APPLIED WIRELESS ID

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Technical Reference

LR-2000 Reader Application – Preventing Cross-Lane Tag Reading by a Neighboring Reader

Change History

Version	Date	Author	Comments
1.0	13 July 2009	L. Hickcox	First release.

In some installations it is possible for a tag on a vehicle that is traveling in one lane to be read by a reader in a different lane. This may happen where there are parallel lanes with readers at the entrance to a parking facility, or where the tag in an exiting vehicle is detected by the reader at a neighboring entrance lane. To prevent unintentional reading by a neighboring reader, we offer the following suggestions. These options apply to the LR-911 long-range reader as well. See the diagram for the shape of the effective RF field.

Option 1 -- Spacing

Move the reader to a location farther from the tags on vehicles in a neighboring lane that cause false reads. Before re-mounting the reader, experiment to assure absence of cross-lane reading. A camera tripod is a convenient way to support the reader while testing at the site.

Option 2 -- Aiming

Aim the reader away from the tags on vehicles in a neighboring lane that cause false reads.

Option 3 -- Shielding

Install metal shielding to prevent false reads. Experiment with a large sheet of aluminum foil. Sheet metal formed as a shield may be effective. Or mount the reader in a shallow metal housing whose sides are 4 inches or more from the edges of the readers; remove the metal door. Use The Housing Company's Model PCH196 Lexan housing, lined inside with aluminum foil.

Option 4 -- Eliminating Reflection

Metal (even rebar inside concrete) in the effective RF field in front of the reader may reflect RF to the tags on vehicles in a neighboring lane. To prevent reflection, either aim the reader away from the metal, or change the reader's mounting location, or relocate the tags in the vehicles.

Option 5 -- Reducing RF Power

Connect a PC to the reader using the RS-232 adapter cable in the LR-2000KIT or LR-911KIT Installation Kit. From www.awid.com/support, click on the link for "FTP website, log into the site, click on "Access Control" > "Downloads" > LR. Get the LR program; select "Save" or "Run". In the program, lower the RF Power Level by sliding the scale adjuster, or by entering the desired field reduction between 0 and 255. Reduce the reader's RF power level enough to eliminate false reads, but not so much as to reduce performance of the reader measurably for tags in its own lane.

Option 6 -- Substituting a Different Tag Type

Various vehicle tags have different RF field shapes, different field strength, and different locations in the vehicles. Cross-lane reading may be solved simply by using a different tag type in the vehicles, or by moving the tags to a location in the vehicles farther from the reader in the neighboring lane. Experiment using the tags in the LR-2000KIT Installation Kit.