

Automatic Vehicle Identification (AVI) System Using TRANSIT Ultimate long range reader



Features That Make a Difference:

- Compact industrial design
- Read range up to 10 m (33 ft)
- Object speed up to 200 km/h (124 mph)
- Well defined adjustable read range
- Multi-channel frequency offset
- Variety of long range tags available
- Color LED indication
- Tag authentication based on AES encryption
- Bi-directional communication using two RFID channels
- Supports backward-compatibility mode with previous TRANSIT readers
- Weatherproof housing
- Wall mounting included

The Nedap Automatic Vehicle Identification (AVI) System is based on semi-active RFID technology, which enables automatic vehicle identification at distances of up to 10 m (33 ft) and speeds of up to 200 km/h (125 mph). Positive identification does not require any action by the driver; the vehicle is automatically identified as it enters the identification range of the reader. The Nedap AVI system is comprised of a long distance standard TRANSIT reader and tags.

This high-end reader is designed to perform well in high security applications, demanding vehicular access control applications and under harsh environmental conditions. The TRANSIT Ultimate offers the highest level of security and convenience for both vehicles and drivers. The built-in antenna, an integrated read range adjustment board and a variety of communication interfaces ensure seamless and flexible integration. The identification lobe of the reader is a directed beam, offering precise determination of the detection area. A second RFID communication channel is used for advanced bidirectional communication and secure tag authentication.

Channel selection

The TRANSIT Ultimate operates on a factory-set frequency. The frequency channel selection allows multiple readers to operate in close vicinity of each other without interference.

Read Range Adjustment

The reader efficiently resolves typical multi-lane, entry and exit reader challenges. The read range of the TRANSIT Ultimate can be adjusted to offer secure and reliable identification in demanding applications.

Housing & Mounting

The weatherproof TRANSIT Ultimate reader features an IP66 certified housing. The reader continues to operate reliably under harsh environmental conditions and is able to withstand exposure to rain, snow and ice. Wall mounting equipment is included.

Interfaces & Protocols

The TRANSIT Ultimate reader is designed for seamless and flexible integration into existing or newly installed Software House access control systems. The TRANSIT reader interfaces with the host system via open industry-standards protocols such as Wiegand or Omron. Customer specific protocols can be implemented on request.

Tags

The Nedap AVI system offers a variety of long range, lithium-powered tags for various applications. The tags are programmed with random numbers in a 26-bit Wiegand format and feature an integrated mounting device to provide ease of installation.

The new TRANSIT Ultimate reader is fully backwards compatible with existing TRANSIT transponders and readers in existing installations.

Window Button Tag

The Window Button tag has exceptional design that suites the interior of a passenger car. It can be installed in seconds with an integrated suction pad. There is an option for a push button version that requires driver authorization.

Compact Tag

The Compact Tag is a slimline RF tag combining long and short range identification in various applications. The Compact Tag has a standardized credit card size, and can be identified up to 7m (23ft) with the TRANSIT Standard and TRANSIT Extended readers.

Heavy Duty Tag

Developed for applications requiring long-range identification in harsh environments, such as explosive zones, the Heavy Duty Tag is weather, shock, and vibration proof and can withstand harsh chemicals.

Specifications

Physical

Dimensions	330 x 274 x 140mm (13 x 10.8 x 5.5 in)
Weight	5 kg (11 lbs)
Housing	Cover: ABS plastic; Housing: Die-casting ADC12
Operating temperature	-30°C to 60°C (-22°F to 140°F)
Mounting	Wall mounting included

Communication

Detection Range	Up to 10 m (33 ft)
Range Check	Acoustic by built-in beeper
Object Speed	Up to 200 km/h (124 mph) at appropriate distance
Frequency Offset	138 channels (32 channels U.S.) – 600 kHz spacing to avoid interference (to be used when TRANSIT readers are installed in close vicinity of each other)
Polarization	Circular (LHC) (2450 MHz) integrated antenna; Horizontal (433 MHz); dedicated antenna
Antenna Connection	One (1) optional external inductive antenna connection
Interfaces	RS232, RS422, RS485, Profibus DP, TCP/IP
Communication Protocols	CR/LF, DC2/DC4 and various OEM protocols (for more information refer to the firmware manuals)
Encrypted Air Interface	Nedap proprietary encryption standard

Electrical

Power	100-240V AC (60 - 50 Hz) or 24V DC (±10%)
Power consumption	<25VA (on AC), <20 watt (on DC)
Operating frequency	2.438 – 2.457 GHz, 433.62 and 434.22 MHz (RX-Cat 3) Ton <5sec

Inputs/Outputs

Input	3 dry contacts or TTL
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Card Boosters

The Card Booster attaches to the inside of the windshield and amplifies the read range of an inserted proximity card up to 10 m (33 ft). The Card Booster Unit is ideal for applications in which drivers already have an ID card for access control to the building, Time & Attendance system, and vending machines. The Booster is available for almost all card technologies:

- Smartcard Booster Ultimate: supports ISO 14443 or 15693 compliant smartcards (eg. MIFARE, MIFARE DESFIRE, LEGIC, Calypso and HID iClass) operating on 13.56 MHz. LEGIC
- Booster Ultimate: supports ISO 14443, 15693-3 or LEGIC RF compliant smartcards operating on 13.56 MHz

Relay Output	One (1) relay output (NO, Common, NC), 24V DC 2A
Output	Barcode 39, Wiegand 26-bit, Wiegand 32-bit, Wiegand 37-bit, FF56, Omron ISO 7811/2

Regulatory

Certifications	EMC directive EC: 2014/ 30/ EC; 2004/ 108/ EC; EN301489-1,-30,-17; EN6100-6-2; EN61000-6-3
Safety	EN 60950, UL 60950, UL 50
Regulations	FCC part 15.245 - EN 300 440; FCC part 15.231 a, b - EN 300 220
Protection	IP66

TRANSIT Standard Long Distance Reader

NED-9215689	TRANSIT Ultimate, long range RFID reader
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Tags

NED-9882650	Window button tag
NED-9882480	Window button tag with switch
NED-9891900	Compact tag
NED-9892257	Compact tag with HID iCLASS
NED-9948538	Prox-Booster 2G tag
NED-9948546	Prox-Booster 2G single tag
NED-9948554	Smartcard-Booster 2G tag
NED-9875980	Heavy duty tag
NED-9564314	Window Tag Ultimate
NED-9982809	Smartcard Booster Ultimate

Accessories

NED-5626595	Reader pole mounting kit
NED-7562640	Reader weather protection hood
NED-5402956	Tag holder for compact tag

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