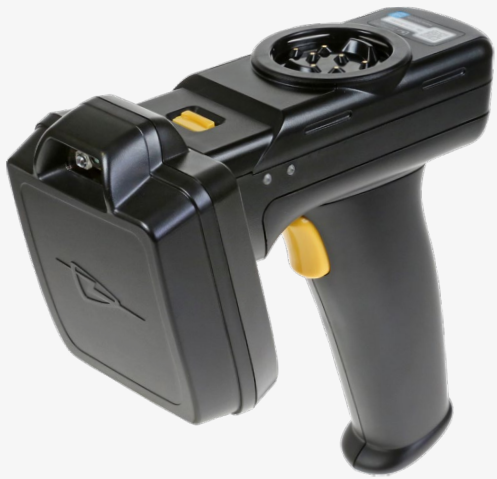
2128 *Bluetooth*® UHF RFID Reader

High Performance RFID reading with the convenience of ePop-Loq® connectivity and charging



Integrated ePop-Loq® socket allows data and charge connections to a Smartphone or Hand-Held Terminal

Simultaneous charging of both the UHF reader and attached Hand-Held Terminal

Connect Devices Using ePop-Loq®

The 2128 UHF RFID Reader introduces the revolutionary TSL® ePop-Loq® connector. The patented ePop-Loq® system allows data and charge connections to be passed from the reader to an attached device, such as a smartphone or handheld terminal.

The unique ePop-Loq® system is designed to safely separate when the reader is subject to large impacts, such as when dropped.

The 2128 UHF RFID Reader has flat landing contact pads, allowing for quicker docking and greater durability.

Single Point Charge Solution

The 2128 Docking Station allows charging of both the 2128 UHF RFID Reader and a smartphone or handheld terminal attached via an ePop-Loq® mount. This unique design can accommodate a wide range of devices from many handheld and smartphone manufacturers. The 2128 Docking Station Kit is supplied separately and includes the docking station, power supply unit and a USB data cable.

Powerful and Comprehensive Software Development Tools

Applications developed for the 1128, 2128, 2128P 1153, 1166 or 2166 UHF RFID Readers can easily be configured to work with the 2128L, as all of these readers share TSL's unique 'ASCII 2 Protocol'. This sophisticated, parameterised set of commands carry out multiple actions locally within the reader.

This approach enables multiple tag operations to be executed using simple pre-configured ASCII 2 commands which not only speeds integration of the reader into applications but also makes application development easier.

Flexible *Bluetooth*® Connectivity

The 2128 supports both *Bluetooth*® Classic as well as *Bluetooth*® Low Energy (BLE). The reader can be operated in Serial Port Profile (SPP) or Human Interface Device mode (HID), as well as supporting iApp2 for Apple iOS devices. The reader also supports an automatic re-connect mode for both Android and Apple devices.

Ultra Secure Data Gathering Option

As the ePop-Loq® system provides a wired connection between the host device and RFID Reader, sensitive data can be given that extra level of security by avoiding the use of wireless data transfer. The 2128 supports batch data collection and is equipped with a Micro SD socket and a real time clock. Up to 500 million transponder EPCs can be stored on a 32GB Micro SD card (optional purchase). This provides the ability to collect and log data even if USB or *Bluetooth*® communication channels are not available. Docking the 2128 then enables this data to be synchronised with a PC.

Features:

High Performance *Bluetooth*® Multi-Modal Data Capture
UHF RFID and 2D barcode data capture in an single device.

Hardware Platform Independence
Operates with wide variety of *Bluetooth*® wireless technology enabled host devices from smartphones to tablets, laptops and desktop computers.

OS Independence
The reader is compatible with Android, iOS and Windows.

Integrated ePop-Loq® Socket
A smarter way of mounting devices to the UHF RFID reader.

Bluetooth LE Support
Lower power consumption and longer battery life.

Direct USB Connection
For increased security of data transfer via ePop-Loq® mounts.

Lightweight
Only 400g (14.1oz) including battery, trigger handle and 2D Imager.

High Performance Barcode Scanning
Integrated 2D imaging engine provides class leading barcode scan performance via its unique patent pending fast pulse illumination which delivers outstanding motion tolerance and class leading 1D and 2D data capture.

Made for iPod iPhone iPad

Bluetooth®

6th April 2020

2128 Preliminary Specifications

Physical and Environmental Characteristics

Dimensions:	16.0 cm x 7.7 cm x 17.5cm (LxWxH).
Weight:	365 g / 12.8 oz (including non-imager antenna, battery & trigger handle). 400 g / 14.1 oz (including imager antenna, battery & trigger handle).
User input:	Trigger button.
User feedback:	Speaker, vibration motor, LED.
Power:	Removable, rechargeable 3.7 volt 2250 mAh Lithium Polymer pack (Optional Power Handle with 6700 mAh Lithium Polymer pack available).
Enclosure materials:	Polycarbonate.

Performance Characteristics

RFID engine:	TSL® custom module with embedded Impinj R2000.
Communication protocols:	TSL® ASCII 2.0 parameterised command set and Impinj binary protocol.
Memory:	Optional Micro SD card (maximum 32GB capacity supported). Up to 500 million date and time stamped EPCs can be stored on a 32GB Micro SD card (separate purchase from alternative supplier).
Compatible Host devices (*Bluetooth*®):	Any *Bluetooth*® Host[1] supporting the Serial Port Profile (SPP) or Human Interface Device (HID) profile (Android, iOS, Linux, Mac, Windows). See *Bluetooth*® Mode Comparison.
Compatible Host devices (USB):	Any USB host with FTDI VCP driver support (Windows, Linux, Mac, Android).

Environmental

Operating Temp.:	-10°C to 40°C (14°F to 104°F).
Charging Temp.:	5°C to 40°C (41°F to 104°F).
Storage Temp.:	Less than 1 month at -20°C to +45°C (-4°F to 113°F). Less than 6 months at -20°C to +35°C (-4°F to 95°F).
Humidity:	5% to 85% non-condensing.
Drop Spec:	Multiple drops to concrete: 4 ft./1.2 m ambient, 3ft / 0.9m across the operating temperature range.
Tumble:	500 0.5 metre tumbles at room temperature (1,000 cycles).
Environmental Sealing:	IP54.
Electrostatic Discharge (ESD):	± 15kVdc air discharge; ± 8kVdc contact discharge.
MIL-STD 810F:	Meets and exceeds applicable MIL-STD 810F for drop, tumble and sealing.

RFID Performance

Standards supported:	EPC Class 1 Gen 2.
Nominal read range[2]:	Up to 6 m (19.6 ft).
Nominal write range[2]:	Up to 3 m (9.8 ft).
Field:	150-degree forward facing.
Antenna:	Detachable, Right Hand Circularly Polarized with optional 2D scanner.
Frequency Range:	EU: 865-868 MHz; US: 902-928 MHz.
Maximum Output Power:	33 dBm EIRP[3].

Barcode Scanning

Barcode module:	Optional 2D imager.
Sensor Resolution:	752 x 480 pixels.
Field of View:	Horizontal: 40°, Vertical: 25°.
Focal Distance:	8 in (203 mm).
Aiming LED (VLD):	655nm Laser.
Illumination:	2x 625nm LEDs.
Min. Print Contrast:	Minimum 25%.
Symbologies Supported:	1D: All major codes 2D: PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR code, Micro QR code, Aztec, MaxiCode Postal Codes: US PostNet, US Planet, UK Postal, Australian Postal, Japan Postal Dutch Postal (KIX).
Ranges[4]:	Type / Near / Far 5 mil Code 39 / 2.1 in./5.3 cm / 7.5 in./19.1 cm 100% UPC/EAN / 1.6 in./4.1 cm / 15.5 in./39.4 cm 6.7 mil PDF417 / 3.4 in./8.6 cm / 7.1 in./18.0 cm

Communication

Bluetooth®:	*Bluetooth*® Version 4.2.
Bluetooth® Profiles:	SPP Profile, HID Profile, Apple iAP2, *Bluetooth*® Low Energy.
Bluetooth® Power:	TX Power +12dBm.
Bluetooth® Range:	Up to 100m.
Bluetooth® Pairing:	Simple Secure Pairing, NFC OOB Pairing.
Direct USB	USB connection to handheld terminal via ePop-Loq® cases (separate purchase).

Peripherals and Accessories

External interface:	Custom connector - requires 2128 Docking Station for battery charging, and USB connectivity.
USB operating modes:	Tethered for real time data capture in conjunction with SmartWedge software. Download of stored scan data.
Desktop charger:	TSL® 2128 Docking Station (separate purchase).
Power Handle	Alternative trigger handle gives approximately 3X the original battery capacity.

[1] Compatible *Bluetooth*® stack required in the Host device
[2] Tag Read/Write performance is dependent on tag type, items tagged, number of tags in the field and other radio and environmental factors
[3] 33 dBm EIRP or maximum for regulatory region
[4] Artificial lighting can affect scanning performance

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Other Accessories:	New ePop-Loq® cases can be ordered by special request (volume dependent, lead times apply).

Regulatory

EMI/EMC FCC:	FCC Part 15 Subpart C Section 15.247 EN 301 489-1 V2.1.1, EN301 489-17 V3.1.1 EN55024; EN 55032
Electrical Safety:	EN 60950-1
RF Exposure:	EU: EN 50364, EN 62479; USA: FCC Part 2 (Section 2.1091), OET Bulletin 65 Supplement C; Canada: RSS-102
RFID/Bluetooth:	EN 302 208 V3.1.1 FCC Part 15 Subpart C Section 15.247

Part Numbers

2128-ES0 (ETSI) 2128-AS0 (FCC)	2128 *Bluetooth*® UHF Reader with 2D Imager, UHF Antenna, Trigger Handle, Battery.
2128-EX0 (ETSI) 2128-AX0 (FCC)	2128 *Bluetooth*® RFID Reader with UHF Antenna (No Imager), Trigger Handle, Battery.
2128-CRD	2128 Docking Station, Power Supply and Mini USB Cable.

TSL® RFID Apps

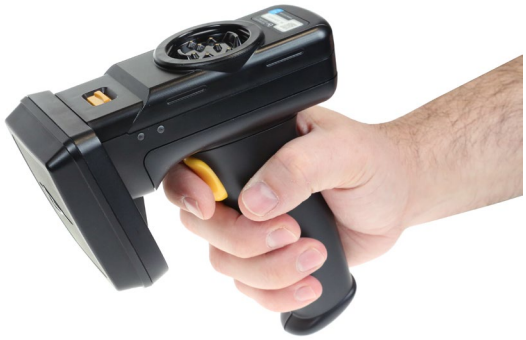
RFID Explorer
www.tsl.com/apps/rfid-explorer

RFID Tag Finder
www.tsl.com/apps/rfid-tag-finder

RFID Web Wedge
www.tsl.com/apps/rfid-web-wedge

RFID Scan Scan Write
www.tsl.com/apps/rfid-scan-scan-write

TSL® Reader Configuration
www.tsl.com/apps/tsl-reader-configuration



Warranty

The TSL® 2128 reader is warranted against defects in workmanship and materials for a period of one year (12 months) from date of shipment, provided the product remains unmodified and is operated under normal and proper conditions.

Terms

"Made for iPod," "Made for iPhone," and "Made for iPad" mean that an electronic accessory has been designed to connect specifically to iPod, iPhone, or iPad, respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod, iPhone, or iPad may affect wireless performance.

iPad, iPhone, iPod and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries.

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Mounts

Connect Enterprise Hand-Held Terminals using ePop-Loq® mounts:

Zebra TC20 / TC25

Zebra TC70 / TC75

Zebra TC51 / TC56

Datalogic Memor 1

Datalogic Memor 10

Honeywell D75e

Honeywell CT50 / CT60

Honeywell EDA50

Honeywell CT40

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About TSL®

Technology Solutions UK Ltd (TSL®) is a leading manufacturer of high performance mobile RFID readers used to identify and track products, assets, data or personnel.

For over two decades, TSL® has delivered innovative data capture solutions to Fortune 500 companies around the world using a global network of distributors and system integrators. Specialist in-house teams design all aspects of the finished products and software ecosystems, including electronics, firmware, application development tools, RF design and injection mould tooling.

TSL® is an ISO 9001:2015 certified company.

ISO 9001: 2015

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