Tools for Managing & Troubleshooting OSDP Deployments

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In partnership with SIA EDUCATION at ISC
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Panel Members

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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

Why OSDP?

Enhanced functionality

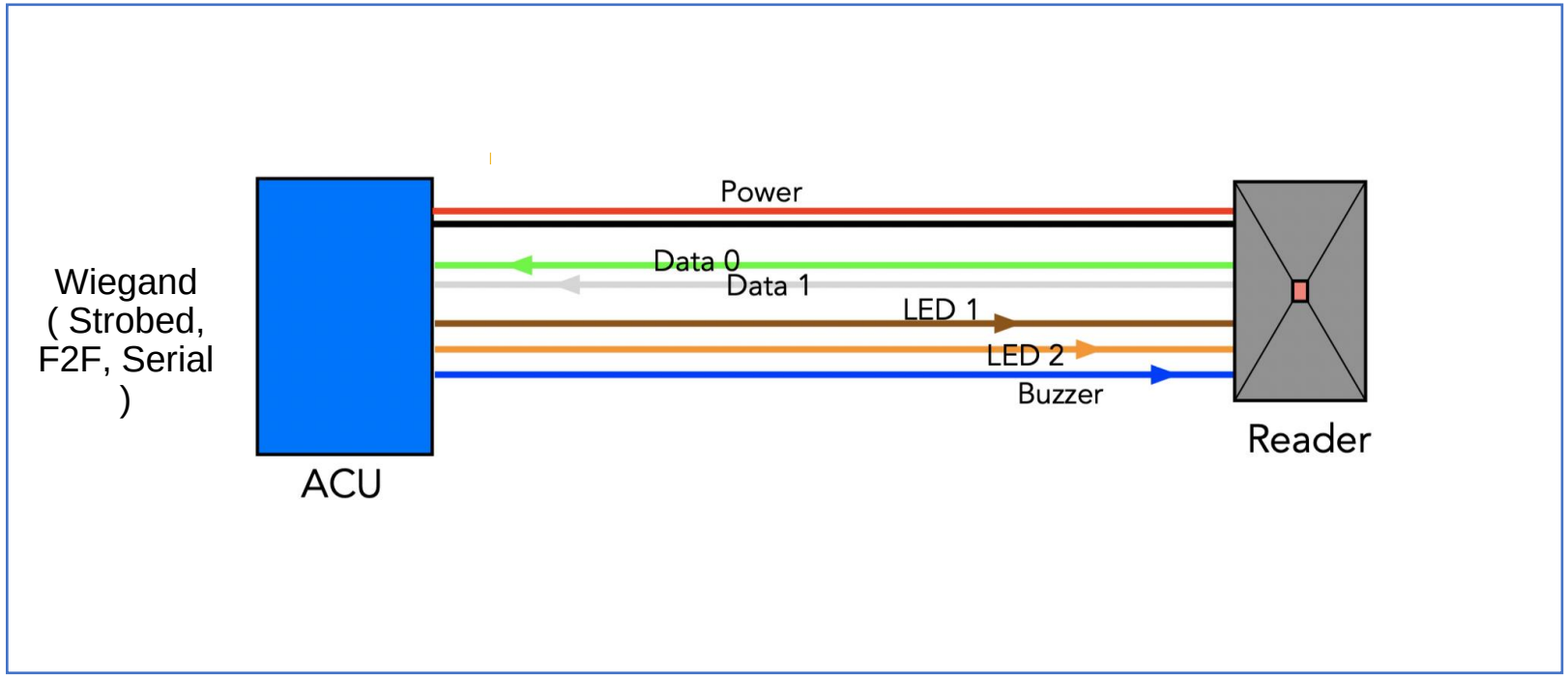
- Longer distances & multi-drop installations
- Larger data formats & higher baud rates
- Remote updates from panel

Why OSDP?

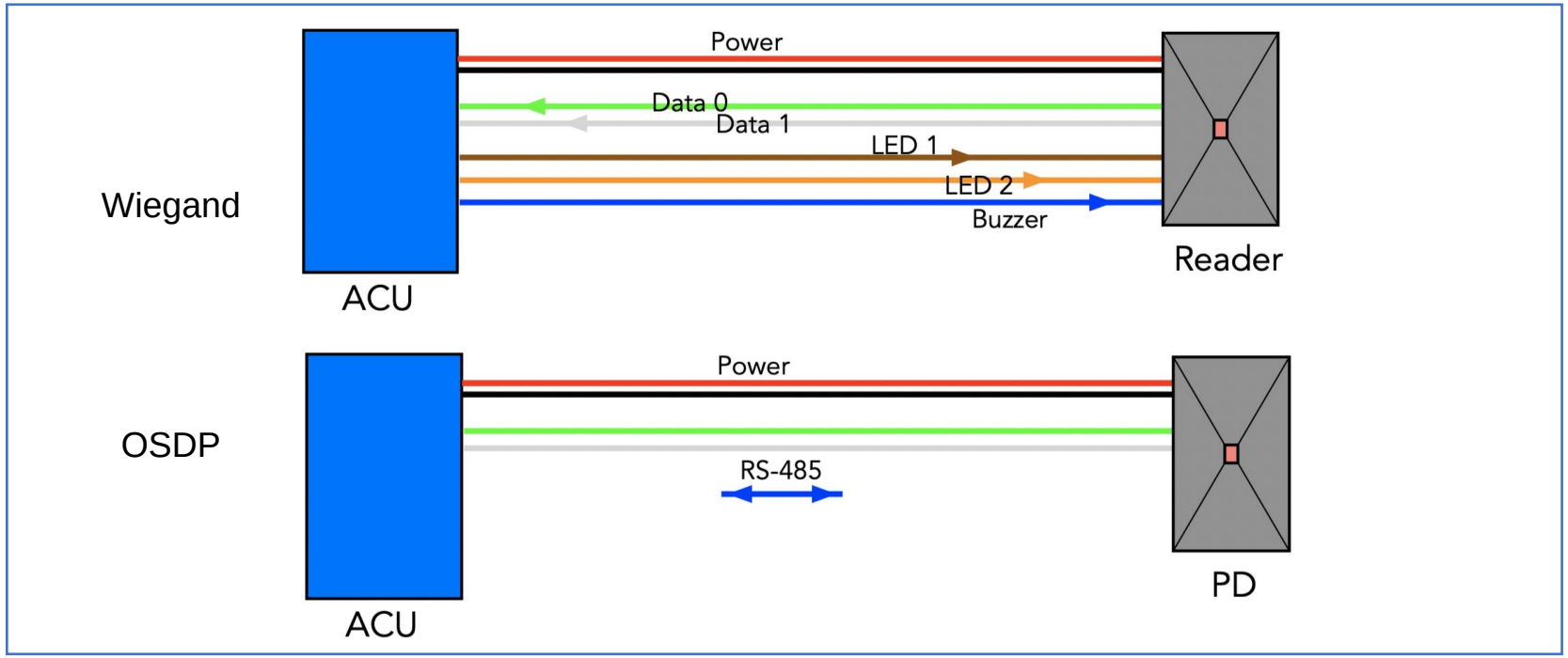
Improved interoperability

- 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

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

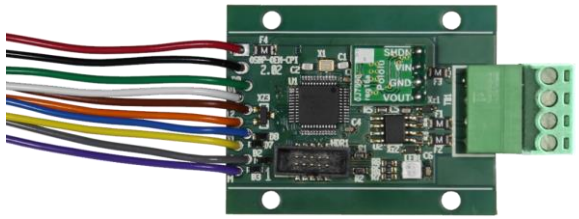
Industry impact

- Hot Dog Stand
- Fortune 500

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

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

OSDP components

OSDP panel (ACU) sourcing considerations

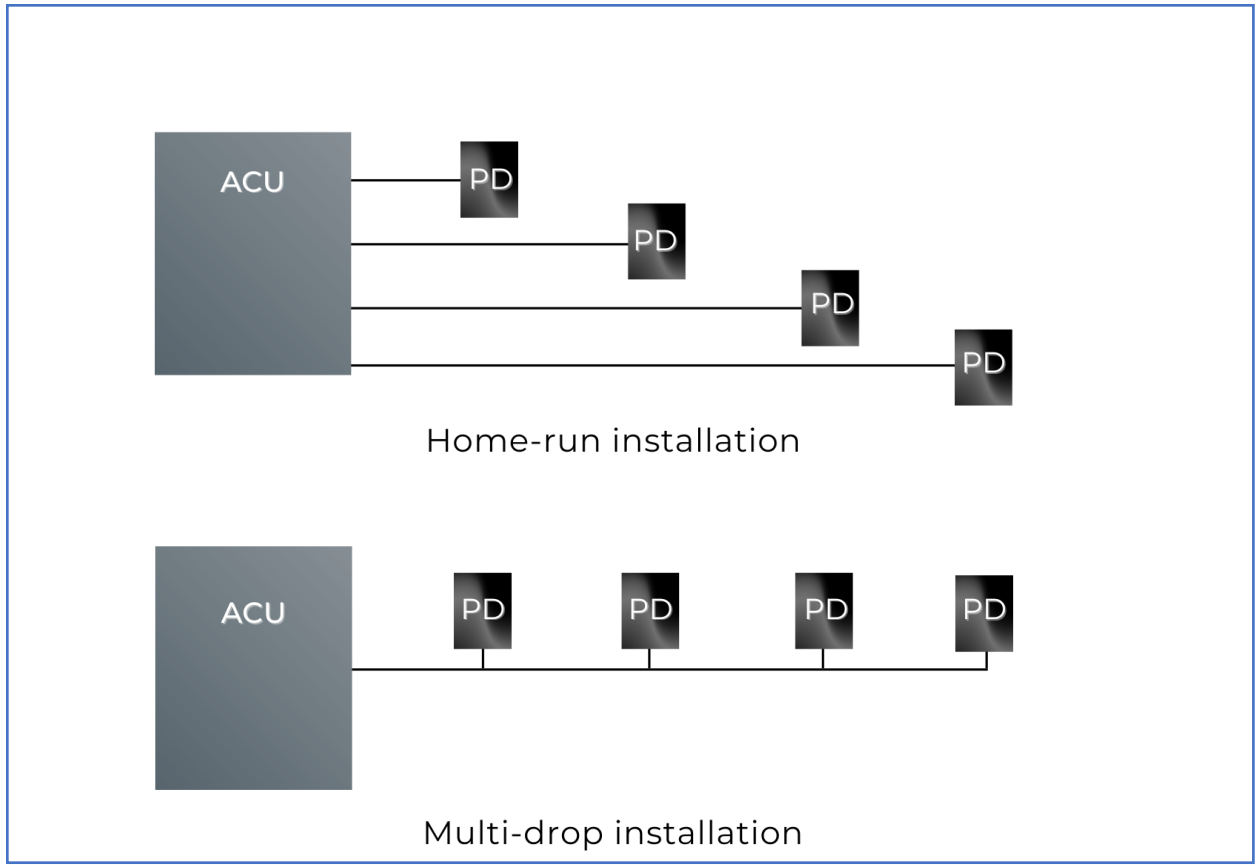
- Maximum number of OSDP devices on single port (generally 1, 2, 4, 8)
- How it supports I/O
- Range of baud rates supported
- Pairing mode for Secure Channel encryption
- Configuring controller to poll each reader (multi-drop)

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



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)

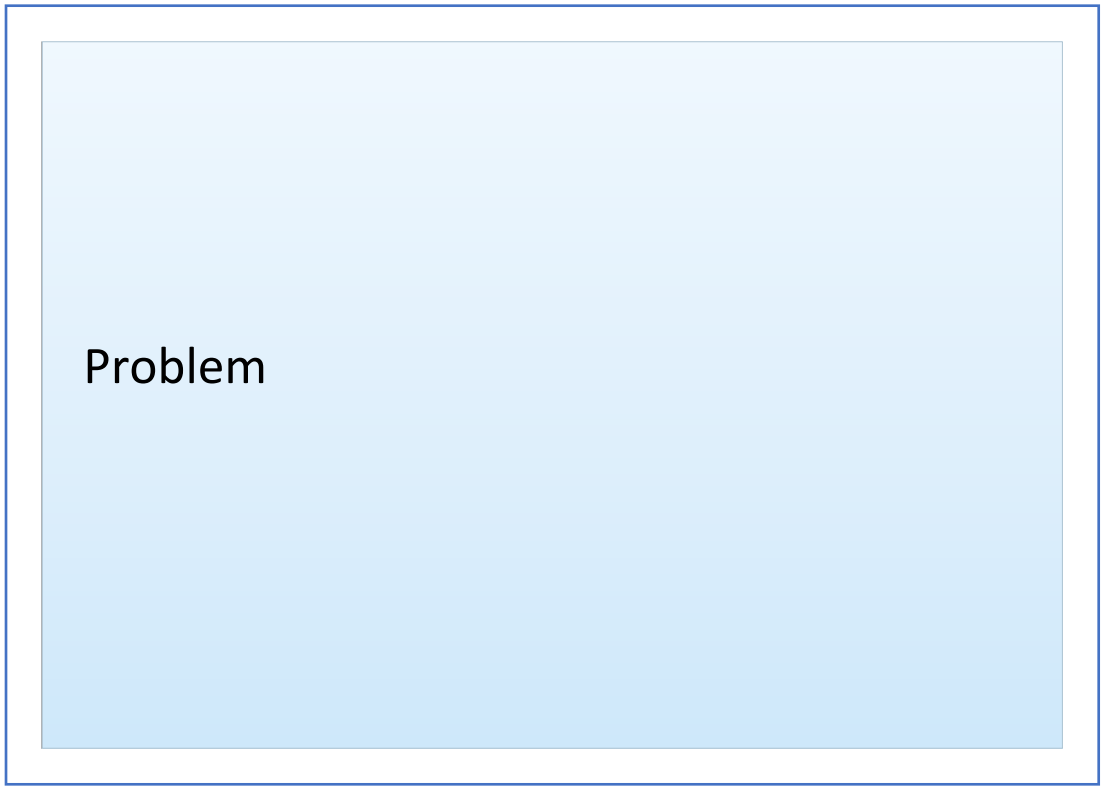
OSDP best practices

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

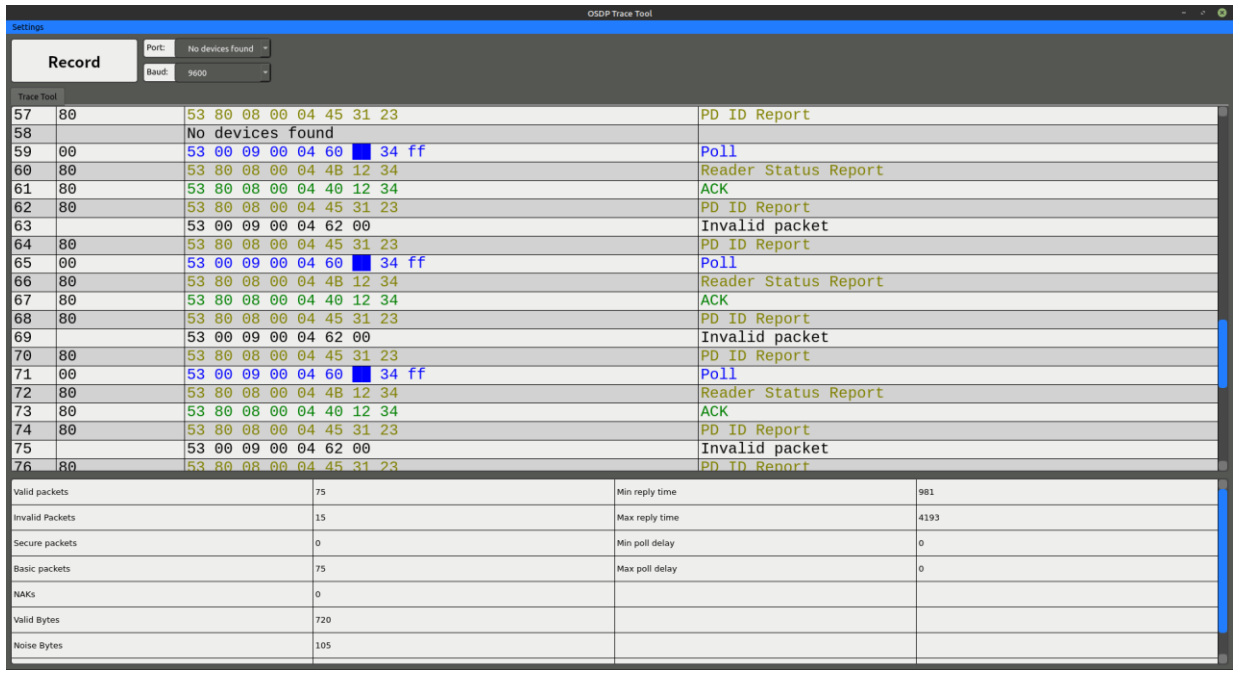
You can’t fix what you can’t see

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



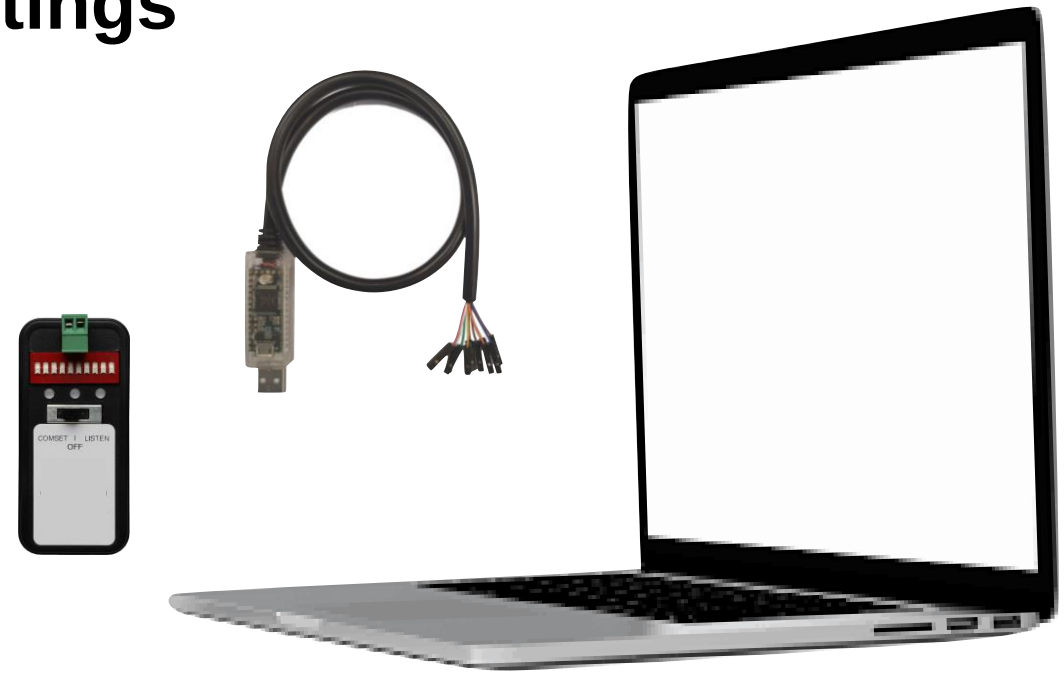
Trace tools

- 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”



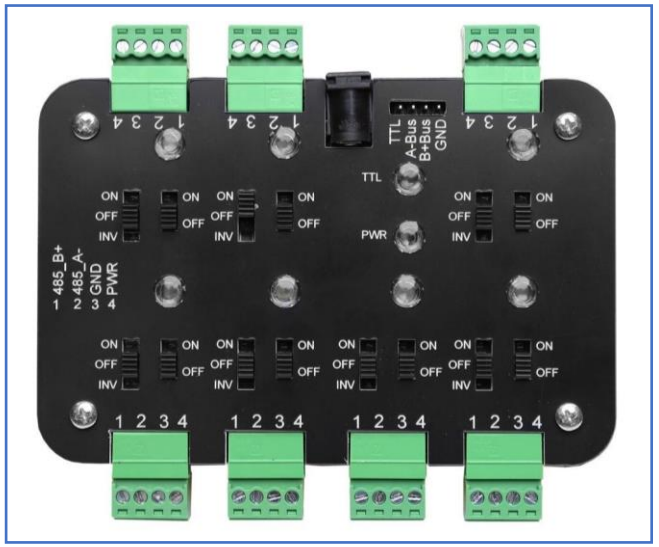
Communication parameter settings

- 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

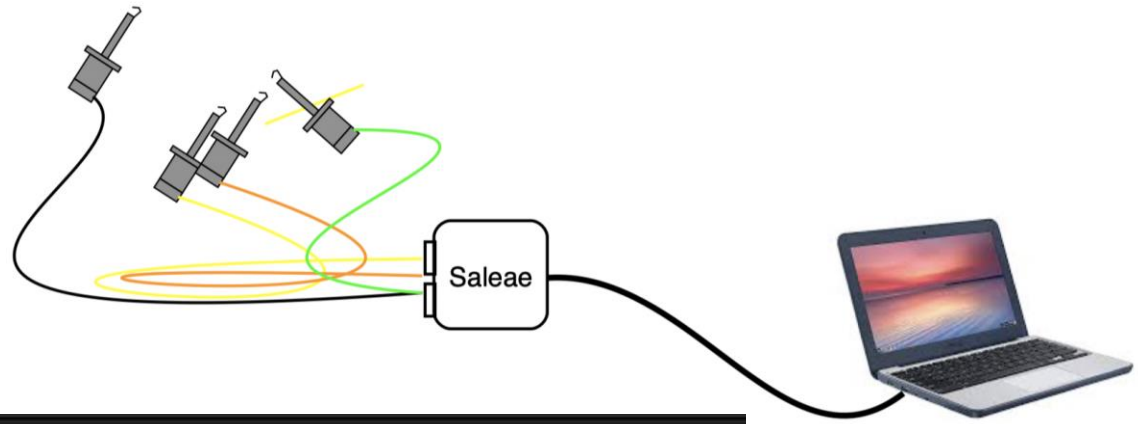


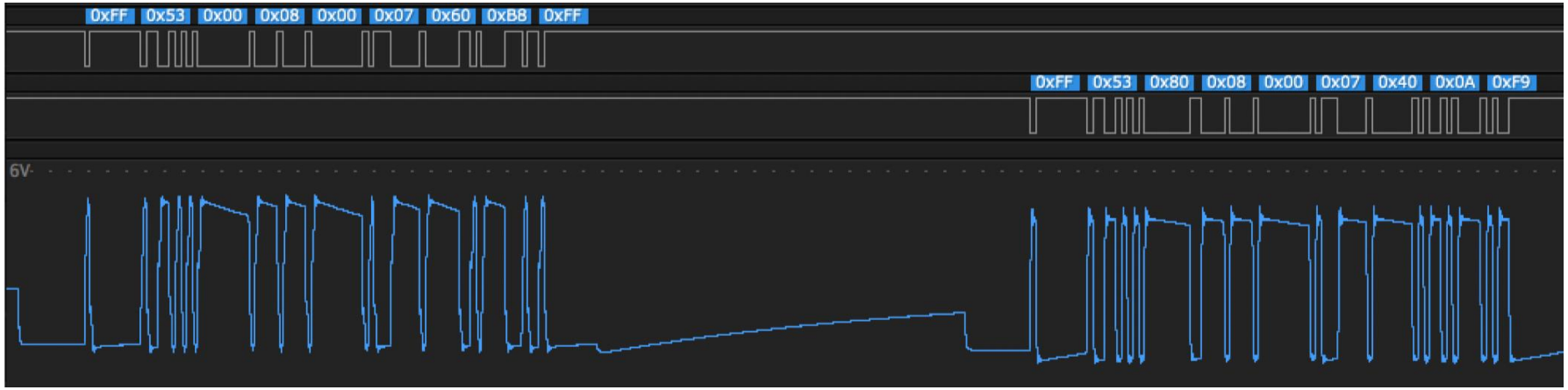
OSDP bench-testing tools

- Bench Testing
- Field Testing
- Development



Logic analyzer / Oscilloscope





Demonstration

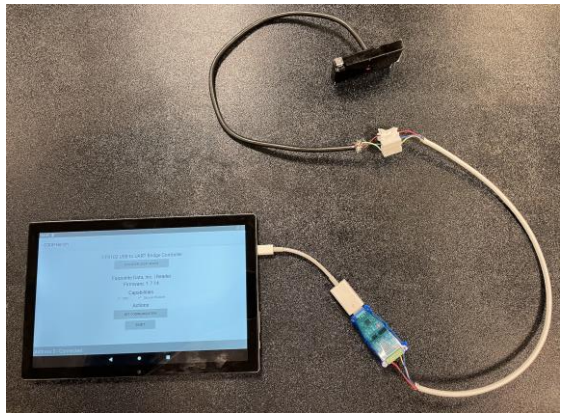
- View OSDP communication using logic analyzer
- View OSDP communication using Trace Tool
- Set OSDP Communication Parameters using dedicated tool

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

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