APPLIED WIRELESS ID

Applied Wireless Identifications Group, Inc.

18300 Sutter Blvd. – Morgan Hill, CA95037 • Voice 1-408-825-1100 • Fax 1-408-782-7402 www.awid.com

Technical Reference

TWO PROXIMITY READERS AT ONE DOOR

If two proximity readers are installed back-to-back on opposite sides of the wall at a doorway, two kinds of problem may arise. This memo describes the potential problems, a test, and solutions.

Problems:

1. If the effective radiation patterns of the two readers intersect with each other, one or both of the readers may be forced into an abnormally high duty cycle, which may reduce the read range for the reader(s) when a proximity card or tag is held nearby. This may even prevent a proximity reader from reading a card at all.
2. If a card or tag is held up to one of the readers for gaining access to the door, the reader on the other side of the wall also may read that card. The system's controller will then receive two reads for the same code, almost simultaneously from two readers, for ingress and egress of that card at that door. At best, this will confuse the stored activity record. At worst, the system may deny access because of Antipassback restrictions.

Quick Test: Remove power from one of the two readers. If the other reader returns to normal operation, either Problem 1 or Problem 2 is the probable culprit.

Solutions:

1. Move the readers away from each other. Mount one high and the other low – or mount one farther from the edge of the door than the other – or mount one at the latch edge of the door, and mount the other at the hinge edge of the door. Either way, the readers will no longer be back-to-back. Or …
2. Replace the inside reader with a request-to-exit button or a switched push-bar on the door. If these solutions aren't practical …
3. Increase the thickness of the wall by adding housings for the readers on the wall. Or …
4. Insert metal between the back-to-back readers, for example, aluminum foil spread out in the space between the drywall, or a metal sheet (larger than the reader) between one reader and the wall behind it. Or …
5. Reduce the voltage applied to the readers from the common 12 volts DC to 5 volts, to reduce the read range of the readers. Or …
6. Replace the readers with smaller AWID proximity readers that have shorter read range. For example, use SP-6820 or MM-6800 readers instead of MR-1824, or use SR-2400 instead of any other model.
7. For readers combined with a keypad, use AWID's NDK-2300 instead of KP-6840. The metal housing of the NDK-2300 limits the radiation from the rear of the product.

Notes: (a) Two MR-1824 readers need to be at least 8 feet apart from each other if they are powered with 12 volts DC, and if they have no metal separation between them.

(b) Introducing metal near proximity readers, or reducing the applied voltage, decreases the reader's read range. In the back-to-back reader case, this may be what you want to do. A metal shield behind a reader will shorten its read range in front of the reader.