TECHNOLOGY SOLUTIONS UK LTD
part of HID

www.tsl.com

1128 *BLUETOOTH*® RAIN RFID UHF READER

HIGH PERFORMANCE, *BLUETOOTH* WIRELESS ENABLED RFID READER

RFID-only Antenna with Slimline Grip

Trigger Handle and 2D UHF antenna

Custom Mount for Datalogic Skorpio X3

Modular design

Made for iPhone | iPad | iPod

Bluetooth®

Data Collection Performance Like No Other

The TSL® 1128 *Bluetooth*® RAIN RFID Reader provides new levels of RFID performance. With its R2000 core and range of interchangeable high performance antennas, the 1128 performs like no other reader giving the user the highest levels of flexibility currently available in today's market. Designed to read and write to EPC Class 1 Gen 2 (ISO18000-6C) tags, the 1128 can also be configured with class leading high performance 2D barcode data scanning to bring unparalleled data collection capabilities to any host it is connected to. The 2D imager engine incorporates fast-pulse illumination and fast sensor shutter speeds, delivering outstanding motion tolerance and class leading 1D and 2D data capture.

Platform Independent RAIN RFID Reader

Use existing *Bluetooth* wireless technology enabled[1] host devices including Enterprise Handhelds, Consumer Phones, Touchscreen MP3 players, Tablets and PC's – the 1128 will bring high performance RFID and 2D scanning to all these devices running a wide range of Operating Systems. The 1128 *Bluetooth* RAIN RFID Reader can also be tethered to a PC using a USB cable.

Extensive software support is available for a wide range of platforms including code samples, demonstration applications and source code.

Easier Application Development

The 1128 *Bluetooth* RAIN RFID Reader uses TSL's unique ASCII protocol for faster and easier application development. This sophisticated parameterised ASCII protocol provides the developer a powerful set of commands that carry out multiple actions locally within the reader. This approach enables multiple tag operations executed using simple pre-configured ASCII commands which not only speeds integration of the reader into applications but also abstracts the developer from some of the complexities of the underlying Native API and ultimately results in un-paralleled levels of performance.

A Configuration To Suit Your Application

The choice of host device is yours - from low cost touchscreen MP3 players through to fully featured Enterprise Handheld Terminals. The choice of ergonomic style includes a compact slimline grip through to a comfortable trigger handle for scan intensive RFID and 2D bar code data collection applications.

EPC data can be stored on an optional Micro SD memory card (up to 500 million transponder EPCs on a 32GB card - separate purchase from alternative supplier). This provides the ability to collect and log data even if USB or *Bluetooth* communication channels are not available.

Features:

High Performance *Bluetooth* Multi-modal Data Capture

UHF RFID and 2D barcode data capture in one integrated *Bluetooth* device.

Hardware Platform Independence

Operates with wide variety of *Bluetooth* wireless technology enabled host devices including touchscreen MP3 players, phones, tablets, Enterprise Handhelds and PC's.

OS Independence

Operates with Android, iOS, Windows 10, 8, 7, Vista, XP, Windows Mobile, Windows CE, and Windows Phone.

Batch Data Collection

Removable high capacity Micro SD data card and real time clock for extended batch data collection independent of host connection.

Flexible Configuration

Unique interchangeable high performance antennas including optional 2D scanning and trigger handle with a range of device specific mounts for holding phones and MP3 players.

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

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1128 SPECIFICATIONS*

*These specifications only apply to TSL 1128 Readers manufactured from November 2021 onwards, or with antenna serial numbers starting 1128-S2.

Physical and Environmental Characteristics

Dimensions (LxWxH):	16.0 cm x 7.7 cm x 16.9 cm – Trigger handle. 16.0 cm x 7.7 cm x 9.7 cm – Slimline grip.
Weight:	375 g / 13.2 oz (including battery & trigger handle).
User input:	Trigger button.
User feedback:	Speaker, vibration motor, LED.
Power:	Removable, rechargeable 3.7V, 2400mAh, 8.9Wh Lithium Polymer battery pack.
Minimum operating time[1]:	Light use[2]: 6 hrs Moderate use[3]: 3.5 hrs Heavy use[4]: 1.5 hrs
Enclosure materials:	Polycarbonate.

Performance Characteristics

RFID engine:	TSL® custom module with embedded Impinj R2000.
Communication protocols:	TSL® ASCII 2.0 parameterised command set Impinj binary.
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[5] 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[6]:	Up to 5.5 m (18 ft).
Nominal write range[6]:	Up to 2 m (6.5 ft).
Field:	150-degree forward facing (approx.) measured from front of device.
Antenna:	Detachable, Circularly Polarized with optional 2D scanner.
Frequency Range:	EU: 865-868MHz; US: 902-928MHz. See Page 5 for other regions.
Maximum Output Power:	Up to 29 dBm (region dependent) + 3.0 dBiC Antenna
Antenna options:	High Performance CP. High Performance CP with 2D Imager.

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[7]:	

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* Version 2.1.
Bluetooth Frequency Range:	2.4 - 2.4835 GHz.
Bluetooth Profiles:	SPP Profile, HID Profile, Apple iAP.
Bluetooth Power:	Class 2.
Bluetooth TX Power:	3 dBm.
Bluetooth Range[8]:	30 m.
Bluetooth Pairing:	PIN, Simple Secure Pairing, NFC OOB Pairing.

[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] Artificial lighting can affect scanning performance

[8] Open field

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1128 SPECIFICATIONS*

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Peripherals and Accessories

External interface:	MicroUSB connector 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.
Optional charger:	TSL® 2136 4-Slot desktop charger.
Other Accessories:	Adapter mounts are available for a variety of smartphones handheld terminals. Slimline Grip, Trigger Handle. See page 6 for more information.

Regulatory

Regions	EU (CE), USA (FCC), Canada, Australia and more (see page 5 for details)
FCC ID	S6J1128
IC	8948A-1128
EMC	EN 55032:2015 +A11:2020 EN 55035:2017 +A11:2020 47 CFR Part 15B ICES-003:2020 Issue 7
RF	EN 300 328 V2.2.2 EN 302 208 V3.2.0 EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1 EN 301 489-17 V3.2.4 47 CFR Part 15C 15.247 RSS-247 Issue 1
Electrical Safety	IEC 62368-1:2018 EN 62368-1:2020 +A11:2020 UL 62368-1:2019 CAN/CSA C22.2 No. 62368-1:19
Environmental	2011/65/EU (RoHS 2) Restriction of the use of certain Hazardous Substances in electrical and electronic equipment 2015/863 (RoHS 3) Amendment to Annex II of 2011/65/EU

Warranty

The TSL® 1128 reader is warranted against manufacturing defects 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.

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

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.

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.

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

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EXAMPLE CONFIGURATIONS

With Honeywell Dolphin D75e

With Apple iPod touch® (4th & 5th gen)

With Motorola ES400

With *Bluetooth* wireless technology enabled computer

With Samsung Galaxy Tab S

With iPhone 6 Plus

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1128 PART NUMBER LIST

Countries	Part Numbers	Operating Frequency
Albania, Andorra, Austria, Belgium, Bosnia & Herzegovina, Bulgaria, Bhutan, 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom (UK)	With 2D barcode imager: 1128-EU-BT-UHF-IMG No barcode imager: 1128-EU-BT-UHF-A1	865 – 868 MHz 4 Channels
United States of America (USA), Guam, Guatemala, Northern Mariana Islands, Canada, Ecuador, Puerto Rico	With 2D barcode imager: 1128-US-BT-UHF-IMG No barcode imager: 1128-US-BT-UHF-A1	902 – 928 MHz 50 Channels
Australia	1128-AU-BT-UHF-IMG 1128-AU-BT-UHF-A1	920 – 926 MHz 12 Channels
Bangladesh	1128-BD-BT-UHF-IMG 1128-BD-BT-UHF-A1	925 – 927 MHz 4 Channels
Brazil (Licensed via ACURA)	1128-BR-BT-UHF-IMG 1128-BR-BT-UHF-A1	902 – 907.5, 915 – 928 MHz 50 Channels
Chile	1128-CL-BT-UHF-IMG 1128-CL-BT-UHF-A1	913 – 919, 925 – 928 MHz 14 Channels, Power Limited: 500mW EIRP Max
China	1128-CN-BT-UHF-IMG 1128-CN-BT-UHF-A1	920.5 – 924.5 MHz 16 Channels
Colombia	1128-CO-BT-UHF-IMG 1128-CO-BT-UHF-A1	915 – 928 MHz 24 Channels
El Salvador	1128-SV-BT-UHF-IMG 1128-SV-BT-UHF-A1	915 – 928 MHz 24 Channels
Hong Kong	1128-HK-BT-UHF-IMG 1128-HK-BT-UHF-A1	920 – 925 MHz 8 Channels
India	1128-IN-BT-UHF-IMG 1128-IN-BT-UHF-A1	865 – 867 MHz 3 Channels
Japan (Licensed via Xerafy)	1128-JP-BT-UHF-IMG 1128-JP-BT-UHF-A1	918 – 920.4 MHz, 3 Channels Power Limited: 500mW EIRP Max
Malaysia (Licensed via RES Malaysia)	1128-MY-BT-UHF-IMG 1128-MY-BT-UHF-A1	919 – 923 MHz 6 Channels
Peru	1128-PE-BT-UHF-IMG 1128-PE-BT-UHF-A1	916 – 928 MHz 23 Channels
Singapore (Licence Required)	1128-SG-BT-UHF-IMG 1128-SG-BT-UHF-A1	920 – 925 MHz 8 Channels
South Korea	1128-KR-BT-UHF-IMG 1128-KR-BT-UHF-A1	917 – 923.5 MHz 6 Channels
Taiwan (Licensed via ID-MART or NEC)	1128-TW-BT-UHF-IMG 1128-TW-BT-UHF-A1	922 – 928 MHz 10 Channels
Thailand (Licence Required)	1128-TH-BT-UHF-IMG 1128-TH-BT-UHF-A1	920 – 925 MHz 8 Channels

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

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1128 PART NUMBER LIST

Accessories	Part Number
Charging and Docking	
Docking Cradle Kit for 1128 RAIN RFID Reader	1128-CRD-02-KIT
4-Slot Battery Charger Kit	2136-01-4WMS-CHG
Spare Battery for 1128/2128 UHF Reader	1128-00-BA-2000
Grip handles	
Slimline Grip attachment.	1128-SLG
Holsters	
Belt Holster for 1128 Slimline Grip	1128-HOLST-01-SLG
Belt Holster for 1128/2128 with Trigger Handle	1128-HOLST-01-TRG
Slide-on Mounts	
iPad Mini (1st gen) Mount	1128-MNT-IPADMINI
iPad Mini (4th gen) Mount	1128-MNT-IPADMINI4
iPad Air (2nd gen) Mount	1128-MNT-IPADAIR2
iPhone 4 Mount	1128-MNT-IPHN4G
iPhone 5 Mount	1128-MNT-IPHN5G
iPhone 6 (4.7") Mount	1128-MNT-IPHN6G
iPhone 6 Plus (5.5") Mount	1128-MNT-IPHN6PLUS
iPhone 7 (4.7") Mount	1128-MNT-IPHN7G
iPhone 7 Plus (5.5") Mount	1128-MNT-IPHN7PLUS
iPhone 8 (4.7") Mount	1128-MNT-IPHN8G
iPhone 8 Plus (5.5") Mount	1128-MNT-IPHN8PLUS
iPhone 11 Mount	1128-MNT-IPHN-11
iPhone 11 Pro Mount	1128-MNT-IPHN-11-PRO
iPhone 11 Pro Max Mount	1128-MNT-IPHN-11-PRO-MAX
iPhone 12 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 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 (4th gen) Mount	1128-MNT-IPOD4G
iPod touch (5th gen) Mount	1128-MNT-IPOD5G
iPod touch (6th gen) Mount	1128-MNT-IPOD6G
iPod touch (7th gen) Mount	1128-MNT-IPOD7G
Galaxy Nexus Mount	1128-MNT-NEXUS
Motorola MC2100 Mount*	1128-MNT-MC2100*
Motorola MC40 Mount*	1128-MNT-MC40*
Motorola MC45 Mount*	1128-MNT-MC45*
Moto G (1st gen) Mount	1128-MNT-MOTOG
Moto G (2nd gen) Mount	1128-MNT-MOTO-G-GEN2
Moto G (3rd gen) Mount	1128-MNT-MOTO-G-GEN3
Moto G (5th gen) Mount	1128-MNT-MOTO-G-GEN5
Motorola ES400 Mount*	1128-MNT-ES400
Motorola TC55 Mount*	1128-MNT-TC55-01*
Samsung Galaxy J5 Mount	1128-MNT-GALAXY-J5
Samsung Galaxy S4 Mount	1128-MNT-GALAXY-S4
Samsung Galaxy S5 Mount	1128-MNT-GALAXY-S5
Samsung Galaxy S7 Mount	1128-MNT-GALAXY-S7
Nokia 1520 Mount	1128-MNT-NK1520
1128 Slide-on Pop-Loq® Mount Adapter	1128-PL

*Currently available in SLS RP materials only. Other handheld device mounts available by special request (volume dependent).

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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.

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