



# ALR-H450

## ANDROID CONNECTED HANDHELD RFID READER

The Alien Technology® commercial class ALR-H450 “connected” **Android** handheld readers enables users to deploy manageable, robust, best-in-class EPC Gen 2 RFID solutions for supply chain, manufacturing, and asset management applications.

### FEATURES

- QWERTY keyboard, rugged yet lightweight for ease of use
- **Ergonomic** design provides superior user comfort and use
- “**Connected**” via the full set of wireless networking
- IP64 sealing for dust and water resistance
- **Prolonged usage** capabilities provided by a 3,200 mAh main lithium polymer main battery pack and 5,200 mAh gun handle battery
- Android 4.4 (Kit Kat)

Benefit	Enabled By:	What does this mean to me?
Ease of Use	<ul style="list-style-type: none"> <li>• <b>Full</b> QWERTY keyboard</li> <li>• <b>Dual</b> high-power lithium-polymer batteries</li> <li>• Open source Android software development</li> </ul>	<ul style="list-style-type: none"> <li>• Simplifies data input</li> <li>• All day usage without recharging</li> <li>• Easy to provide custom apps</li> </ul>
High Performance	<ul style="list-style-type: none"> <li>• <b>Unique high-performance, high gain antenna (unusual for a handheld)</b></li> <li>• Quad-core 1.3GHz CPU's</li> </ul>	<ul style="list-style-type: none"> <li>• Reads tags further than most handheld RFID solutions</li> <li>• Reads and processes those tags faster</li> <li>• Runs Android apps faster</li> </ul>
A fully “connected” handheld	<ul style="list-style-type: none"> <li>• WiFi 802.11 <b>b/g/n</b></li> <li>• 3G cellular built in</li> <li>• Bluetooth 4.0</li> </ul>	<ul style="list-style-type: none"> <li>• Wireless simplicity</li> <li>• Always connected</li> <li>• Allows connection to corporate networks</li> </ul>



### Robust Compact/Connected Android Based Handheld

This feature-rich reader is packaged in a compact ergonomic footprint, yet comes with a full QWERTY keyboard for on-the-go data-entry and while displaying results on the large 4” WVGA crisp touch panel display.

The solution provides an easy-to-integrate, easy-to-manage package in an open source Android environment.

A number of techniques including shock-resistance rubber seals are used to ensure durability resulting in an IP64 water/dust proof rating and a 1.0m/ 3ft drop qualification.

### High Performance Antenna

The ALR-H450 delivers exceptional performance with best-in-class receive sensitivity and enhanced interference rejection enabled partly by an unusually high performance 4dB antenna.



## Android Connected Handheld RFID Reader

High Performance, Easy to Use, Easy to Manage, Easy to Deploy

The ALR-H450 comes well featured including 2D bar code capability and WiFi connectivity to your corporate network. A memory expansion slot is standard for flexibility for additional local storage.

Standard features include:

- 1D and 2D bar code reader
- Bluetooth/WiFi
- GPS (for location aware applications)
- 3G cellular connectivity for use beyond corporate WiFi areas
- 1/2 Watt speaker
- Microphone
- Light sensors, proximity sensors and G-sensors
- Micro-SD expansion slot

All units are offered in regional frequency options including "US," "Europe," "China" and others.

Standard accessories include:

- Cradle with USB
- Snap on connector break out (to DC and micro USB)
- Gun handle (with additional battery)
- USB data cable
- Power adapter

Physical Characteristics	
Ingress Protection	IP64
ESD	Contact $\pm$ 4KV / $\pm$ Air 8KV
Humidity	0-95% at 40°C / 104°F
Operating Temp	-10°C to 50°C / 14°F to 122°F
Storage Temp	-40°C to 70°C / -40°F to 158°F
Weight	371 g / 13.1 oz (no batteries) 448 g / 15.8 oz (with main battery) 623 g / 22.0 oz (with gun handle and all batteries)
Dimensions without gun handle	7.28" (L) x 3.35" (W) x 4.13" (H) 185 mm (L) x 85 mm (W) x 105 mm (H)
Drop	1 meter / 3.28 feet



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Baseline Specification	ALR-H450
RFID Reader	EPC C1 GEN2 / ISO18000-6C
RFID Power	1W (+5dBm to +30dBm)
Antenna	1dBi / 4 dBic (Circular)
Scanner	2-D bar code (1280 x 960 pixels)
WLAN	Wireless WLAN 802.11 b/g/n
WWAN	WCDMA/HSDPA/HSPA+ (850/1900/2100MHz) GSM/GPRS/EDGE (850/900/1800/1900MHz) 1 PSAM + 1 SIM
WPAN	Bluetooth v2.1+EDR, v3.0+HS and v4.0
Location Services	GPS (embedded A-GPS)
Communications	Micro USB
Operating System	Android 4.4.2 (Kitkat)
Display	4" TFT-LCD touch screen with backlight, 16.7M colors, 480 x 800 (WVGA)
CPU	Cortex-A7 1.3GHz quad-core
Memory	1GB RAM / 4GB Flash
Memory Expansion	MicroSD (32GB Max)
Battery (lithium polymer)	Main 3.7V, 3200 mAh Gun 3.7V, 5200 mAh
Expansion Slot	1 Micro SD slot, 1 SIM slot, 1 PSAM slot

Ordering Information	ALR-H450 (US FCC)	ALR-H450-EMA (Europe)	ALR-H450-CHN (China)
Frequency	902 MHz – 928 MHz	865.7 MHz – 867.5 MHz	920.625 MHz – 924.375 MHz
Transmit Channels	50	4	16
Channel Spacing	500 KHz	600 KHz	250 KHz
RF Power	1 Watt	1 Watt	1 Watt
Compliance Certification	Emissions: FCC Part 15 Safety: cTUVus tested to: CAN/CSA-C22.2 No.60950-1-03, and UL 60950-1:2007 specifications IEC 60950-1 and EN60950-1	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489. Safety: EN 60950, EN 50364.	Emissions: CMII Safety: IEC 60950-1:2005 2nd edition & CCC

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HANDLING PRECAUTIONS Observe standard handling practices to minimize ESD.

DISCLAIMER Application recommendations are guidelines only - actual results may vary and should be confirmed. This is a general purpose product not designed or intended for any specific application.

This product is covered by one or more of the following U.S. patents: 7716208, 7716160, 7688206, 7671720, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262686, 7215249, 7214569, 7199527, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157. Other patents pending.

This product is licensed under patents of Round Rock Research, LLC, for use solely with UHF RFID Readers (such as Alien reader products) that are licensed under an agreement with Round Rock Research, LLC.



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**Draft - Subject to Change**