



# 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 4dBic 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

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

\* Due to country specific regulations the cellular modem (WWAN) is not present in units for Singapore or Brazil



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

Model Number	Countries	Frequency	Transmit Channels	Channel Spacing	RF Power	Compliance Certification
ALR-H450	USA, Canada, Colombia, Mexico	902 - 928 MHz	50	500 KHz	1 Watt	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, IFETEL
ALR-H450-ARG **	Argentina					
ALR-H450-BRA * and **	Brazil	902 - 907.5MHz & 915-928 MHz	35	500KHz	1.3 watts EIRP	Emissions: Agência Nacional de Telecomunicações - ANATEL Safety: UL Brazil
ALR-450-CHN	China	920.5 - 924.5 MHz	16	250 KHz	1 Watt	Emissions: CMII Safety: IEC 60950-1:2005 2nd edition & CCC
ALR-450-CHN-M *	Singapore	920.5 - 924.5 MHz	16	250 KHz	1 Watt	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489 Safety: EN 60950, EN 50360
ALR-H450-EMA	Europe, South Africa	865.6 - 867.6 MHz	4	600 KHz	1 Watt	Emissions: ETSI EN 302-208-2 (4 channel plan), EN 301-489, ICASA Safety: EN 60950, EN 50360, NRCS
ALR-H450-RSA	South Africa	915.4 - 919 MHz	17	200KHz	4W EIRP	Emissions: ICASA Safety: NRCS
ALR-H450-URY	Uruguay, Peru	916 - 928 MHz	23	500 KHz	4W EIRP	Unidad Reguladora de Servicios de Comunicaciones (URSEC), Ministerio de Transportes y Comunicaciones
ALR-H450-WR1	Hong Kong	920 - 925 MHz	8	500 KHz	4W EIRP	OFTA

\* Due to country specific regulations the cellular modem (WWAN) is not present in units for Singapore (the "-M" signifies no Cellular Modem) and Brazil

\*\* Ships into the country without a power supply (needs to be sourced in country)



## Android Connected Handheld RFID Reader

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The following are all included in the ALR-H450 package.

Replacements or additions may also be purchased separately using the order numbers indicated below

Accessories Included	
Ordering Information	Description
ALX-520	ALR-H450 Pistol Grip
ALX-521	ALR-H450 Pistol Grip Battery
ALX-522	ALR-H450 Flat Main Body Battery
ALX-523	ALR-H450 Break-out Connector
ALX-524	ALR-H450 Dock
ALX-525	ALR-H450 USB Cable
ALX-526-1	ALR-H450 Power Adapter US (In US kit ALR-H450 only)
ALX-526-2	ALR-H450 Power Adapter Europe (In Europe kit ALR-H450-EMA only)
ALX-526-3	ALR-H450 Power Adapter China (In China kit ALR-H450-CHN only)



ALX-520



ALX-521



ALX-522



ALX-523



ALX-524



ALX-525



ALX-526

The ALX-526 does not ship to Argentina or Brazil

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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, 7342460, 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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