

UHF Long-Range Readers

Support 1 – Getting Started

These notes are for AWID's LR-2000, LR-2200 and LR-3000 reader models, and their "HiLo" variations.

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A. APPLICATION

To start the pre-sale process, know what the end user's purpose is for the planned installation. Mark the choices.

- Identifying: vehicles / people / containers / other.
- Tagging: cars and trucks / motorcycles and golf carts / wheelchairs and gurneys / walking people / other.
- Purpose: operate gate / unlock door / detect movement / track tagged item / identification / mustering.
- Quantities: number of lanes = ___ / read tags only to enter or in both directions.

B. INSTALLATION

Before selecting products, know how they will be installed. Mark the choices.

- Road characteristics: width = ___ feet / level or changing grade / straight or turns.
- Surroundings: buildings / structures / pillars / poles, posts, pedestals / parked vehicles / trees, bushes.

C. READER MODEL

- If **vehicles** are all about the same size, and tags are in the same location, on a straight, level, single-lane road –
→ Use the basic reader model (single antenna unit) – LR-3000 or LR-2000 or LR-2200, as appropriate.
- If **vehicles** are a mixture of small and large – for example, passenger cars and trucks –
→ Use the "HiLo" reader model (dual antenna units).
- If **tags** will be attached at different locations on some vehicles –
→ Use the "HiLo" reader model (dual antenna units).
- If there will be a combination of both vehicle **tags** and hand-held **cards** –
→ Use the "HiLo" reader model (dual antenna units).
- If the **road** near the readers is wider than a single lane –
→ Use the "HiLo" reader model (dual antenna units).
- If the **road** near the reader curves or makes a turn near the reader – or changes grade (up or down a ramp) –
→ Use the "HiLo" reader model (dual antenna units).
- If the reader will be installed in a **country** outside North America –
→ See Section D for selection of reader model by frequency band.
- If the reader will be **outdoors and exposed** directly to rain or snow, or directly to bright sunlight in hot weather –
→ Use reader model LR-3000 (no housing needed), or use LR-2000 or LR-2200 installed in a protective housing..

D. READER FREQUENCY BAND

- In the **United States, Canada and Mexico**, the frequency band for ISM (industrial, scientific & medical) applications is **902-928 MHz** –
➔ Use reader Model LR-2000 or LR-3000 for long-range tags and cards, and uAccess readers for card reading.
- In the countries in the **European Union**, and in all **other countries** that have adopted the ETSI EN 302 208 ISM band (**865-868 MHz**) –
➔ Use reader Model LR-2200 for long-range tags and cards.
- The same AWID UHF tags and cards function normally in both frequency bands.

E. CREDENTIAL TYPE

The important person in making decisions about the tags or cards for a particular job is your customer – *the end users*. Discuss these options with the users. Let the users tell you what the application requires, and what tag meets those needs.

Please see AWID's product sheets for pictures and descriptions of these credentials:

WS-UHF adhered inside windshield	RV-UHF adhered behind rearview mirror	SV-UHF adhered under sideview mirror
VT-UHF clipped on sun visor	PT-UHF on hooking tape inside windshield	HT-UHF hooked on rearview mirror
MT-UHF fastened on metal surface	ST-UHF on truck, trailer or big container	KT-UHF on keychain or lanyard
CS-UHF presented in fingers	GR-UHF presented in fingers.	

- For **secure, permanent** applications (tags are damaged if they are pulled away from their adhesive) –
➔ Use **WS-UHF** or **RV-UHF** or **SV-UHF** tags, or **MT-UHF** tags if they are adhered or fastened to the surface.
- For **convenient, movable** applications (tags can be carried from one vehicle to another, or shared by users) –
➔ Use **HT-UHF** or **VT-UHF** or **PT-UHF** tags, or **CS-UHF** or **GR-UHF** cards, or **KT-UHF** tags.
- For **temporary** use in a vehicle, or to be carried by a user –
➔ Use **HT-UHF** or **VT-UHF** tags, or **MT-UHF** tags if on a metal surface, or **CS-UHF** or **GR-UHF** cards.
- For attachment on a **metal** surface (industrial or commercial environment) –
➔ Use **MT-UHF** or **ST-UHF**, with fasteners through mounting holes, or using **MT-UHF**'s adhesive.
- For **people walking** through doors in a building equipped with AWID's uAccess UHF wall-mount readers –
➔ Use **CS-UHF** or **GR-UHF** hand-held cards, or **KT-UHF** keytags.

F. ACCESSORIES & MOUNTING HARDWARE

- **Mounting Bracket:** For most applications, the reader must be mounted on a bracket with a pan-and-tilt-adjustable head, to aim the reader's RF fields. (Exception: mounting the reader flat against a side-wall, to read tags on the side of trucks and trailers.) The bracket's arm must be long enough for turning and tilting the reader, inside its protective housing (if used). AWID's **LR-MB** mounting bracket is an 11-inch long arm with adjustable head, and standard slots for readers, cameras, etc.
- **Protective Housing:** (Not for LR-3000.) AWID's UHF long-range readers are ready for indoor and outdoor installations. If the reader is mounted outdoors **and** it is exposed directly to rain or snow, or to bright sunlight in hot weather, a protective housing contributes to the reader's excellent performance and long life. The housing must not be metal. Polycarbonate material assures negligible reduction of RF field strength. (Example: The Housing Company, Model PCH196.)
- **Installation Kit:** AWID requires every company that installs these products to purchase the **LR-TEK-0-0** Kit. It is a first-time, one-time investment with proven payback. The Kit is valuable for pre-sale demonstration, site evaluation, location decisions, testing reader and tag performance, testing the system, and isolating the components for trouble-shooting.
- **Poles, Posts, Pedestals:** This mounting hardware may be necessary to support the reader. These devices are available from Parking and Traffic suppliers. (Example: TAPCO.)

G. DC POWER & CABLES

DC power and cables for AWID’s UHF long-range readers are standard products available from most security-industry distributors. To assure good performance, it is important to observe the specifications below. High quality is best!

- **DC Power:** Each AWID UHF long-range reader must have a separate DC power supply that is dedicated to the one reader. Specifications – 12 volts DC nominal; 2 amperes or more current capacity; linear rated (if available); regulated DC output. (Examples: Altronix SMP3 and LPS3; SMP5 and LPS5 for cable runs 300 to 500 feet long.)
- **Cables:** Cables for the reader’s power and data transmission may be either combined or separate. If the DC power supply is near the controller panel, combined cable may be most cost-effective. *Cat-5 is not suitable.*
For **combined** cable – 18 gauge, 6 conductors, overall 100% shield, stranded, color-coded, *not* twisted pairs.
For **separate** cables – Power: 18 gauge, 2 conductors, overall 100% shielded, stranded, color-coded.
– Data: 22 gauge, 4 conductors, overall 100% shielded, stranded, color-coded, *not* twisted pairs.

H. CHECK LIST

<u>Product</u>	<u>See Sections</u>	<u>Quantity</u>	<u>Source</u>
Reader	C, D	1 per lane.	AWID.
Credentials (tags and cards)	E	1 per vehicle.	AWID.
Mounting bracket	F	1 per basic reader, 2 per “HiLo” reader set.	AWID or distributor.
Protective housing (if required)	F	1 per basic reader, 2 per “HiLo” reader set.	Supplier or online.
LR-KIT-0-0 Installation Kit	F	1 for lifetime.	AWID.
Poles, posts, pedestals	F	1 per reader.	Parking or Traffic supplier.
DC power supplier	G	1 per reader.	Security distributor.
Cable(s) for power and data	G	Up to 500 feet (Wiegand).	Security distributor.

I. AWID’S SUPPORT PEOPLE

Sales	Please contact your AWID supplier or the Regional Sales Director.
Customer Support	Please contact AWID’s corporate offices – 408-825-1100, option 3.
Technical Support	Please contact AWID’s corporate offices – 408-825-1100, option 1.