TECHNOLOGY SOLUTIONS UK LTD

1153 *BLUETOOTH*® WEARABLE UHF RFID READER

COMPACT *BLUETOOTH*® WIRELESS HIGH PERFORMANCE UHF RFID READER

Made for iPod iPhone iPad

Bluetooth®

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 the broadest range of mobile computer operating systems.

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 Motorola SE4500 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.

Data Collection Performance Like No Other

TSL's new 1153 *Bluetooth*® UHF RFID reader provides new levels of RFID performance. With its compact form factor, the 1153 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 Motorola SE4500 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 enabled1 host devices including Enterprise Handhelds, Consumer Phones, Touchscreen MP3 players, Tablets and PC's – the 1153 will bring high performance RFID and 2D scanning to all these devices running a wide range of Operating Systems. The 1153 *Bluetooth*® UHF 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*® UHF 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 unparalleled 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 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 MicroSD memory card (at least 25 million Transponder EPCs on a typical 2GB card) with date and time stamping. This allows logging of all transponder EPC readings and provides the ability to collect data even if USB or *Bluetooth*® communication channels are not available.

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

RFID engine:	AMS AS3993 based
Communication protocols:	ASCII2.0 parameterised command set
Memory:	Supports up to 32 GB Micro SD/SDHC card
Compatible Host devices (*Bluetooth*®):	Host device must have *Bluetooth*® wireless technology functionality supporting the Serial Port Profile
Compatible Host devices (USB):	Any USB host with FTDI VCP driver support (Windows, Linux, Mac, Android)

Environmental

Operating Temp.:	-4°F to 140°F / -20°C to 60°C
Charging Temp.:	41°F to 104°F / 5°C to 40°C
Storage Temp.:	-40°F to 158°F / -40°C to 70°C
Humidity:	5% to 95% 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 6.5 ft./up to 2 m.
Nominal write range[2]:	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
Output Power:	25dBm maximum

Barcode Scanning

Imager:	Motorola SE4500 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)

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

Bluetooth® wireless technology

Bluetooth®:	*Bluetooth*® Version 2.1 SPP and Apple iApp Coming soon: *Bluetooth*® HID
Bluetooth® Class:	Class 2
Bluetooth® Range[4]:	10m
Bluetooth® pairing:	PIN, 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 desktop charger:	TSL 1136 4-Slot Desktop Battery Charger

Regulatory

General:	Approved for use in the US, Canada, Europe and Australia.
Electrical Safety:	Certified to UL60950-1, CSA C22.2 No. 60950-1, IEC 60950-1, EN 60950-1
EMI/RFI:	USA: FCC Part 15 Canada: ICES 003 Class B EU: EN 301 489-3, EN 301 489-1, EN 301 489-17, EN 302-208, EN55022 Class B, EN55024 and other countries' specific standards.
Laser Safety:	IEC Class2/FDA Class II in accordance with IEC60825-1/EN60825-1, 21CFR1040.10

[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

PART NUMBERS

RFID Reader Options

1153-EU-BT-UHF-A1 (ETSI) 1153-US-BT-UHF-A1 (FCC)	1153 *Bluetooth*® Wearable UHF RFID reader – no barcode engine
1153-EU-BT-UHF-IMG (ETSI) 1153-US-BT-UHF-IMG (FCC)	1153 *Bluetooth*® Wearable UHF RFID reader with 2D Barcode Imager
1153-BT-BC-IMG	1153 *Bluetooth*® Wearable reader with 2D Barcode Imager

WARRANTY

Warrranty

The TSL 1153 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.

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ABOUT TSL

TSL designs and manufactures both standard and custom embedded, snap on and standalone peripherals for handheld computer terminals. Embedded technologies include:

- RFID - Low Frequency, High Frequency & UHF
- *Bluetooth*® wireless technology
- Contact Smartcard
- Fingerprint Biometrics
- 1D and 2D Barcode Scanning
- Magnetic Card Readers
- OCR-B and ePassport

Utilizing class leading Industrial design, TSL develops products from concept through to high volume manufacture for Blue Chip companies around the world. Using the above technologies TSL develops innovative products in a timely and cost effective manner for a broad range of handheld devices.

CONTACT

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