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Technical Reference

UHF Long-Range Readers – Basic Tests

Proof of normal operation of a UHF long-range reader can be important – to bench-test a new reader, start an installation, trouble-shoot an existing installation, or test tags and cards. These tests are done quickly with a reader by itself (no access control system needed) and a hand-held tag (no car needed).

Test Tools

- AWID's kit LR-TEK or LR-2000KIT, with the LR-Sounder test unit (3 spring clips), and tags and cards
- Back-up battery – 12 volts, 7.5 ampere-hours, well charged
- DC voltmeter
- ¼"-20 screw (for suspending the reader during tests)
- For a "HiLo" reader set: A sheet of aluminum foil, larger than the reader; two ¼"-20 screws

Starting Steps for All UHF Reader Models

1st Have the reader completely disconnected from everything else. If the reader is new, clip off and discard the cable's 10-pin in-line connector.

2nd Connect the readers yellow wire to the black wire, arming the reader for RF generation.

3rd Suspend the reader 6 feet to 8 feet high, with 30 feet of open space in front of it, and 8 feet at the sides. (For the LR-911 reader, only half as much clear space is necessary.)

4th Connect the back-up battery to the reader's black (negative) and red (positive) wires.

5th Check DC voltage on the red and black wires. If it is below 12.2 volts, find the cause of low voltage.

6th When testing with the tag or card, measure the maximum distance at which steady reading occurs.

LR-2000 and LR-2200 Readers

1. Connect the LR-Sounder test unit to the reader's orange, blue and violet wires. Match wires color-for-color.
2. Present a single tag or card to the reader. (Have all other tags or cards 30 feet behind the reader.)
3. Observe a beep and a brief LED color change on the LR-Sounder for *every* tag read.

LR-2000HiLo and LR-2200-HiLo Readers

1. Use the three steps for LR-2000 and LR-2200 readers.
2. To test the "HiLo" set's **Master Reader** (where the battery is connected): Disconnect the remote antenna's mini-coaxial cable. Hold the tag or card in front of the master reader. Observe beeps and LED color change.
3. To test the **Remote Antenna**: Connect the mini-coax cable between the master reader and the remote antenna. Cover the front of the master reader with aluminum foil. Hold the tag or card in front of the remote antenna. Observe beeps and LED color changes.

(continued)

LR-3000 Reader

Locate the two LEDs on the edge of the reader, near the cable. Observe brief lighting of the green LED indicating every read of the tag or card when it is held in front of the reader.

Using the LR-3000 reader's built-in green LED to observe tag reads is a good basic test.. Connecting the LR-Sounder test unit makes these basic tests more convenient – a *one-man* job.

1. Connect the LR-Sounder test unit to the reader's orange, blue and violet wires. Match wires color-for-color.
2. Present a single tag or card to the reader. (Have all other tags or cards 30 feet behind the reader.)
3. Observe a beep and a brief LED color change on the LR-Sounder for *every* tag read.

LR-911 Reader

1. Connect the LR-Sounder test unit to the reader's orange, blue and violet wires. Match wires color-for-color.
2. Present a single tag or card to the reader. (Have all other tags or cards 15 feet behind the reader.)
3. Observe a beep and a brief LED color change on the LR-Sounder for *every* tag read.

Note: The LR-911 reader reads only WS-1216 and MT-1014 tags. Their read ranges are shorter than for AWID's other UHF long-range products.

UHF Credentials

The reader itself is the best way to test tags and cards. Use a reader that is compatible with the tags and cards. Connect the reader as described above. Present a single tag or card to the reader. The LR-Sounder test unit or the LR-3000 reader's green LED indicates each read.

Notes

(a) These basic tests indicate only that the tag or card is being read – a yes-or-no test. There is no display of the numeric code that is programmed into the tag or card.

(b) The LR-Sounder test unit connects to the reader's RS-232 Transmit Data line. It is possible for it to indicate a good read when the reader's Wiegand data is damaged. In this unusual event, contact AWID's Technical Support for separate testing of the Wiegand output.

(c) If a reader that tests good by these basic tests does not read in an access control system, contact AWID's Technical Support for review of the system's DC power supply, cable specifications, wire connections, and alignment of the reader and tags on vehicles.

(d) The LR-Sounder test unit works as well on *every* AWID reader except the low-frequency (proximity) SR-2400. On low-frequency readers and the X-series UHF readers, connect the LR-Sounder's orange wire to the reader's violet wire (RS-232 Transmit Data). Connect black and red wires as usual (color-for-color).