springcard PFL20227-AA Puck Base USB HF NFC / RFID Reader User Manual

Contents

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WHAT IS THE PUCK

The PUCK Base is an efficient and versatile desktop contactless coupler. Thanks to its compatibility with PC / SC standards, the PUCK Base allows the use of a contactless card and NFC tags as easily as a conventional smart card with a simple and straightforward implementation.

- The PUCK is delivered with its USB-C cable.
- A simple design, with its crown of light and its logo customizable, suitable for all environments.
- Its latest generation electronic components and its NFC PN5180 modulation from NXP allow excellent radio performance to be achieved.
- Its architecture is optimized to meet new security needs with the integration of Secure Elements directly into the product.

TYPICAL PUCK USE CASES

- LOYALTY PROGRAMS
- LOGISTICS
- LIBRARY
- STORAGE & INVENTORY
- ORDER PREPARATIONS
- PRODUCT TRACEABILITY
- E-PASSPORT & OTHER E-DOCUMENTS
- MICRO-PAYMENT, ELECTRONIC WALLET # AUTHENTICATION
- BADGE FORMATTING & PERSONALIZATION

ALWAYS MORE EFFICIENT

- Communication with cards at 848 kbit / s and passage extended APDUs (eAPDUs) up to 64 kB which decreases transaction time with cards supporting this mode of communication.
- Support for the latest versions of standards: EMV-ready
  CEN / TS 16794-ready (AFIMB / RCTIF 5) ALWAYS MORE COMPLETE
- Monitoring of NFC Forum specifications.
- Compatibility with Apple VAS (Wallet) and Google Smart Tap (Google Pay)

ALWAYS MORE COMPATIBLE

New features include the ISO / IEC 18000-3M3 RFID protocol, without renouncing the old card protocols (Innovatron, ST SR, ASK, CTS, …).

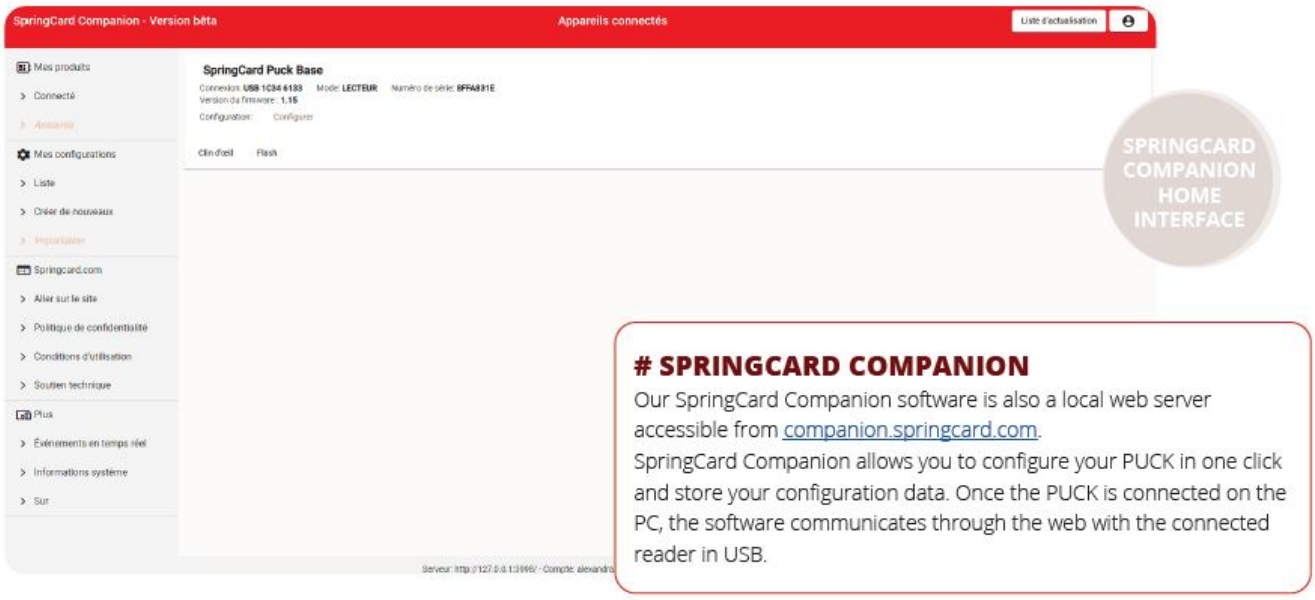
ANALOGUE LEVEL COMPATIBILITY
This point covers the correct transmission of energy and good quality of the radio link.
PROTOCOL COMPATIBILITY
The electronic chip on the card and the reader must speak the same language. PUCK implements the latest versions of the standards and re-spects the EMV and CEN / TS 16794 (AFIMB / RCTIF 5) imple-mentation recommendations for maximum compatibility.

APPLICATION-LEVEL COMPATIBILITY (TRANSACTION)

This point covers the securing (optional) of the link and the ac-cess to the information which the chip contains. In Smart Reader and RFID Scanner mode, the reading tem-plates allow the PUCK “intelligent reader” to access data from most chips on the market. In PC / SC mode, PUCK operates in transparent mode (pass-through) and gives applica-tions running on the host com-puter full access to the functions of the chip.

PC / SC MODE 100% COMPATIBLE
The PUCK Base brings its approach 100% compatible with all desktop operating systems (Windows, Mac OS, Linux). Full interope-rability with their predecessors in the Prox’n’Roll family and with all smart card readers on the market thanks to the PC / SC standard.
SMART READER MODE INTELLIGENT READER
The transaction between the reader and the card is executed di-rectly by the reader without the need for any code that runs on an application. The integrated secure elements ensure the protection of the keys.
RFID SCANNER MODE KEYBOARD EMULATION
This mode is identical to the smart reader in keyboard emulation. This feature allows, once the pass is presented on the reader, to have its data automatically sent to the PC as if they were typed on the keyboard.

SPRING CARD COMPANION



TEMPLATES AVAILABLE

- **SMART MODE READER AND RFID**
  SCANNEThe PUCK independently reads the card, RFID tag or NFC object, before transmitting the desired data obtained to the PC or tablet directly in the format suitable for downstream applications.The PUCK has 4 independent templates which allow optimal use of badges issued by different organizations. When the card implements protection against cloning or offers a secure read transaction, the read keys remain safe in the Secure Integrated element of the PUCK.
- **READING THE PROTOCOL SERIAL NUMBER (ID)Carrier frequency:**
  13.56MHz ISO/IEC 14443 (NFC-A and NFC-B, including the entire NXP range MIFARE), ISO/IEC 15693 and 18000-3M1 (NFC-V), ISO/IEC 18000-3M3 (EPC HF), JIS:X6319-4 (NFC-F). All tags consistent with NFC Forum: Type 1 (Innovision/Broadcom Topaz and compatible), Type 2 (including NXP NTAG, Infineon my-d, …), Type 3 (Sony FeliCa Lite and Lite-S), Type 4 (includingNXPDESFire, STMicroelectronics ST25TA and M24SR, …) and Type 5 (including NXP ICODE, Texas Instrument TagIT, STMicroelectronics ST25TV and M24LR, …).Transportation Cards “ B’ ”(Calypso Innovation historical protocol) and STMicroelectronics transport tickets (SR176, SRI512, …) and ASK/Paragon ID (CTS256 and CTS512).

- **READING DATA STORED**
  IN MEMORY APDUs 7816-4 exchange for querying ISO/IEC 14443-4 cards (T=CL / ISO-DEP) or innovation (SELECT APPLICATION, SELECT FILE, READ BINARY or READ RECORD). NXP DESFire, NXP MIFARE Classic and compatible, NXP MIFARE Plus and compatible.Direct access to memory areas of wired logic chips: all NFC Forum Type 2 compatible chips (including NXP MIFARE UltraLight, NXP NTAG, Infineon my-d, …) and ISO/IEC 15693-3/ NFC Forum Type 5 (including NXP ICODE, Texas Instrument TagIT, STMicroelectronics ST25TV and M24LR)
- **ADDITIONAL FEATURES**
  Formatting the output in decimal with Lühn key (ski passes), and Verification of the authenticity (anti-clone function) of most of the chips in the NXP (NTAG DNA, MIFARE, etc) and ST ranges, DESFire authentication before reading the ID for cards in Ran-dom-ID (random protocol identi-fier).
- **READING NDEF STRUCTURED DATA**
  Reading URLs (SmartPoster) or any specific business data, as long as it is stored in a structure compliant with the NFC Forum RTDs from all compliant tags (Type 1, 2, 3, 4A and 4B, 5).Receiving peer-to-peer push messages (SNEP). # READING OF SMARTPHONES ANDOF NFC OBJECTSSecure reading of Apple VAS (PassKit / Wallet NFC) and Google VAS (Smart Tap / Google Pay) passes with storage of ECC keys in the secure element,

FCC COMPLIANCE STATEMENTS

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this product not authorized by SpringCard could void the electromagnetic compatibility (EMC) and wireless compliance and negate your authority to operate the product. This product has demonstrated EMC compliance under conditions that included the use of compliant peripheral devices and shielded USB cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions, and other electronic devices.

TECHNICAL DATA

ISO / IEC NFC / RFID standards 14443 A6B PCD (NFC-A, NFC-B), 15693 (NFC-V), 18000-3M1 & 3M3, 18092 (NFCIP-1), 14443 A PICC (card emulation)
Carrier frequency 13.56MHz (RFID HF, NFC)

RF field level Typ: 3A / m at 0cm, 1.5A / m at 5cm
Antenna Integrated, balanced, diameter 7cm Typ: 0-5cm, up to 10cm
Baudrate operating distance 26kbps (15693), 106/212/424 / 848kpbs (14443), 106/212 / 424kbps (18092)
Technologies Non-ISO RF NFC Forum Tag, types 1, 2, 3, 4 and 5 (R / W), type 4 (emulation) NXP (Philips) MIFARE, BroadComm (Innovision) Jewel & Topaz, ThinField (Kovio) RF Barcode, ST SR & LR, ASK CTS, Atmel CryptoRF,… Calypso FeliCa Innovation radio protocol (NFC-F): simple mode only HID iClass, Inside PicoTag: serial number only Host Interface USB 2.0 full speed Host Interface, USB CCID (PC / SC) SpringCard Direct HID keyboard Other Features Secure host communication (AES-128)
Light Sound True R, G, B LED with advanced brightness control (Battery status, Bluetooth status, mode) 1 tone buzzer
Size Cable / connector
Diameter 8.1cm / Size: 3cm / Weight: 140g 1.8m cord – USB type C connector
Temperature Humidity Operation -20 / + 70 ° C, storage -40 / + 85 ° C 0-90% non-condensing 0-90%
Approvals Radio: EN 300330, EMC: EN 301489, Safety: EN 60950-1, CE marked FCC class B part 15 (pending) RoHS, WEEE
Size Ø 7.8 cm x 2.7 cm
FCC ID: TYQ-PUCKBASE01 PENDING
Weight 75 g
Warranty 2 years

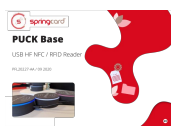
FOR FURTHER

- THE PUCK DOES ALSO EMULATIONS CARDS
- CUSTOMIZATION OF THE LEDS COLORS: 100% CONFIGURABLE WHICH ALLOWS THE PUCK TO BE ADAPTED TO THE COLOR OF YOUR COMPANY.
- QUICK UPDATE AND WITHOUT HANDLING WITH COMPANION: ONCE THE PUCK IS CONNECTED TO THE SOFTWARE, THE UPDATE IS MADE IN A FEW SECONDS
- EXCHANGES NFC IN PEER TO PEER
- HE IS ABLE TO STORE DATA USERS OR LICENSE KEYS
- POSSIBILITY OF PERSONALIZE LOGO ON THE FACE OF THE READER
- TECHNICAL DOCUMENTATIONS DOCS.SPRINGCARD.COM

CONTACTLESS & 13.56MHZ RFID & NFC SOLUTIONS AND READERS

SpringCard is a French company that designs and manufactures contactless readers by combining different technologies. With 20 years of field experience in systems with 13.56 MHz, we offer more than just technical skills.

Documents / Resources

	springcard PFL20227-AA Puck Base USB HF NFC / RFID Reader [pdf] User Manual PUCKBASE01, TYQ-PUCKBASE01, TYQPUCKBASE01, PFL20227-AA Puck Base USB HF NFC RFID Reader, PFL20227-AA, Puck Base USB HF NFC RFID Reader

References

- SpringCard Companion
- SpringCard Document Repository
- SpringPass - SpringCard
- Contactless & 13.56MHz RFID & NFC solutions and readers - SpringCard