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LR-2200™
Extra Long-Range Reader

The LR-2200™ Long-Range Reader is designed to enhance safety / security, automate parking administration and provide convienient, hands-free / remote-free, vehicle access.

The LR-2200 ofers an impressive combination of single unit construction, small size, and attractive appearance. Unlike many AVI products, the LR-2200 operates in the FCC license free ISM (Industrial, Scientifcand Medical) band, ofers a myriad of credential options from traditional clamshell badges, hangtags to windshield tags, yet provides signifcant savings in deployment and maintenance expense.

Performance enhancements in automobiles impose unwavering circumstances which call for the fexibility AWID has integrated in the LR-2200 reader and tags. Tag reading distance is commonly up to 4 meters or more, depending on reader mounting, credential type, and environment. Its electronics and antenna are integrated in a single compact enclosure which is suited for outdoor applications.

The LR-2200 ofers a price-performance advantage over traditional long-range proximity systems, using battery-free, maintainance-free credentials and operates in the 865-868 MHz UHF band, alleviating the need for site licensing. In addition to Automatic Vehicle Identifcation (AVI), the LR-2200™ is ideal for Hospitals, Medical Centers, Airports, Hotels, Stadiums, Amusement Parks, extending unparrelled performance while providing Long Range RFID with the best ROI.
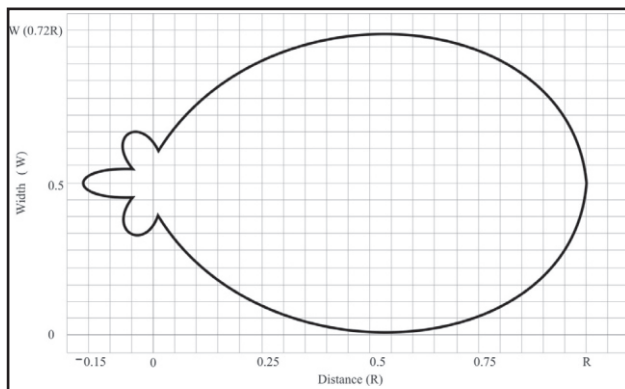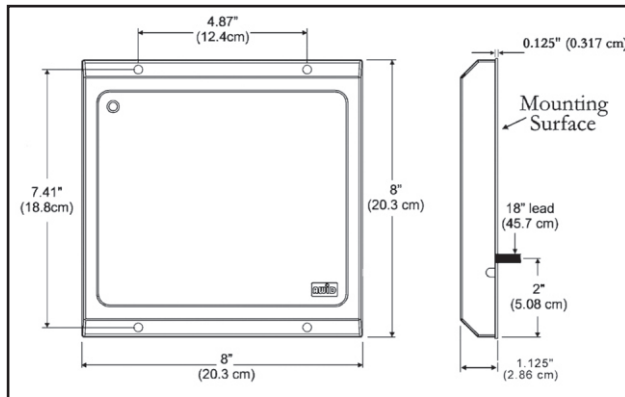
FEATURES

- Extended reading distance . . .
    Up to 6 meters between reader and tag

- Small, attractive reader . . .
    Single unit with antenna,

- Easy reader installation . . .
    No reader programming, simple wiring

- Wide selection of credentials . . .
    5 vehicle tags and 2 hand-held cards

- Unlimited tag or card life . . .
    Passive battery-free credentials

- Easy interfacing to control systems . . .
    Both Wiegand and RS-232 data output

- No interference /cross-reading between lanes
    Programmable RF feld strength

- Dual antenna units for difcult sites . . .
    Optional LR-2200HiLoMA reader set

- RF transmission only as needed . . .
    Use vehicle sensor to arm the RF circuit

- Complies with certifcations . . .
    ETSI, CE

- Ideal upgrade for old systems . . .
    Hands-free vehicle identifcation

- Eliminates stop-and-wait entry . . .
    Cars continue moving past reader

- For outdoor applications . . .
    Housing available for rain and sun*

- Easy to buy and own . . .
    Licensing not required

* NOTE: WHEN INSTALLED OUTDOORS AND EXPOSED TO RAIN OR SNOW, OR TO DIRECT SUN IN A HOT ENVIRONMENT, THE LR-2200 MUST BE MOUNTED INSIDE A HOUSING WITH MINIMUM IP64 RATING.

LR-2200™

UHF Extra Long-Range Reader

ACCESSORIES AND SUPPLIES

- LR-2200KIT Installation Kit-A **requirement** for all installers. Efficiently demonstrate the LR-2200, narrow tag choices, and outline the installation. A one-time purchase.

- Mounting bracket – Pan-and-tilt adjustable, for aiming the LR-2200 at the tags' reading location. Premnet ofers LR-MB-0-0.

- Power supply – Each LR-2200 requires a separate, independent, dedicated power supply. Ask Premnet for specifcations.

- Protective housing – To avoid rain, snow, hot sunlight and vandalism, Premnet recommends a Lexan housing.

- System components– Consult with supplier for access control package, gates, vehicle sensors.

- Installation & Operation Manual – Download Manual from www.premnet-fzc.com info@premnet-fzc.com

CREDENTIAL OPTIONS

- Vehicle-mounted tags – Tags for permanent or movable applications, inside or outside vehicles.

- Hand-held cards – Clamshell-type and graphics-type cards.

Ask Premnet about tag/card selection and mounting methods.

OPERATING CHARACTERISTICS

Reading Distance:
Up to 15 feet (4.6 meters)

Frequency Band:
865 to 868 MHz ETSI
Frequency-hopping technology

Antenna Output:
Circular-polarized RF feld

Communications Protocol:
Wiegand and RS-232, simultaneous

Code Formats:
Determined by AWID's tags & cards
from 26 to 50 bits

Cables:
Power – 2 conductors, 18 gauge
Data – 3 conductors, 22 gauge
Stranded, color-coded, shielded
Up to 500 feet long

Field-Programmable Features:
Read repetition rate; RF power level

PHYSICAL CHARACTERISTICS

Dimensions:
20.3 x 20.3 x 2.86 cm

Weight:
1.04 kg

Material (Color):
ABS enclosure (beige);
Aluminum backplate

Cable (Integrated with Reader):
10 conductors, 32 inches long
Overall shielded, plastic sheathed

Mounting (Supplied by Installer):
Pan-and-tilt adjustment for aiming

ENVIRONMENT

Operating Temperature:
At 50% duty cycle –
-35 to +65 C (-31 to +150 F)
At 100% duty cycle –
-35 to +45 C (-31 to +115 F)

Operating Humidity:
0% to 95%, non-condensing

Avoiding Interference:
Optimize reader performance by avoiding sources of RF – fuorescent and other arc lighting, UHF transmitters, other readers

CERTIFICATION/COMPLIANCE

ETSI, CE, RoHS

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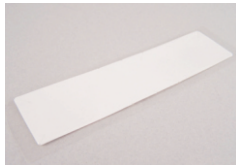www.premnet-fzc.com info@premnet-fzc.com

CREDENTIALS FOR UHF READERS

VEHICLE MOUNT OPTIONS

WS-UHF-0-0 Windshield Tag

- Self-adhesive tag applied inside windshield
- Hands-free vehicle identifcation
- Secure tag permanently attached directly on glass
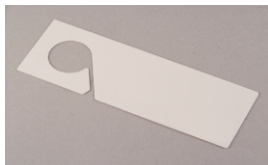- Out of driver's vision – smaller than a business card

RV-UHF-0-0 Rearview Mirror Tag

- Self-adhesive tag applied to rearview mirror frame
- Hands-free vehicle identifcation
- Secure tag permanently attached on inside mirror
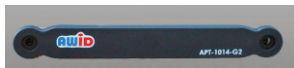- Almost invisible – tag's black side faces windshield

VT-UHF-0-0 Sunvisor Tag

- Clip-on tag for sunvisor – reads through windshield
- Quick access – driver lowers sunvisor to read tag
- Hangs from plastic clip – out of sight between reads
- Easily moved from one vehicle to another by user

HT-UHF-0-0 Hangtag

- Hook-on tag – hangs on post of inside mirror
- Hands-free vehicle identifcation
- Visible through windshield for printed identifcation
- Can be moved to other vehicles or hidden from view

MT-UHF-0-0 "Metal-Mount" Tag

- Variety of uses – inside or outside, fxed or movable
- Attached by self-adhesive, or fasteners, or Velcro
- Best tag for trucks & buses – tag facing side of lane
- Suitable for requirements of diverse applications

HANDHELD OPTIONS

CS-UHF-0-0 Clamshell-Type Card

- Rugged hand-held card for LR-2000 & UA-612 readers
- Squeeze between thumb & fnger – aim outside window
- For vehicle gate access and/or personal door access
- Multi-purpose – vehicle ID, door access, company logo

GR-UHF-0-0 Graphics-Quality Card

- Printable hand-held card for LR-2000 & UA-612 readers
- Squeeze between thumb & fnger – aim outside window
- For vehicle gate access and/or personal door access
- Multi-purpose – vehicle ID, door access, photo ID badge

Slots and Holes
- Vehicle-mounted tags" – up to 15 feet (4.6 m).
- Hand-held cards" – up to 15 feet (4.6 m).

Technology in Tags and Cards
UHF communications between LR-2200 reader and credentials.
- Excitation frequency: - 902 MHz to 928 MHz, frequency-hopping in 50 channels with pseudo-random pattern; 500 kHz channel spacing.
- Read repetition rate: - About 3 reads per second (factory default; feld-programmable to slower repeat rates).

Encoding for Tags and Cards
- Code format types: - Wiegand-type for general use; other types for proprietary formats.
- Code format options: - Number of bits – between 26 and 50 bits total. Open code formats with 26 bits and 37 bits. Reserved facility codes in special 34-bit format.

Information Required in Purchase Order
- Product part number and quantity.
- Code format namer(n-bit-ff , wherenn = total number of bits, and ff= 3 letters that designate AWID's format assignment).
- Facility code (also called site code and company code).
- Starting and ending numbers for sequential individual identifcation numbers for the credentials.

Environmental Conditions
- Operating temperature: -35 C to +65 C (-31 F to +150 F).
- Operating humidity: 0% to 95% non-condensing.
- Exposure to sunlight: If possible, remove tags and cards from direct sunlight inside closed vehicles in hot environment.

	Width	Height	Thickness	Notes	Material
WS-UHF-0-0	4" inch	1-1/16 inch	1/32 inch	Peel of label	Polyester
RV-UHF-0-0	4-1/2 inch	1-1/2 inch	1/32 inch	Peel of label	Polyester
VT-UHF-0-0	4-1/2 inch	2-3/8 inch	1/16 inch	Plus clip	Polyester
HT-UHF-0-0	2-1/6 inch	6-11/16 inch	1/16 inch	Includes hook	Polyester
MT-UHF-0-0	8 inch	15/16 inch	¼ inch	Peel of label	ABS
CS-UHF-0-0	3-3/8 inch	2-1/8 inch	0.075 inch	1 side beveled	PVC & ABS
GR-UHF-0-0	3-3/8 inch	2-1/8 inch	0.030 inch	ISO specs	PVC

Slots and Holes
- WS-UHF, RV-UHF, HT-UHF: Are not suitable to have slots or holes, punched or drilled.
- VT-UHF: Contains a slot for the supplied sunvisor clip.
- MT-UHF: Contains holes at the ends for screws, rivets, wire ties. Must not be punched or drilled.
- CS-UHF: Contains a molded slot for strap-clip or ball-chain.
- GR-UHF: May be punched or drilled only at the precise locations shown on the instructions that can be downloaded at www.awid.com.

Applications
- Credentials are for use on cars, trucks and buses of all sizes, and on special vehicles (fre trucks, forklifts, etc.).
- If the vehicles are a mix of diferent vehicle sizes, such as passenger cars and semi-trailer trucks), use the LR-2200HiLoMA reader set. select the tags and cards that are appropriate for the application.
- CS-UHF and GR-UHF cards may be hand-held and aimed through the driver's side window.

Installation Guidelines for Credentials with LR-2200 Reader

- When planning the installation, the important relationships between the readers and credentials are their locations, distances and aiming.
- Test the planned location of a reader using the LR-2200KIT to observe reads by the credentials.
- Locate the "sweet spot", where most tags will read. Typically at 10 feet to 15 feet, measured directly between the reader's face and tag.
- At the "sweet spot", tag must face the reader, and be about parallel to it, with clear line of sight from the tag to the reader.
- Tag may be "portrait" or "landscape" or diagonal. Reading is best when the tag's long end is nearest the reader as the vehicle approaches.
- When holding a tag or card, keep your hand and body as far as possible from the tag, to the side of the tag, outside of the reader's RF feld.
- Before attaching the WS-UHF tag inside the windshield, clean the windshield inside and outside.
- For WS-UHF tags on side windows, place tags where the window does not retract into the door. Have the tag at the same height as the reader at a the side of the lane.
- Test for metal foil or embedded wire in windshields. If necessary, use other tags or cards instead of WS-UHF windshield tags.
- Use windshield wipers to clear water or snow from the glass that is between the tag and the reader at the "sweet spot" distance.
- Prepare instructions for the users' representative who will oversee tag attachment.

Options and Accessories
- **LR-2200KIT Installation Kit**: Required – a one-time purchase for the installer.
- **Custom graphics** Available on all credentials except MT tags.
- For printing of custom artwork, please contact your Premnet Representative.