

GPS20/CANID/Inline

GPS to CAN dbc

20 Hz GPS Receiver System with CAN Output
Optimized GPS Algorithms Open Area/ City Area
System Integration over MCAN Connections
System Start over dbc Content (Logger Network)
Automatic Generation of dbc File



Abbildung Prototyp / Platzhalter

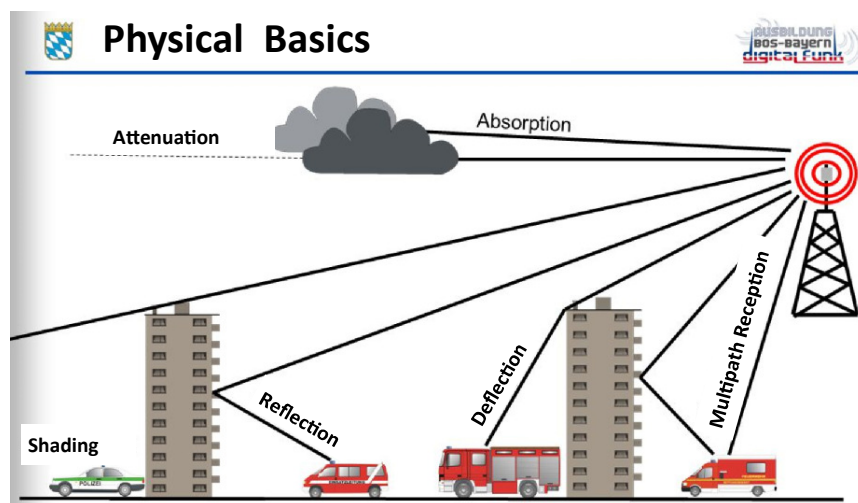
GPS Working Conditions / Environmental Influences

The requirements of the GPS sensors that are used in the Automotive measuring technology are totally different from the quality of consumer devices.

The conditions at the measuring location with weather changes, reflective terrace fronts, trees and landforms are causing GPS shadings and reflections which can affect the signal quality. The allocation of several GPS corrective data can minimize the effect.

EGNOS* in Europe und WAAS* in North America are available as satellite based extension systems. SBAS* identifies correction values over fixed ground stations to determined „relative“ GPS position. These values are received on GPS frequency L1 and are used for calculation of an approximate absolute GPS position.

All GPS systems and GPS converters that are offered by DUETTO-Engineering are receiving and decoding these correction signals with processing in position calculation.



Source Graphic: <http://images.slideplayer.org/11/3365691/slides/>

EGNOS*

(European Geostationary Navigation Overlay Service)

WAAS*

(Wide Area Augmentation System)

SBAS*

(Satellite Based Augmentation System)

Optimized GPS Algorithms

The perception of considerable test series have lead to optimized GPS algorithms that were developed in close cooperation with BMWs fleet measuring technology. For measuring in free field conditions, but also under rough GPS conditions like in shaded city area or in the mountains, it's possible to replicate route profiles directionally absolutely stable. The necessary high stability of GPS signals for signal evaluation can be reached at the same time. For immediate readiness and for acquisition of objective test series the system is buffering GPS almanach and current satellite fixes with an adequate number of satellites.

Start-Up Behaviour in Logger Network

If the GPS converter is used in combination with a vehicle data logger then the start-up behaviour and the subsequent changes of system parameters (depending on application) can be saved online in the device via CAN messages. Therefore the user can choose between max. 4 prepared profiles.

The system parameters will be stored in the non-volatile memory of the signal converter and are still preserved after shut-off of the supply voltage.

Space saving housing design for „inline cabling“ in wiring harness

The GPS receiver can be integrated space savingly into wiring harness through it's elongated and extremely slim housing design made of massive Aluminum. The external antenna as well as incoming and outgoing MCAN connections will be plugged in at the front sides. An encoded LED light provides information on operating mode of the component.

About integration of „MCAN“ GPS information into CAN chains

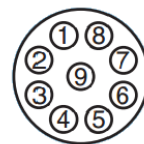
CAN amplifiers of the leading suppliers of vehicle measuring technology are interconnected over a standardized pair of sockets (MCAN) as chain structure. In case that a speed signal or geographical road coordinates are needed then the ultra compact GPS/CAN converter GPS20/CANID/Inline can be used as integral part of the CAN measuring chain. The realisation of the front-sided accessible CAN sockets and the signal pinout is according to common standard.

MCAN Connection

Connection socket: Lemosia EGG.0B.309,

Compatible connector: Lemosia FGG.0B.309

Deviating socket layout is available on request!



Pin	Signal		Pin	Signal
1	+ VCC		6	GND (Terminal 31)
2	+ VCC		7	GND (Terminal 31)
3	nc		8	CAN High
4	nc		9	CAN Low
5	CAN GND / GND			

Spezifications / achievable accuracy

Reference conditions: GNSS Fix available, CEP ₅₀ , 24h static position, -130dBm, more than 6 satellites.	w/o. SBAS	with SBAS
GPS only	2,5 m	2,0 m
GPS & Glonass / GPS & BeiDou	2,3 m	1,8 m
Speed	0,05 m/s	
Heading (GNSS Fix available, 50% at 30m/s)	0,3°	