TSL's new 1128 Bluetooth® UHF 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 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.

**Data Collection Performance Like No Other**

The new 1128 Bluetooth® UHF RFID reader incorporates 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.

**As Easy As ABC….**

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.

**Platform Independent UHF RFID Reader**

Use existing Bluetooth® wireless technology enabled 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® 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.

**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.
- 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 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.

EPC data can be stored on an optional MicroSD memory card (at least 25 million Transponder EPCs on a typical 2GB card). 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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong> (LxWxH):</td>
<td>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</td>
</tr>
<tr>
<td><strong>Weight:</strong></td>
<td>380 g / 13.4 oz (including battery &amp; trigger handle)</td>
</tr>
<tr>
<td><strong>User input:</strong></td>
<td>Trigger button</td>
</tr>
<tr>
<td><strong>User feedback:</strong></td>
<td>Speaker, vibration motor, LED</td>
</tr>
<tr>
<td><strong>Power:</strong></td>
<td>Removable, rechargeable 4.2 volt Lithium Polymer 2200 mAh battery pack, 8.4 watt hrs</td>
</tr>
<tr>
<td><strong>Enclosure materials:</strong></td>
<td>Polycarbonate</td>
</tr>
</tbody>
</table>

### Performance Characteristics

- **RFID engine:** TSL custom module with embedded Impinj R2000
- **Communication protocols:** TSL ABC (Parameterised ASCII command set) Impinj binary
- **Memory:** Supports up to 32 GB Micro SD/SDHD CARD
- **Compatible Host devices (Bluetooth):** Android, iOS, Windows CE, Windows Phone 8, Windows Mobile 5/6.1/6.5 or Windows XP/Vista/7. Host device must have Bluetooth wireless technology functionality.
- **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:** up to 13 ft./up to 4m
- **Nominal write range:** up to 4 ft./up to 1.22 m
- **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
- **Output Power:** 10mW to 800mW

## 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:** 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)

### Bluetooth® wireless technology

- **Bluetooth®:** Bluetooth® Version 2.1 SPP profile, HID Profile (future), Apple iAP
- **Bluetooth® Class:** Class 2
- **Bluetooth® Range:** 10m
- **Bluetooth® pairing:** PIN, Simple Secure Pairing, NFC OOB Pairing (TBA)

### Peripherals and Accessories

- **External interface:** Micro/USB 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 battery charger
- **Other Accessories:** Adapter mounts for a variety of smartphones, handheld terminals and touchscreen MP3 players Slimline Grip, Trigger Handle

### Regulatory

- **General:** Approved for use in the US, Canada, Europe, China, Singapore, Taiwan, Korea 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
- **Laser Safety:** IEC Class2/FDA Class II in accordance with IEC60825-1/EN60825-1, 21 CFR1040.10
EXAMPLE CONFIGURATIONS

With Galaxy Nexus

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

With Motorola ET1 Enterprise Tablet

With Bluetooth® wireless technology enabled computer

With Motorola ES400

With Motorola MC2180
**PART NUMBERS**

<table>
<thead>
<tr>
<th>RFID Reader Options</th>
<th>Grip handle options</th>
<th>Device mount options*</th>
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<tbody>
<tr>
<td>1128-EU-BT-UHF-A1 (ETSI)</td>
<td>1128-SLG</td>
<td>1128-MNT-UNI</td>
</tr>
<tr>
<td>1128-EU-BT-UHF-IMG (ETSI) 1128-US-BT-UHF-IMG (FCC)</td>
<td>1128 Bluetooth® RFID Reader with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UHF antenna &amp; trigger handle, battery,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>battery cover, Micro USB cable, USB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>charger</td>
<td></td>
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<tr>
<td></td>
<td>1128 Bluetooth® UHF Reader with 2D</td>
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<tr>
<td></td>
<td>Imager, UHF antenna, trigger handle,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>battery, battery cover, Micro USB</td>
<td></td>
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<tr>
<td></td>
<td>cable, USB charger</td>
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</tbody>
</table>

**WARRANTY**

Warranty

The TSL 1128 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

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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**CONTACT**

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www.gatewayrfidsolutions.com

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.