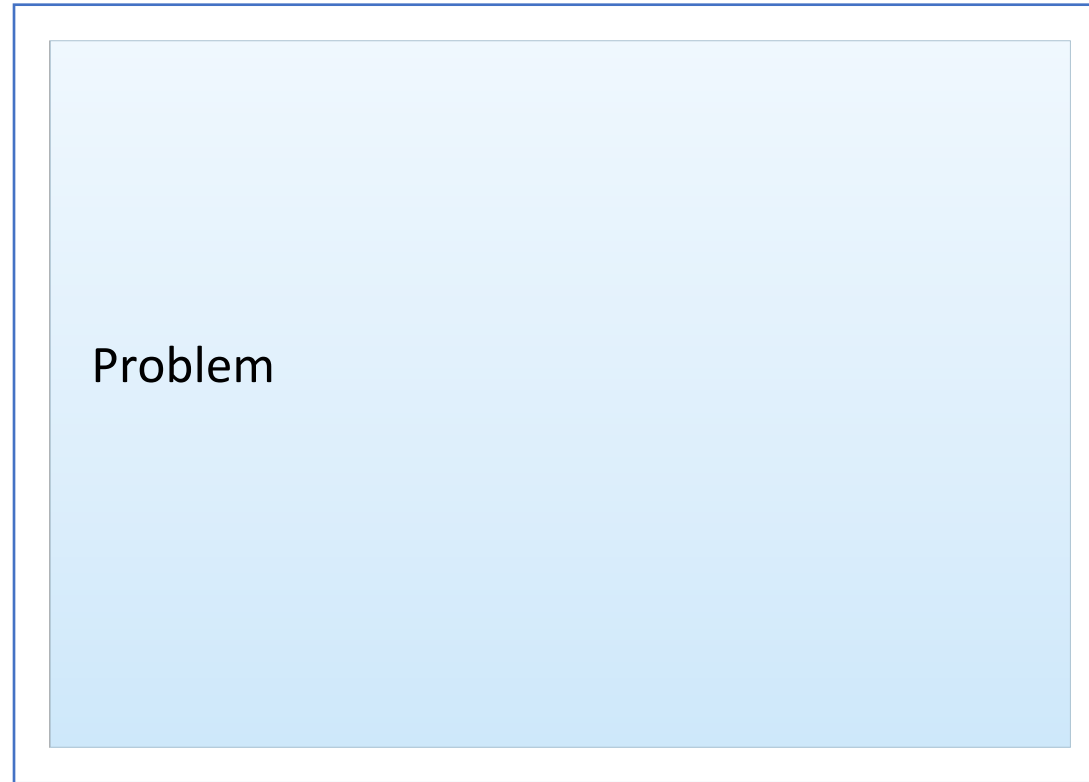
Trace tools

- You have to see what the electrons are up to (is the reader communicating?)

- Built-In Tracing (PACS, ACU)

- OSDP Trace Tool
  - ‣ Export to common file
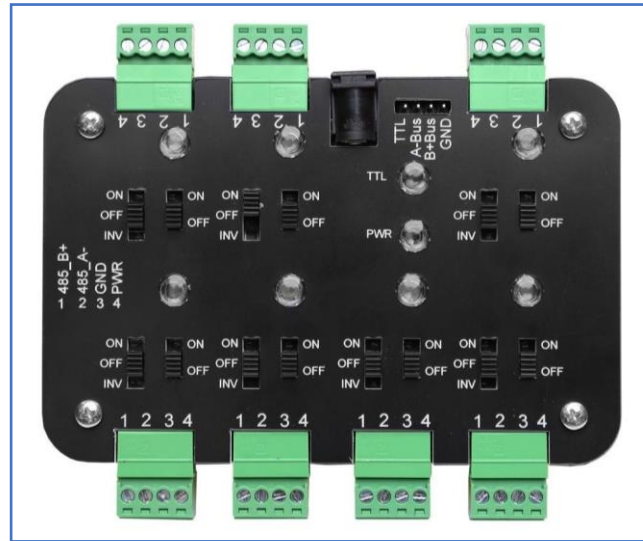 - ‣ Send to the "experts"

Communication parameter settings

- Built-In (PACS, ACU, PD)
- 3rd Part Tools
- Laptop and RS-485 Adaptor
- Smart phone with USB-C to RS-485
- Dedicated Configuration Tools
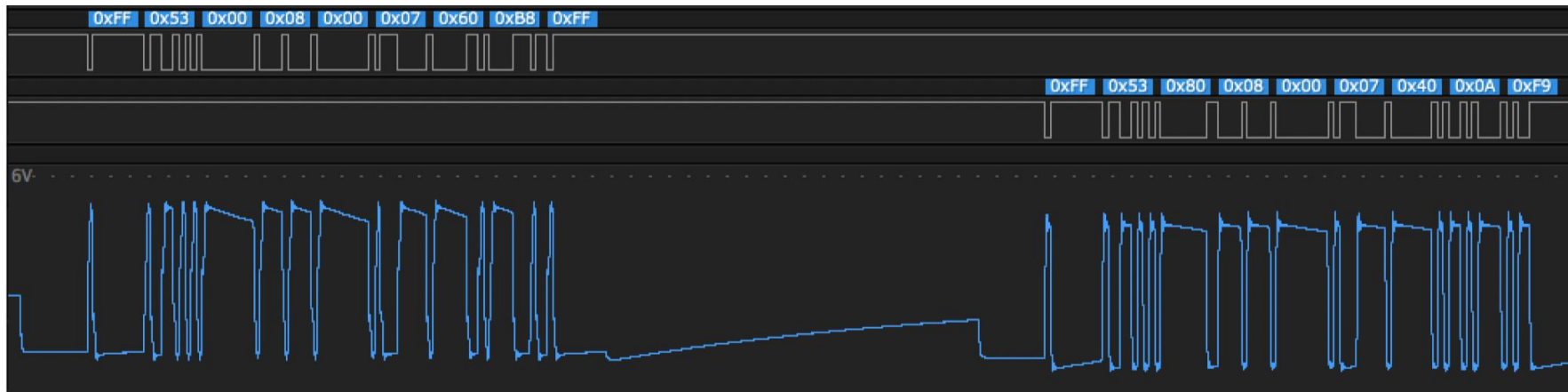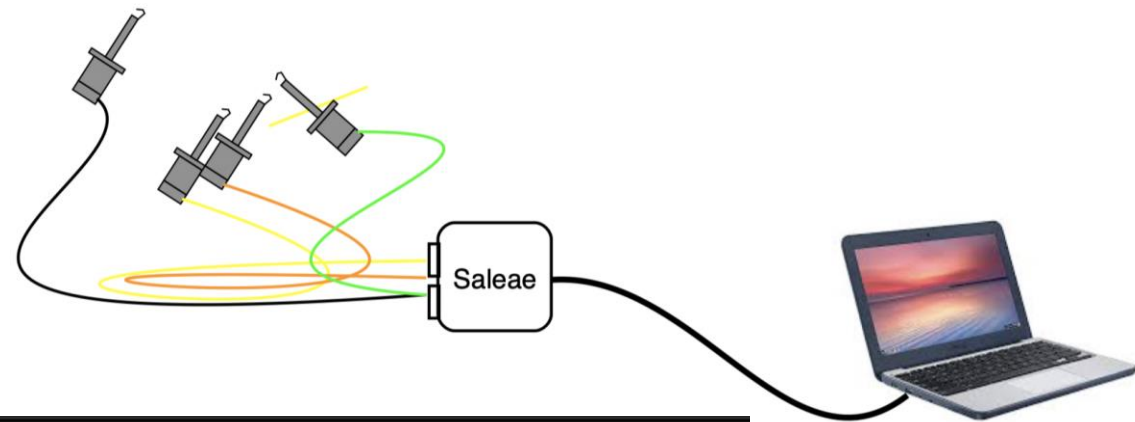- Open source tools using Linux
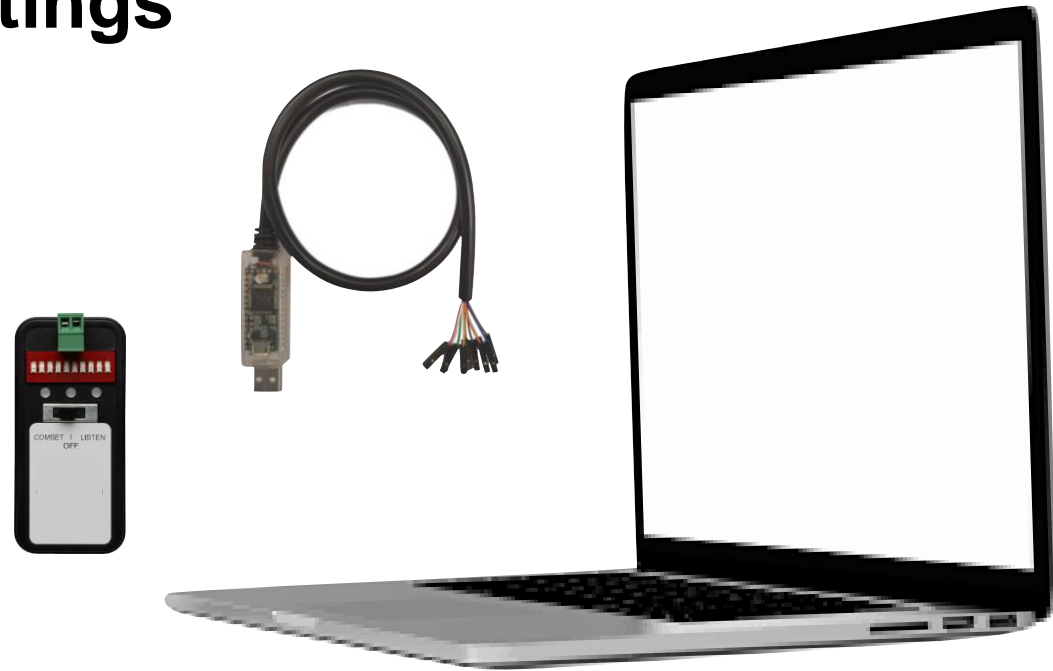
OSDP bench-testing tools

- Bench Testing
- Field Testing
- Development

In partnership with
SIA EDUCATION at **iSC**

Built by
RX In the business of building businesses

Logic analyzer / Oscilloscope

Demonstration

- View OSDP communication using logic analyzer

- View OSDP communication using Trace Tool

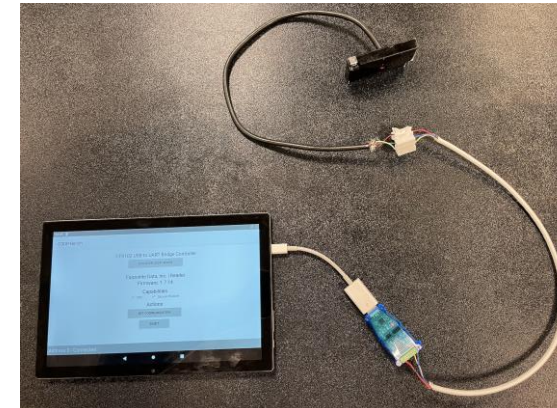- Set OSDP Communication Parameters using dedicated tool

Vendors

- Access Control System suppliers

- Card Reader and Peripheral manufacturers

- Cypress Integration Solutions

- ID Machines

- Z-Bit (osdpworld.com)

- Open Source - git hub, libosdp-conformance, osdpcap format

RasPi Platform

OSDP Bench - Android

Last, but not least

Future developments

  - Current Specification is v2.2.1

  - Roadmap for Version 2.3 is in process

Enhancements for faster PIV

Behavior Profiles

Best Practices Guidelines

OSDP Verified Program

OSDP Boot Camp

Q & A

Thank You

Have thoughts about SIA Education@ISC?

Scan the QR Code on the left to provide your feedback

In partnership with
SIA EDUCATION at iSC

Built by
RX In the business of building businesses