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# **Reader Firmware**

## **Release Notes**

**July, 2014**



**ALIEN®**

**ALR-9900+**  
**ALR-9900**  
**ALR-9650**  
**ALR-9680**

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# **Reader Firmware**

## **Release Notes**

**July, 2014**

This release version is 14.07.01.

The following briefly describes the changes to the firmware for Alien ALR-9900/9900+ and ALR-9650/9680 RFID Readers, since the last firmware release, v14.11.05.

Refer to the Reader Interface Guide, Rev U or later, for complete command details.

**Only ALR-9900, ALR-9900+, ALR-9650 and ALR-9680 readers are supported by this firmware.**



## **New Features**

### **Added ETSI support for the ALR-9680**

The new ALR-9680-EMA reader is supported by this firmware release.

### **Added New NotifyTrigger = AddRemove Option**

The new “AddRemove” option for NotifyTrigger causes the reader to send notifications anytime a tag is added or removed from the taglist, and also tells you exactly which tags were added and/or removed. There is a similar existing trigger, “Change” that also sends notifications when tags are added or removed, but “Change” causes the current taglist to be returned in either case – it is up to you to determine what has changed since the last notification.

The new “AddRemove” trigger causes a complete notification message to be sent in either case: One showing the tags that were added (with a NotifyReason of TAGS\_ADDED) and another showing tags that were removed (with a NotifyReason of TAGS\_REMOVED).

### **Added New IOPersistTime Command**

Just as the PersistTime command governs how long an old tag read will persist on the internal TagList, the new IOPersistTime governs how long an old GPIO event will persist on the internal IOList. The default value is 0, so by default, no IO events are stored internally on the reader.

This was done to eliminate the unnecessary storage of unneeded GPIO events. If you wish to make use of the IOList, you must now set an IOPersistTime > 0, where the value is the time (in seconds) that you want IO events to persist in internal storage. IO events that stay on the list for longer than the IOPersistTime will now be purged periodically.

### **RSSIFilter & SpeedFilter on a Per-Antenna Basis**

The RSSIFilter and SpeedFilter commands now take an optional 3<sup>rd</sup> parameter, which is an antenna bitmap indicating which antennas to apply that filter to. You can use this to filter out moving tags on one antenna and stationary tags on another antenna, or to independently set RSSI filters at different read zones.

The low-order bits of the antenna bitmap correspond to each of the numbered antenna ports on the reader. For instance, to have an RSSI range be active only on the first two antennas, you would use an antenna bitmap of “3” (since 3 = 00000011<sub>binary</sub>): RSSIFilter = 5000 0 3 would then filter out only those tags on the 1<sup>st</sup> two antennas that are strong (their RSSI is larger than 5000 or less than 0). When you don’t specify an antenna bitmap, the reader assumes you mean “all

antennas” and presumes an antenna bitmap value of 15 (for a 4-port reader) or 3 (for a 2-port reader).

```
RSSIFilter = R1 R2 [A1] [ | R3 R4 [A2]]...  
SpeedFilter = S1 S2 [A1] [ | S3 S4 [A2]]...
```

### **Improved General Inventory Performance on ALR-9650/9680 Readers**

Implemented general improvements to the inventory algorithm on ALR-9650 and ALR-9680 readers, particularly with large populations of tags.

## **Bug Fixes**

### **RFChannel is now Initialized to its Saved Value on Startup (ETSI readers)**

A bug existed in –EMA readers (ETSI protocol) when they were operating at fixed frequency, which caused the reader to revert to hopping mode after a restart. Now, when the RFChannel is set to something other than -1 (hopping) and the reader settings are saved, the reader will remember the chosen channel after restarting.

### **TagList No Longer Cleared after Sending Add or Remove Notifications**

When a notification message is triggered by the Add or Remove notify triggers, only the list of added/removed tags is now cleared. Previous versions cleared the entire Taglist each time, which caused the reader to always send a notification with a full Taglist instead of just reporting just the added/removed tags since the last notification.

### **Improved Stability of LLRP for Certain ROSpecs**

Certain ROSpecs could potentially cause the RFID subsystem to fail while running certain ROSpecs. This has been corrected.