

Optimum Read Range Guide

TIPS FOR EFFECTIVE COMMUNICATION BETWEEN READER AND BADGE

Placement of the reader must allow for the primary reading surface to be completely exposed to the credential.

Reader Technology

RF IDEas readers generate magnetic fields to communicate with low and high frequency passive credentials. The credential uses this magnetic energy to power itself and to communicate data to the reader by changing the magnetic field.

Passive technology implies there is no battery or power source required in the card. The reader constantly transmits a low level fixed RF signal that transmits energy to the card. When the card is held at a certain distance from the reader, the RF signal is absorbed by a small coil inside the card and powers the card's chip, which contains a unique identification code. Once powered, the card transmits the code to the reader.

Primary Reading Surfaces

The primary reading surface is where the antenna is located. On housed readers, the primary reading surface is the surface with the "RF IDEas" engraving. On un-housed readers, the primary reading surface is where the antenna is located.

The primary reading surface must be completely exposed to the credential. The primary reading surface should also be as close as possible to the desired reading location. Any distance between the primary reading surface and the desired reading location will reduce the read range.

Housed readers



Un-housed readers



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Metal Effects

Metal of any type (steel, aluminum, copper, etc.) should be avoided when installing an RF IDEas reader.

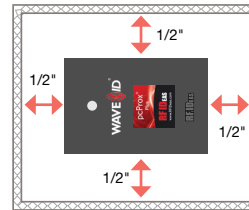
Metal within the field can affect performance through:

1. Absorbing the magnetic field
2. Changing how the reader is "tuned"

Both of these effects can reduce the ability of the reader to effectively communicate with the credential. The performance results are dependent on how close the metal is to the reader, as well as how much metal there is.

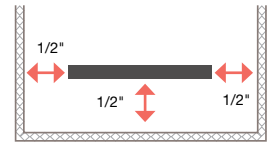
The reader cannot be placed in a metal enclosure. In order to ensure that there is not any impact to the reader's performance, all metal should be at least $\frac{1}{2}$ " (1.27 cm) away from the reader in all directions.

Desktop Top View



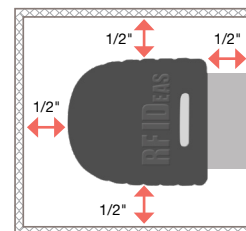
Metal Wall

Desktop Side View



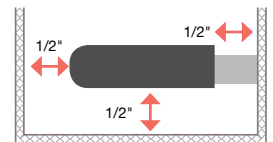
Metal Wall

Nano Horizontal Top View



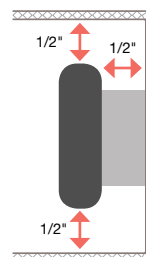
Metal Wall

Nano Horizontal Side View



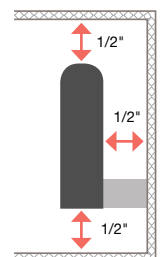
Metal Wall

Nano Vertical Top View



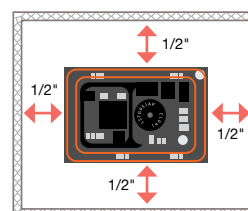
Metal Wall

Nano Vertical Side View



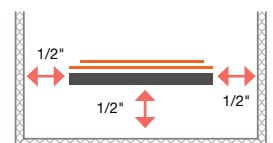
Metal Wall

OEM Top View



Metal Wall

OEM Side View



Metal Wall

$\frac{1}{2}$ " = 1.27 cm

RF IDEAS

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