



CONNECTIVITY SOLUTIONS
On-Board Modules

TECHNICAL DATA **TC3G**

On-Board Module TC3G

The TC3G on-board module provides a professional entry into the world of STW networking and data management solutions. With its versatile interfaces the Linux-based module communicates both inside and outside the vehicle network. For this it uses WiFi, Bluetooth or 2G / 3G. The integrated satellite navigation systems receiver (GPS and GLONASS) allows an exact determination of the position of the commercial vehicle which with correction data can be determined to a few centimeters. All recorded data can be transmitted to authorized users at any time. The robust housing of the TC3G, which has a protection class that is dependent on the antenna connections, but is at least IP67, enables the reliable use in the rough machine environment.

Sophisticated connectivity gateway

The variety of interfaces on the on-board module TC3G provides the necessary connectivity for every requirement. This allows the user to use the unit as a local data processor as well as a universal data transmission system.

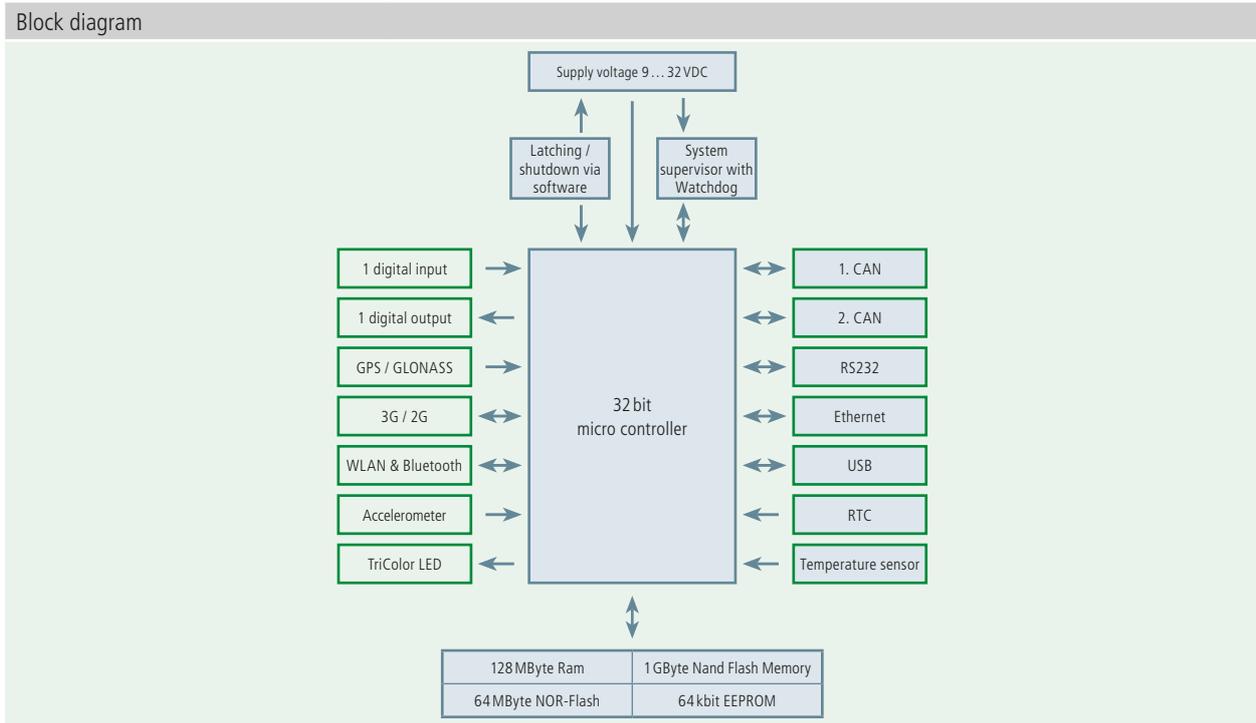
TECHNOLOGY	CUSTOMER BENEFITS
▶ 2 housing variants	▶ The right dimensions for the available space; simple integration by selecting the antenna connection.
▶ Networking on the machine	▶ Connection to the vehicle network / vehicle control system via CAN bus and Ethernet enables access to the relevant machine data (machine state, operating hours, maintenance state).
▶ Wireless connection	▶ For every application the ideal wireless communication (WLAN, Bluetooth, 2G / 3G) for data transmission.
▶ Cloud networking	▶ Prepared to connect to STW's "machines.cloud" platform, store all information about machines, configurations, operating conditions, etc.; easy customization of the user interface.
▶ Display of operating conditions	▶ Visibility of the current operating state via a freely programmable TriColor LED.
▶ Robustness	▶ A slim housing developed for demanding applications in the interior and on the exterior of commercial vehicles. A protection class of IP67 when connected.
	▶ Compliance with standards for CE and E1 conformity. Compliance with standards for the automotive, agricultural and construction machinery industries. Can be used in a temperature range of -30 °C to 60 °C.

Technical Data

Interfaces	
CAN	2x CAN 2.0B (11 bit and 29 bit Identifier), Low- / High-Speed up to 1 Mbit/s
RS232	(serial connection) programmable baud rate
Ethernet	IEEE 802.3, 10 / 100 Mbit/s
I/Os	
1 digital input	
1 digital output	
Processor and memory	
Processor	32 bit controller, MPC5200B 400 MHz
RAM	128 MByte
EEPROM	8 kByte
NAND-Flash	1 GByte
NOR-Flash	64 MByte
Software	
Operating system	Linux, Board Support package (incl. source code) open source development environment

System data	
Supply voltage	9 ... 32VDC
Current consumption	350 mA at 12V
Temperature range	Operating: -30 °C ... +60 °C (-22 °F ... +140 °F) housing temperature
Internal temperature sensor	Built-in
3 axis accelerometer	Wakeup function
Real time clock (RTC)	Gold cap buffered with wakeup function
Connectors	19 pin cable suited plugs (Tyco / AMP)
	SMA plugs for 1 x WiFi or 1 x 2G/3G and 1 x GNSS, optional CDMA
Protection class	IP67 with external antennas when connected, IP6K9K with internal antennas
Dimensions	Internal antennas: ca. 134 mm x 117 mm x 36 mm (5.28" x 4.61" x 1.42")
	External antennas: ca. 183 mm x 117 mm x 36 mm (7.21" x 4.61" x 1.42")
Weight	0.3 kg (0.67 lbs)
Certificates and approvals	Tests according to standards of the automotive, agricultural and construction machinery industry
	CE, FCC, RED , PTCRB, AT&T, (Verizon for CDMA)
	E1: Use in any type of vehicle with a 12V or 24V power supply and battery (-) at the body

Expansion board (Wireless communication)	
WLAN & Bluetooth	IEEE802.11 a/b/g/n, 2.4 & 5 GHz, Access Point and infrastructural mode Bluetooth V2.1+EDR, BLE (Bluetooth Low Energy), Power Class 1.5
3G / 2G Modem	Five-Band 3G - HSPA+ , Quad-Band 2G - GPRS/EDGE
GPS & GLONASS	GLONASS & GPS simultaneously, 1 ... 10 Hz update rate, 33 tracking channels, SBAS (WAAS, EGNOS, MSAS, GAGAN, QZSS) support of improved location accuracy



- Application examples
- > Connecting fleet vehicles to optimize operating hours
 - > Scheduling of vehicle maintenance
 - > Forward planning of maintenance and repairs to minimize or avoid unplanned downtime
 - > Possibility for remote maintenance e.g. transferring software updates
 - > Local data processing for vehicle control
 - > Optimization of utilized resources (e.g. seeds)



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