TECHNOLOGY SOLUTIONS UK LTD

2173 *BLUETOOTH*® LF, HF & NFC RFID READER
A MULTI-BAND, MULTI-ISO, PLATFORM-INDEPENDENT RFID READER

Bluetooth®

Made for
iPhone | iPad | iPod

Features:

Multi-Band RFID Reading and Writing
Combined LF RFID, HF RFID and NFC reading and writing in an incredibly compact and lightweight device.

Multi-ISO RFID
Supports multiple ISO industry standards including ISO15693, ISO14443(A/B) and ISO18092 ECMA-340 (NFC).

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.

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

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.

Integrate RFID Into Your Solution!

The 2173 reader enables a compatible *Bluetooth*® host to read and write a wide variety of HF and LF RFID transponders as well as capture 1D and 2D barcodes (imager version only). These can be 'typed' into any application on the host device using the *Bluetooth*® HID keyboard mode. Alternatively, the reader can be commanded from an app on the host device. As the 2173 uses the existing TSL® ASCII 2 Protocol, developers can take advantage of the comprehensive, free SDKs provided by TSL® to develop in Xamarin, Java, Objective C or .NET.

Dual RFID Frequencies

The combined LF and HF RFID reader provides the ability to read and write to a wide variety of transponders at 125/134.2 kHz (LF) and 13.56 MHz (HF) including ISO 15693, ICODE (I & II), the complete Mifare family of ISO14443 (A&B) and the NFC standard ISO18092 ECMA-340.

Comprehensive Compatibility

Supported Manufacturer specific transponders include HID, NXP, EM Microelectronic, ATMEL and TI (Texas Instruments).

27th May 2020

SPECIFICATIONS

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 3.7 volt Lithium Polymer 1130 mAh battery pack, 4.2 watt hrs.
Enclosure materials:	Polycarbonate.

Performance Characteristics

Communication protocols:	TSL® ASCII 2.0 parameterised command set.
Memory:	Supports up to 32 GB Micro SD/SDHC card.
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). 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 -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.
Construction:	RoHS compliant.

RFID Performance

Frequency Range:	125/134.2 kHz (LF) / 13.56 MHz (HF).
Read Distance:	LF and HF: Up to 100 mm / 4" (dependent on transponder type).
RF Transmission Speed:	HF Air: up to 848 kbit/s.
Standards supported:	ISO14443A, ISO14443B, ISO18092 ECMA-340 (NFC), ISO15693 plus many 125 kHz, 134.2 kHz standards.

Supported Tag-ICs :	**ISO14443A:** LEGIC Advant[1], MIFARE Classic 1k & 4k, MIFARE Classic 1k & 4k EV1[2], MIFARE Classic, MIFARE Classic EV1[2], MIFARE Mini, MIFARE DESFire EV1, MIFARE Plus S, X, MIFARE Pro X[3], MIFARE Smart MX[3], MIFARE Ultralight, MIFARE Ultralight C, MIFARE Ultralight EV1, NTAG2xx, PayPass[3], SLE44R35, SLE66Rxx (my-d move) **ISO14443B:** Calypso[3], Calypso Innovatron protocol[4], CEPAS[3], Moneo[3], Pico Pass[1], SRI4K, SRIX4K, SRI512, SRT512 **ISO18092 ECMA-340:** NFC Forum Tag 1-5[5], NFC Peer-to-Peer, Sony FeliCa[6], NFC Active and passive communication mode **ISO15693:** EM4x33[3], EM4x35[3], HID iCLASS, ICODE SLI, LEGIC Advant[1], M24LR16/64, SRF55Vxx (my-d vicinity)[3], Tag-it, PicoPass[1] **125 kHz, 134.2 kHz:** AWID, Cardax[7], CASI-RUSCO, Cotag, Deister, EM4100, 4102, 4200[8], EM4050, 4150, 4450, 4550, EM4305[9], FDX-B, HITAG 1[10], HITAG 2[10], HITAG S[10], Keri, Miro, Nedap[7], Pyramid, Q5, T5557, T5567, T5577, TIRIS/HDX, TITAN (EM4050), UNIQUE, ZODIAC[9] **And also:** G-Prox[7], HID DuoProx II (1336), HID ISO Prox II (1386), HID Micro Prox (1391), HID ProxKey III (1346), HID Prox, HID Prox II (1326), Indala, ioProx, Nexwatch, HID iCLASS SE/SR/SEOS(CSN and Facility Code/PAC)[11] [1]UID only [2]r/w enhanced security features on request [3]r/w in direct chip command mode [4]UID only, read/write on request [5]NFC Forum Tag 1 on request only [6]UID + r/w public area [7]Hash value only [8]Only emulation of 4100, 4102 [9]On request [10]Without crypto [11]UID + PAC (CSN & Facility Code), r/w on request [12]External interface required

Barcode Scanning

Barcode module:	Optional 2D imager.
Sensor Resolution:	752 x 480 pixels.
Field of View:	Horizontal: 40°, Vertical: 25°.
Focal Distance:	SR: 8 in. DL: 5.3 in. HD: 2.9 in.
Aiming LED (VLD):	655 ±10 nm Laser.
Illumination Element:	625 ±5 nm LEDs (2x).
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).

SPECIFICATIONS

Ranges[3]:	DL Focus	Near	Far
	5 mil Code 39	1.4 in./36 mm	7.3 in./185 mm
	100% UPC	1.6 in./41 mm	12 in./305 mm
	5 mil PDF417	2.8 in./71 mm	4.5 in./114 mm

Communication

Bluetooth®:	*Bluetooth*® Version 4.1.
Bluetooth® Profiles:	SPP Profile. HID Profile. Apple iAP2. *Bluetooth*® Low Energy.
Bluetooth® Power:	Class 2.
Bluetooth® Range[4]:	30m.
Bluetooth® Pairing:	Simple Secure Pairing, NFC OOB Pairing.

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. 2112 Docking Cradle (Coming Soon).

Regulatory

EMC:	EN 55032:2015 +AC:2016 EN 55024:2010 +A1:2015 EN 301 489-1 V2.1.1 47 CFR 15.107, 15.109
Radio:	EN 300 328 V2.1.1 EN 300 330 V2.1.1 EN 301 489-3 V2.1.1 EN 301 489-17 V3.1.1 47 CFR 15.209, 15.225, 15.247
Radio Exposure:	EN 62311:2008 EN 50364:2010 EN 62479:2010 47 CFR 2.1093
Safety:	IEC 62368-1:2014 EN 62368-1:2014 +AC:2015
Laser Safety:	IEC 60825-1:2014, EN 60825-1:2014 IEC 62471:2006, EN62471:2008 21 CFR 1040.10

Part Numbers

2173-BT-IMG	2173 Wearable *Bluetooth*® Barcode Scanner with 2D Imager, USB.
2173-BT-LF-HF-A1	2173 Wearable *Bluetooth*® LF/HF RFID Reader without Imager.
2173-BT-LF-HF-A1-PI	2173 Wearable *Bluetooth*® LF/HF RFID Reader, no Imager, PI Card (HID Prox and iCLASS) Reading.
2173-BT-LF-HF-IMG	2173 Wearable *Bluetooth*® LF/HF RFID Reader with 2D Imager.
2173-BT-LF-HF-IMG-PI	2173 Wearable *Bluetooth*® LF/HF RFID Reader, 2D Imager, PI Card (HID Prox and iCLASS) Reading.

Warranty

The TSL 2173 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.

[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] Artificial lighting can affect scanning performance
[4] Open field

ABOUT TSL®

ABOUT

TSL® | Global Leaders in Mobile RFID

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

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

27th May 2020