

LPR[®]-SAT

Position Detection of On-Terminal Vehicles with Satellite Navigation and LPR[®] Sensors

- Determination of vehicle position and orientation
- Independent from commercial correction signals with own reference station
- Unaffected by contamination, vibration or weather
- Quick installation
- Retrofit during continued operations
- Suitable for all types of vehicles and cranes
- Maintenance-free

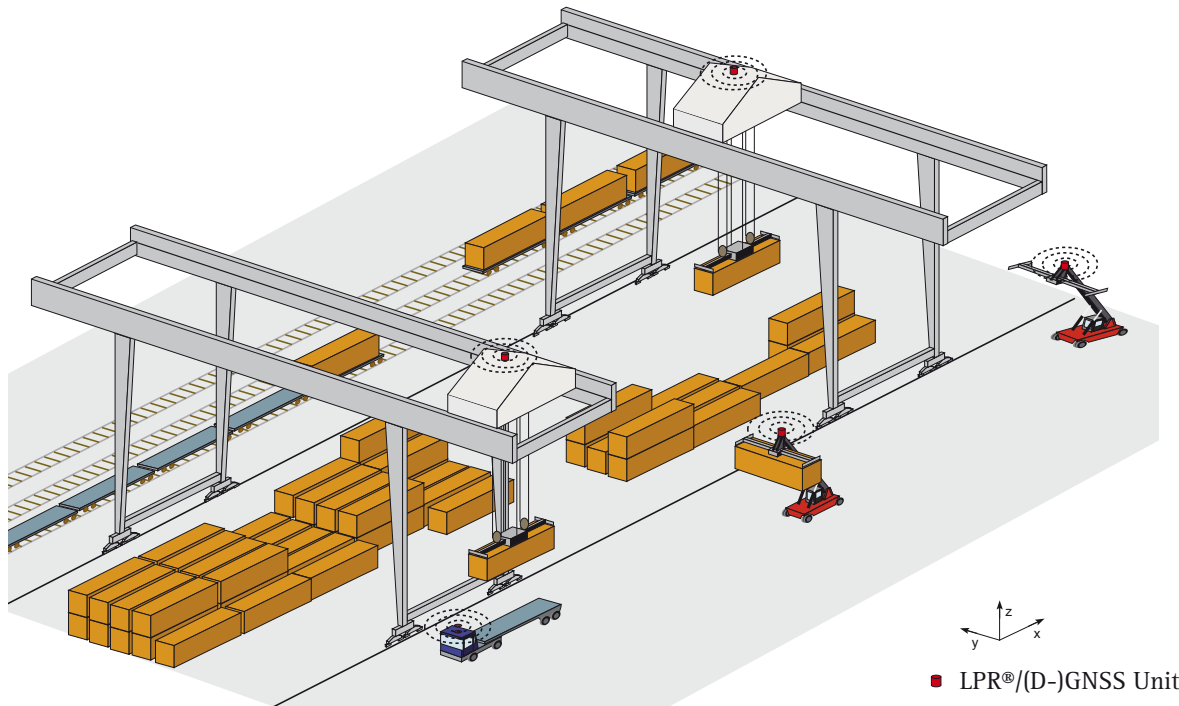
The Symeo LPR[®]-SAT receiver features an industrial differential GNSS using an independent reference station to provide a correction signal for a typical ± 0.4 m accuracy. It is combined with an optionally integrated LPR[®]-2D receiver. One antenna per system allows determining the position, while adding a second antenna also enables the heading/orientation measurement.

For even greater accuracy and consistent position signals in areas where satellites are temporarily shielded or unavailable, the optional LPR[®]-2D receiver is activated. This ensures that, even under cranes or in buildings, vehicle positions are continuously available in LPR[®] enabled areas (transponders have to be installed).

Additional on-board signals, e.g. the loading status, can be processed by the receiver and are provided by the Symeo data protocol.

For ease of installation, the LPR[®]/GNSS-receiver and the physical signal interface to other on-board devices can be linked via a radio interconnection on the vehicle. For example, this avoids complex wiring along an extendable boom of a reach stacker, with the LPR[®]/GNSS-receiver mounted on the boom top and a signal interface at the driver cabin.

Typical LPR[®]-SAT application



■ LPR[®]/(D-)GNSS Unit

Technical Data: LPR[®]-SAT

GNSS Receiver	L1 C/A, optional L2 GPS + Glonass, optional RTK
Typical accuracy (horizontal)	up to: $\pm 5\text{-}20$ cm (LPR [®])*; $\pm 0,4$ m CEP, P (95%): 0,83 m (D-GNSS)**; ± 2 m CEP (GNSS)***
Repeat rate	10 Hz, higher rates on request
Voltage	12-36 V DC
Power consumption at max. update rate	up to 20 W
Ambient temperature	-30 °C to +75 °C
Protection class	up to IP65
Housing dimensions (LxWxH); weight	280 x 230 x 110 mm; 3.8 kg
GNSS antenna dimensions	$\varnothing 65$ mm, height 20 mm or $\varnothing 200$ mm, height 50 mm
Hardware interface	serial RS232, Ethernet TCP/IP
Data interface	Symeo GNSS-protocol, LPR [®] -2D-protocol
Status indication	LED
External connector type	plug and cable gland
Antennas	up to 2 GNSS and 2 LPR [®] antennas, 1 each for reference signal and radio interconnection to IO-box
Compliance	CE, FCC
LPR [®] -2D	optional-slot available

* provided that ≥ 6 LPR[®] transponders with required signal quality are available

** provided that ≥ 8 GNSS satellites are received with unobstructed/uncorrupted signals (no multipath) with a GNSS base station according to Symeo specification (antenna cable and reference antenna) that provides GNSS correction signals to all GNSS receivers within a 5 km radius from the base station

*** provided that ≥ 8 GNSS satellites are received with unobstructed/uncorrupted signals (no multipath)

definition x meter CEP: 50% of all positions in a circle with radius x meter

definition P (95%) x meter: 95% of all positions in a circle with radius x meter