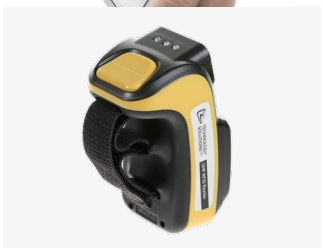
1153 WEARABLE *BLUETOOTH*® UHF RFID RAIN READER

COMPACT, LIGHTWEIGHT HIGH PERFORMANCE RFID READING



Made for iPhone | iPad | iPod

Bluetooth®

Data Collection Performance Like No Other

With its compact and lightweight form factor, the TSL® 1153 *Bluetooth* RAIN RFID Reader performs like no other reader, giving the user an extremely compact and lightweight multifunction data collection device. Designed to read and write to EPC Class 1 Gen 2 (ISO18000-6C) tags, the 1153 includes high performance 2D 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 UHF RFID Reader

Use existing *Bluetooth* wireless technology enabled host devices including enterprise handhelds, consumer smartphones, tablets and PCs – the 1153 will bring high performance RFID and 2D scanning to all these devices running a wide range of Operating Systems. The 1153 *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.

Integrate into Applications with Ease

The new 1153 *Bluetooth* RAIN RFID Reader incorporates TSL's unique ASCII 2 protocol for faster and easier application development. This sophisticated parameterised protocol provides the developer with a powerful set of commands that carry out multiple actions locally within the reader. This approach enables multiple tag operations to be 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 Consumer Smartphones through to fully featured Enterprise Handheld Terminals. The choice of ergonomic style includes either a 'back of hand' mount or an arm mount option 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 enterprise handhelds, consumer smartphones, tablets and PCs.

OS Independence

The reader is compatible with Android, iOS and Windows.

Batch Data Collection

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

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.

1st August 2025

1153 SPECIFICATIONS*

*These specifications only apply to TSL 1153 Readers with serial numbers higher than 7000.

Physical and Environmental Characteristics

Dimensions (LxWxH):	10.2 cm x 5.5 cm x 5.6 cm.
Weight (inc battery):	157 g / 5.5 oz.
User input:	Two Trigger buttons.
User feedback:	Speaker, vibration motor, three LEDs.
Power:	Removable, rechargeable 3.7V, 1200mAh, 4.5Wh Lithium Polymer battery pack.
Minimum operating time[1]:	Light use[2]: 10 hrs Moderate use[3]: 6.5 hrs Heavy use[4]: 2.5 hrs
Enclosure materials:	Polycarbonate.

Performance Characteristics

RFID engine:	ST ST25RU3993 based.
Communication protocols:	TSL ASCII 2.0 parameterised command set.
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). Comparison of *Bluetooth* modes for TSL UHF Readers.
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 at -20 to +60°C (-4°F to 140°F). Less than 3 months at -20°C to +45°C (-4°F to 113°F). Less than 1 year at -20°C to +30°C (-4°F to 86°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 6.5 ft./up to 2 m.
Nominal write range[6]:	up to 3.3 ft./up to 1 m.
Field:	150-degree forward facing (approx.) measured from front of device.
Antenna:	Internal Circularly Polarized.
Frequency Range:	EU: 865-868MHz; US: 902-928MHz.
Maximum Output Power:	Up to 25 dBm (region dependent) + 1.0 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[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 Range[8]:	30m.
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

1st August 2025

1153 SPECIFICATIONS*

*These specifications only apply to TSL 1153 Readers with serial numbers higher than 7000.

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 accessories:	2136 4-Slot Desktop Battery Charger

Regulatory

Regions	EU (CE), USA (FCC) and more (see page 4 for details)
FCC ID	S6J1153
EMC	EN 55032:2015 +A11:2020 EN 55035:2017 +A11:2020 47 CFR Part 15B
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
Electrical Safety	IEC 62368-1:2018 EN 62368-1:2020 +A11:2020 UL 62368-1:2019
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 1153 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

1st August 2025

1153 PART NUMBERS

Countries	Part Numbers	Operating Frequency
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, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom (UK)	With 2D barcode imager: 1153-EU-BT-UHF-IMG No barcode imager: 1153-EU-BT-UHF-A1	865 – 868 MHz 4 Channels
United States of America (USA), Guam, Guatemala, Northern Mariana Islands, Colombia, Ecuador, El Salvador, Puerto Rico	With 2D barcode imager: 1153-US-BT-UHF-IMG No barcode imager: 1153-US-BT-UHF-A1	917 – 927 MHz 50 Channels
Brazil (Licensed via ACURA)	1153-BR-BT-UHF-IMG	
China	1153-CN-BT-UHF-IMG 1153-CN-BT-UHF-A1	920.5 – 924.5 MHz 16 Channels
India	1153-IN-BT-UHF-IMG 1153-IN-BT-UHF-A1	865 – 867 MHz 3 Channels
Kazakhstan	1153-KZ-BT-UHF-IMG 1153-KZ-BT-UHF-A1	865 – 868 MHz 4 Channels Power Limited: 100mW EIRP Max
Thailand (Licence Required)	1153-TH-BT-UHF-IMG 1153-TH-BT-UHF-A1	920 – 925 MHz 8 Channels
Ukraine	1153-UA-BT-UHF-IMG 1153-UA-BT-UHF-A1	865 – 868 MHz 4 Channels Power Limited: 100mW EIRP Max

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

1st August 2025

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

CONTACT

Address:	Technology Solutions (UK) Ltd, Suite A, Loughborough Technology Centre, Epinal Way, Loughborough, Leicestershire, LE11 3GE, United Kingdom.
Telephone:	+44 1509 238248
Fax:	+44 1509 214144
Email:	enquiries@tsl.com
Website:	www.tsl.com

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.

1st August 2025