



3128 **BLUETOOTH**[®] RAIN RFID UHF READER

HIGH PERFORMANCE, ULTRA-SECURE, **BLUETOOTH**-ENABLED UHF RFID READER



Latest Hardware Advances



The TSL[®] 3128 UHF RFID Reader combines the market's most advanced security features with the latest generation of Impinj silicon for read rates of up to 700 RFID tags per second.

Hardware-based de-duplication for up to 1 million tags prevents overwhelming the connected host with information.

The inclusion of a 'Power Handle' increases battery capacity, which combined with more efficient hardware provides longer running times than ever before.

Multiple operations per tag are possible during a single inventory scan - read from multiple areas of each tag, or write to or even lock the tag. Process massive volumes of tracked items in whatever way is needed, all in lightning fast times.

Flexible charging options



The 3128 Reader's Power Handle contains integrated charging electronics, allowing it to be charged as a stand-alone unit using any

30W+ USB-C Power Delivery (PD) Power Supply.

Buy a spare Power Handle and always have a fully charged battery on standby, for all-day scanning. Plus a newly available Hot-Swap accessory provides truly non-stop operation, by allowing the Reader to remain ON whilst swapping Power Handles - no reconnecting to the Host Device required, no re-launching of apps, and no loss of scanned data.

Quick Configuration with Command Scan

3128 Readers with the 2D Imager option can use TSL's patent-pending 'Command Scan' feature to scan special barcodes to configure the Reader. This allows lightning fast Reader configuration, along with on-the-fly adjustment of Reader parameters, opening up a world of improved workflow scenarios. Some barcode examples can be viewed in [this document](#).



Batch Mode

In Batch Mode, tag readings can be stored on an internal Micro SD card (separate purchase), allowing the 3128 Reader to be used completely standalone if desired - without any host device. The 3128 is compatible with Micro SD cards up to 256GB, allowing storage of up to 4 billion(!) EPCs - all date and time stamped by the on-board Real Time Clock.

Market's Most Advanced Security



The 3128 Reader is future regulation/Cyber Security Acts ready. It features Tag Authentication, Secure Data Storage, Encrypted Communication, Data

Acquisition Authenticity checks, Anti-Counterfeiting Measures and Personnel Authentication.

Features:

Total Independence

Use standalone, or with a wide variety of *Bluetooth* wireless technology enabled host devices including smartphones, tablets, Enterprise Handhelds and PC's. Operates with Android, iOS, Linux, Mac, Windows.

Backwards Compatible

TSL focus on providing long term support of their RFID Readers and minimal design disruption. New TSL Readers are compatible with existing software. Software only needs to be updated if wanting to make use of newly added features.

Lowest Cost of Ownership

A higher battery capacity and lower power consumption means fewer charging cycles, resulting in a longer battery lifespan. The unique modular design allows the antenna and power handle to be quickly removed/attached. Swap these parts between Readers for speedy troubleshooting - only replace the faulty part!

High Performance Barcode Scanning

Optional 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.

Passive Sensor Tag Reading

Support has been added for HID and other sensor transponders (temperature, strain, humidity, acceleration) and a demo app is provided.

3128 SPECIFICATIONS

Physical and Environmental Characteristics

Dimensions (HxWxL):	17.2 x 7.7 x 15.0 cm
Weight:	445 g (including Power Handle).
User input:	Trigger button.
User feedback:	Speaker, vibration motor, LED.
Power:	Rechargeable 25.4Wh, 7.3V Lithium Polymer battery pack.
Minimum operating time ¹ :	Light use ² : 20 hrs Moderate use ³ : 11 hrs (preliminary estimates) Heavy use ⁴ : 6.5 hrs
Input rating:	USB-C with Power Delivery (45W max)
Supported USB Power Delivery (PD) Profiles:	Fixed PDOs at 5V/3A, 9V/3A, 15V/3A (up to 45W max)
Enclosure materials:	Polycarbonate.

Performance Characteristics

RFID engine:	TSL custom module with embedded Impinj E510.
Communication protocols:	TSL ASCII 3 parameterised command set.
Security features:	HID OmniKey™ Security Chip.
Memory:	Optional Micro SD card (maximum 256GB capacity supported) - separate purchase from alternative supplier.
Compatible Host devices (Bluetooth):	Any Bluetooth® Host ⁵ supporting the Serial Port Profile (SPP), Human Interface Device (HID), BLE with HOG (HID over GATT) or BLE with SOG (Serial over GATT). See Bluetooth Mode Comparison .
Compatible Host devices (USB):	Any USB host with USB CDC 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 v2
Nominal read range ⁶ :	Up to 7 m (22.9 ft) ⁷
Nominal write range ⁶ :	Up to 3 m (9.8 ft)

Field:	150-degree forward facing (approx.)
Antenna:	Detachable, Circularly Polarized with optional 2D scanner.
Frequency Range:	EU: 865-868MHz, 916-919MHz US: 902-928MHz
Maximum Output Power:	Up to 29 dBm (region dependent) + 3.0 dBiC Antenna

Barcode Scanning

Optional 2D Barcode Engine:	Optional TSL® custom 2D Barcode Scan Engine module.		
Sensor Resolution:	1280 x 960 pixels, rolling shutter		
Field of View:	Horizontal: 44.5°, vertical: 33.5°		
Focal Distance:	From front of engine: 15.24 cm (6 in.)		
Aiming LED:	Green LED		
Illumination:	1 warm white LED		
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 ⁸ :	Barcode	Near	Far
	5 mil Code 39	6.1 cm	24.1 cm
	5 mil Code 128	7.1 cm	22.9 cm
	6.67 mil PDF 417	6.1 cm	20.3 cm
	10 mil DataMatrix	7.4 cm	21.6 cm
	100% UPCA	4.6 cm	49.5 cm
	15 mil QR	3.0 cm	29.2 cm
	20 mil QR	3.0 cm	35.6 cm

Communication

Bluetooth®:	Bluetooth® v4.2 compliant (v5.1 compatible)
Bluetooth GATT Services:	- Device Information Service - Battery Service - HID over GATT - Serial over GATT (TSL)
Bluetooth frequency range:	2.4 - 2.4835 GHz.
Bluetooth profiles:	SPP Profile, HID Profile, Apple iAP2, Bluetooth Low Energy.
Bluetooth range ⁹ :	Up to 100m.
Bluetooth pairing:	Simple Secure Pairing, NFC OOB Pairing.
Physical host device connection	Direct connection via ePop-Loq® cases (separate purchase).

¹ Minimum operating time figures are based on new units that have been stored, charged and operated within the stated Environmental Specifications. Units stored over 3 months must be recharged every 3 months. Number of transponders in the environment affects minimum operating time.

² Light Use: Continuous RFID inventories for 20s of every 120s

³ Moderate Use: Continuous RFID inventories for 10s of every 30s

⁴ Heavy Use: Continuous RFID inventories for 59s of every 60s

⁵ Compatible [Bluetooth](#) stack required in the Host device

⁶ Tag Read/Write performance is dependent on tag type, items tagged, number of tags in the field and other radio and environmental factors

⁷ TBC

⁸ Artificial lighting can affect scanning performance

⁹ Open field

3128 SPECIFICATIONS

Peripherals and Accessories

External interface:	USB-C connector or custom 8-Way Power-Pin connector (for use with docking cradle)
Power supply management	Separate purchase (order USBC-PSU-KIT45)
Other accessories available:	See page 5 for available accessories See page 6 for device mounts for a variety of smartphones and handheld terminals.

Regulatory

Regions	EU (CE), USA (FCC), Canada (see page 4 for details)
FCC ID	S6J3128
IC	8948A-3128
EMC	Pending
RF	Pending
Electrical Safety	Pending
Environmental	Pending

TSL RFID Apps

These TSL RFID Demo apps have all been written using our free Software Development Kits:



RFID Sensor Tag Explorer
<https://www.tsl.com/apps/sensor-tag-explorer>



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



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



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



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



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



RFID Inventory
<https://www.tsl.com/apps/rfid-inventory>

Warranty

The TSL 3128 Reader is warranted against manufacturing defects for a period of one year (12 months), provided the product remains unmodified and is operated under normal and proper conditions.

Full warranty information can be downloaded from the TSL website at www.tsl.com/warranty

Maintenance Programs

To enhance and extend your warranty, consider purchasing a [CompleteCare Maintenance Program](#) for one-stop coverage with extensive customer support.

- 1, 3 & 5 year terms available
- Advance exchange with comprehensive cover option (including accidental damage cover)



Terms

The *Bluetooth*® word mark and logos are registered trademarks owned by *Bluetooth* SIG, Inc. and any use of such marks by Technology Solutions UK Ltd is under license. Other trademarks and trade names are those of their respective owners.

"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.



3128/3138 Docking Cradle, for use with '8-Way Power Pins' variants

3128 PART NUMBERS

Countries	Part Numbers		Operating Frequency
ETSI Lower Band			
Albania Andorra Austria Belgium Bosnia & Herzegovina Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Falkland Islands Finland France French Guiana Georgia (Licence Required)	Germany Greece Greenland Guernsey Guadeloupe Hungary Iceland Ireland Italy Jersey Latvia Liechtenstein Lithuania Luxembourg Macedonia Malta Martinique Monaco	Montenegro Netherlands Norway Poland Portugal Romania Saudi Arabia Slovakia Slovenia Spain Sweden Switzerland United Kingdom (UK)	USB-C connector, 2D barcode imager: 3128-ES1-EU USB-C connector, no barcode imager: 3128-EX1-EU 8-Way Power Pins, 2D barcode imager: 3128-ES2-EU 8-Way Power Pins, no barcode imager: 3128-EX2-EU - ETSI Lower Band - Operating frequency: 865 - 868 MHz
ETSI Upper Band			
Albania Austria Belgium* Bosnia and Herzegovina Bulgaria Croatia Cyprus Czech Republic Denmark Estonia Finland France	Greece Hungary Iceland Ireland Italy Liechtenstein* Lithuania Luxembourg Macedonia Malta Moldova Montenegro Norway	Poland Portugal Romania Serbia Slovakia Slovenia Spain Sweden Switzerland* Türkiye United Kingdom	USB-C connector, 2D barcode imager: 3128-AS1-EU USB-C connector, no barcode imager: 3128-AX1-EU 8-Way Power Pins, 2D barcode imager: 3128-AS2-EU 8-Way Power Pins, no barcode imager: 3128-AX2-EU - ETSI Upper Band - Operating frequency: 916 - 919MHz - Each country listed may have further requirements or restrictions - for more information, visit www.tsl.com/uhf-frequency-allocations/
*Limited implementation			
FCC			
USA, Canada, Ecuador, Guam, Guatemala, Northern Mariana Islands, Puerto Rico	USB-C connector: 8-Way Power Pins: 2D barcode imager: 3128-AS1-US 3128-AS2-US No barcode imager: 3128-AX1-US 3128-AX2-US		- FCC - Operating frequency: 902 - 928 MHz
Colombia	USB-C connector: 8-Way Power Pins: 2D barcode imager: 3128-AS1-CO 3128-AS2-CO No barcode imager: 3128-AX1-CO 3128-AX2-CO		Operating frequency: 915 - 928 MHz

*If you are interested in purchasing for a country/region that is not listed above, please contact enquiries@tsl.com for assistance.



USB-C connector option



8-Way Power Pins option, for use with Docking Cradle

3128 PART NUMBERS

Accessories



USBC-PSU-KIT45 - 45W USB-C PSU with Power Delivery (PD)

For charging 3128/3138 Readers fitted with a USB-C Power Handle. Also for use with the Docking Cradle Kit. Includes UK, US, EU and AU plug adapters.



3138-CRD-01-KIT - Docking Cradle Kit for 3128/3138 RFID Readers, includes USB-C cable and support clip

For charging 3128/3138 Readers fitted with an '8-Way Power Pins' Power Handle. Requires a 30W or higher USB-C PSU with Power Delivery (not included, order USBC-PSU-KIT45).



31PH-01 - 31x8 Power Handle (USB-C connector) – includes USB-C cable

Enjoy continuous operation of the 3128 Reader, by keeping a spare Power Handle on charge. Includes USB-C cable.



31PH-02 - 31x8 Power Handle (8-way Power Pins)

Enjoy continuous operation of the 3128 Reader, by keeping a spare Power Handle on charge. For use with Docking Cradle Kit.



31-HS-01 - 31x8 Hot-Swap Accessory

This optional upgrade allows the UHF Reader to remain ON whilst changing the Power Handle, for non-stop RFID scanning. Simply swap Power Handles, and pull the trigger to continue your inventory - without interrupting your process or losing connection to the host device.

For use with both USB-C and 8-way Power Pin variants.



1128-HOLST-01-TRG - Belt Holster

Belt Holster for 1128/3128 Readers

3128 PART NUMBERS

Slide-On Mounts	Part Number
Samsung Galaxy A05 Mount	1128-MNT-GALAXY-A05
Samsung Galaxy A05s Mount	1128-MNT-GALAXY-A05S
Samsung Galaxy A06 Mount	1128-MNT-GALAXY-A06
Samsung Galaxy A07 Mount	1128-MNT-GALAXY-A07
Samsung Galaxy A14 Mount	1128-MNT-GALAXY-A14
Samsung Galaxy A15 Mount	1128-MNT-GALAXY-A15
Samsung Galaxy A16 Mount	1128-MNT-GALAXY-A16
Samsung Galaxy A17 Mount	1128-MNT-GALAXY-A17
Samsung Galaxy A25 Mount	1128-MNT-GALAXY-A25
Samsung Galaxy A26 Mount	1128-MNT-GALAXY-A26
Samsung Galaxy A32 Mount	1128-MNT-GALAXY-A32
Samsung Galaxy A34 Mount	1128-MNT-GALAXY-A34
Samsung Galaxy A35 Mount	1128-MNT-GALAXY-A35
Samsung Galaxy A36 Mount	1128-MNT-GALAXY-A36
Samsung Galaxy A51 Mount	1128-MNT-GALAXY-A51
Samsung Galaxy A54 Mount	1128-MNT-GALAXY-A54
Samsung Galaxy A55 Mount	1128-MNT-GALAXY-A55
Samsung Galaxy A56 Mount	1128-MNT-GALAXY-A56
Samsung Galaxy A57 Mount	1128-MNT-GALAXY-A57
Samsung Galaxy J5 Mount	1128-MNT-GALAXY-J5
Samsung Galaxy S21 Mount	1128-MNT-GALAXY-S21
Samsung Galaxy S23 Mount	1128-MNT-GALAXY-S23
Samsung Galaxy S23 FE Mount	1128-MNT-GALAXY-S23-FE
Samsung Galaxy S23+ Mount	1128-MNT-GALAXY-S23-PLUS
Samsung Galaxy S23 Ultra Mount	1128-MNT-GALAXY-S23-ULTRA
Samsung Galaxy S24 Mount	1128-MNT-GALAXY-S24
Samsung Galaxy S24 FE Mount	1128-MNT-GALAXY-S24-FE
Samsung Galaxy S24+ Mount	1128-MNT-GALAXY-S24-PLUS
Samsung Galaxy S24 Ultra Mount	1128-MNT-GALAXY-S24-ULTRA
Samsung Galaxy S25 Mount	1128-MNT-GALAXY-S25
Samsung Galaxy S25 Edge Mount	1128-MNT-GALAXY-S25-EDGE
Samsung Galaxy S25+ Mount	1128-MNT-GALAXY-S25-PLUS
Samsung Galaxy S25 Ultra Mount	1128-MNT-GALAXY-S25-ULTRA
Samsung Galaxy S37 Mount	1128-MNT-GALAXY-S37
Samsung Galaxy S6 Mount	1128-MNT-GALAXY-S6
Samsung Galaxy S7 Mount	1128-MNT-GALAXY-S7
Samsung Galaxy S8 Mount	1128-MNT-GALAXY-S8
Samsung Galaxy XCover 7 Mount	1128-MNT-GALAXY-XCOVER7
Samsung Galaxy XCover 7 Pro Mount	1128-MNT-GALAXY-XCOVER7-PRO



Attach smartphones and hand-held terminals to the 3128 Reader using TSL's range of slide-on mounts. The mounts hold the device securely in place, yet can be slid on or off in one quick action.



3128 PART NUMBERS

iPad Mini (3rd gen) Mount	1128-MNT-IPADMINI3
iPad Mini (4th gen) Mount	1128-MNT-IPADMINI4
iPad Mini (5th gen) Mount	1128-MNT-IPADMINI5
iPad Mini (6th gen) Mount	1128-MNT-IPADMINI6
iPhone 7 Mount	1128-MNT-IPHN7G
iPhone 7 Plus Mount	1128-MNT-IPHN7PLUS
iPhone 8, iPhone SE 2020/2022 Mount	1128-MNT-IPHN8G
iPhone 8 Plus Mount	1128-MNT-IPHN8PLUS
iPhone 11 Mount	1128-MNT-IPHN-11
iPhone 11 Pro Mount	1128-MNT-IPHN11-PRO
iPhone 11 Pro Max Mount	1128-MNT-IPHN11-PRO-MAX
iPhone 12 and 12 Pro Mount	1128-MNT-IPHN-12
iPhone 12 Mini Mount	1128-MNT-IPHN12-MINI
iPhone 12 Pro Max Mount	1128-MNT-IPHN12-PRO-MAX
iPhone 13 Mount	1128-MNT-IPHN-13
iPhone 13 Mini Mount	1128-MNT-IPHN13-MINI
iPhone 13 Pro Mount	1128-MNT-IPHN13-PRO
iPhone 13 Pro Max Mount	1128-MNT-IPHN13-PRO-MAX
iPhone 14 Mount	1128-MNT-IPHN-14
iPhone 14 Plus Mount	1128-MNT-IPHN-14-PLUS
iPhone 14 Pro Mount	1128-MNT-IPHN14-PRO
iPhone 14 Pro Max Mount	1128-MNT-IPHN14-PRO-MAX
iPhone 15 Mount	1128-MNT-IPHN-15
iPhone 15 Plus Mount	1128-MNT-IPHN15-PLUS
iPhone 15 Pro Mount	1128-MNT-IPHN15-PRO
iPhone 15 Pro Max Mount	1128-MNT-IPHN15-PRO-MAX
iPhone 16 Mount	1128-MNT-IPHN16
iPhone 16e Mount	1128-MNT-IPHN16E
iPhone 16 Plus Mount	1128-MNT-IPHN16-PLUS
iPhone 16 Pro Mount	1128-MNT-IPHN16-PRO
iPhone 16 Pro Max Mount	1128-MNT-IPHN16-PRO-MAX
iPhone 17 Mount	1128-MNT-IPHN17
iPhone 17 Air Mount	1128-MNT-IPHN17-AIR
iPhone 17 Pro Mount	1128-MNT-IPHN17-PRO
iPhone 17 Pro Max Mount	1128-MNT-IPHN17-PRO-MAX
iPhone X (5.8") Mount	1128-MNT-IPHN-X
iPhone XR Mount	1128-MNT-IPHN-XR
iPhone XS Mount	1128-MNT-IPHN-XS
iPhone XS Max Mount	1128-MNT-IPHN-XS-MAX
iPod touch (6th gen) Mount	1128-MNT-IPOD6G
iPod touch (7th gen) Mount	1128-MNT-IPOD7G

Motorola Moto E14 Mount	1128-MNT-MOTO-E14
Motorola Moto G (2024) Mount	1128-MNT-MOTO-G2024
Motorola Moto G Play (2024) Mount	1128-MNT-MOTO-G2024-PLAY
Motorola Moto G (2025) Mount	1128-MNT-MOTO-G2025
Motorola Moto G Power (2025) Mount	1128-MNT-MOTO-G2025-POWER
Moto G (3rd gen) Mount	1128-MNT-MOTO-G-GEN3
Moto G (5th gen) Mount	1128-MNT-MOTO-G-GEN5
Motorola Edge 40 Mount	1128-MNT-MOTOROLA-EDGE40
Google Pixel 7 Mount	1128-MNT-PIXEL-7
Google Pixel 7a Mount	1128-MNT-PIXEL-7A
Google Pixel 7 Pro Mount	1128-MNT-PIXEL-7-PRO
Google Pixel 8 Mount	1128-MNT-PIXEL-8
Google Pixel 8a Mount	1128-MNT-PIXEL-8A
Google Pixel 8 Pro Mount	1128-MNT-PIXEL-8-PRO
1128-MNT-PIXEL-9	Google Pixel 9 & 9 Pro Mount
1128-MNT-PIXEL-9A	Google Pixel 9a Mount
1128-MNT-PIXEL-9-PRO-XL	Google Pixel 9 Pro XL Mount
1128-MNT-PIXEL-10	Google Pixel 10 Mount
1128-MNT-PIXEL-10-PRO-XL	Google Pixel 10 Pro XL Mount
1128-MNT-XIAOMI-13	Xiaomi 13 Mount
1128-MNT-XIAOMI-14	Xiaomi 14 Mount
1128-MNT-XIAOMI-15	Xiaomi 15 Mount
1128/3128 Accessory Mount	1128-MNT-UNI
1128/3128 Slide-on Pop-Loq® Mount Adapter	1128-PL

ABOUT

ABOUT TSL®



Technology Solutions UK Ltd (TSL®), part of HID, 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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ABOUT HID



HID powers the trusted identities of the world's people, places and things. We make it possible for people to transact safely, work productively and travel freely. Our trusted identity solutions give **people** convenient access to physical and digital **places** and connect **things** that can be identified, verified and tracked digitally. Millions of people around the world use HID products and services to navigate their everyday lives, and billions of things are connected through HID technology. We work with governments, educational institutions, hospitals, financial institutions, industrial businesses and some of the most innovative companies on the planet. Headquartered in Austin, Texas, HID has over 4,000 employees worldwide and operates international offices that support more than 100 countries. HID is an ASSA ABLOY Group brand.

For more information, visit www.hidglobal.com.