

SA25 – GPS SA-Adapter

- 48-channel GPS receiver
- GPS according to NMEA 0183
- L1 frequency, C/A code, SPS
- Rugged SMA connector
- Optical isolation
- -40 to +85°C qualified

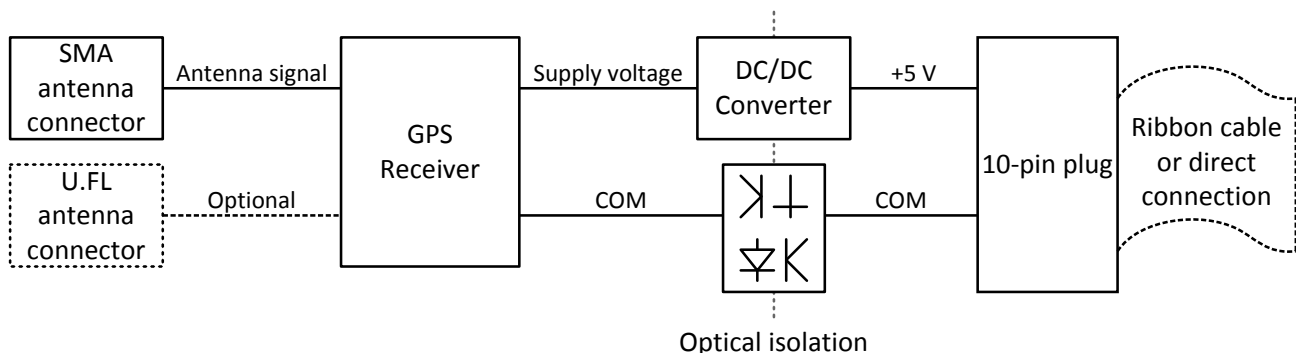


The SA25 provides a GPS receiver interface which supports L1 frequency, C/A code and SPS. An external active or passive antenna can be connected to a rugged SMA connector at the front panel. The received GPS signals are sent to the host via a 5V TTL COM port with a data transfer rate of 4800 baud (configurable).

SA-Adapters are small universal boards providing the line drivers for legacy serial I/O, fieldbus interfaces and

other small I/O functions. One serial line is provided per adapter, which can be plugged directly to the CPU board as a mezzanine. Alternatively, the adapter can be connected to the front panel via ribbon cable. The SA concept allows to add additional I/O interfaces to many of MEN's CPU boards, enhancing flexibility with regard to the line transceivers and isolation requirements. Whether a specific SA-Adapter (or a mix of different SA-Adapters) fits on a specific CPU board is determined by a combination of mechanical, performance, FPGA and operating system criteria and needs to be verified for every board configuration requested.

Diagram



Technical Data

GPS Interface	<ul style="list-style-type: none"> ■ 48-channel GPS (Global Positioning System) receiver based on SiRF® IV ■ GPS Band/Code: L1 frequency, C/A code, SPS ■ Integrated TCXO, RTC ■ Accuracy (unaided): <ul style="list-style-type: none"> □ Position: 2.5 m (CEP50) □ Velocity: 0.01 m/s (50%) □ Time: 1 µs (typ.) ■ Time To First Fix (TTFF): <ul style="list-style-type: none"> □ Cold start: 35 s typ. □ Warm start: 35 s typ. □ Hot start: 1 s typ. ■ Sensitivity: <ul style="list-style-type: none"> □ Acquisition (cold): -147 dBm □ Re-Acquisition: -162 dBm □ Tracking: -163 dBm ■ Protocol: NMEA 0183 (configurable to SiRF® binary OSP) ■ One SMA antenna connector at front panel <ul style="list-style-type: none"> □ For the use of an external active or passive antenna □ Rugged screw connection □ Outside thread □ Inner conductor female
Host Interface	<ul style="list-style-type: none"> ■ 5 V TTL COM port <ul style="list-style-type: none"> □ Data transfer rate configurable (default: 4800 baud 8N1) □ Time Mark (TM) output signal provides pulse-per-second (PPS) output pulse signal for timing purposes
Installation	<ul style="list-style-type: none"> ■ As a piggy-back board directly on a carrier board ■ Via ribbon cable
Electrical Specifications	<ul style="list-style-type: none"> ■ Isolation voltage: <ul style="list-style-type: none"> □ Optical isolation: 2.5 kVAC between isolated side and digital side ■ Supply voltage/power consumption: <ul style="list-style-type: none"> □ +5 V (-3%/+5%), 120 mA without antenna, 190 mA with antenna (depends on used antenna) □ Max. supported power consumption for active antenna: +5 V / 70 mA □ Impedance: 50 Ohm
Mechanical Specifications	<ul style="list-style-type: none"> ■ Dimensions: 32 mm x 42 mm ■ Weight: 20 g
Environmental Specifications	<ul style="list-style-type: none"> ■ Temperature range (operation): <ul style="list-style-type: none"> □ -40..+85°C (qualified) □ Airflow: min. 1 m/s ■ Temperature range (storage): -40..+85°C ■ Relative humidity (operation): max. 95% non-condensing ■ Relative humidity (storage): max. 95% non-condensing ■ Altitude: -300 m to +3000 m ■ Shock: 15 g, 11 ms ■ Bump: 10 g, 16 ms ■ Vibration (sinusoidal): 1 g, 10..150 Hz ■ Conformal coating on request
MTBF	<ul style="list-style-type: none"> ■ 826 041 h @ 40°C according to IEC/TR 62380 (RDF 2000)
Safety	<ul style="list-style-type: none"> ■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers

Technical Data

EMC Conformity	<ul style="list-style-type: none"> ■ EN 50121-3-2 (table 4, 5, 6) (EMC in rolling stock) ■ EN 55011 (radio disturbance) ■ EN 61000-4-2 (ESD) ■ EN 61000-4-3 (electromagnetic field immunity) ■ EN 61000-4-4 (burst) ■ EN 61000-4-5 (surge) ■ EN 61000-4-6 (immunity to conducted disturbances)
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Configuration & Options

Standard Configurations

Article No.	Antenna Connector
08SA25-00	SMA

Options

Front Connector	<ul style="list-style-type: none"> ■ One U.FL antenna connector instead of SMA
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Please note that some of these options may only be available for large volumes. Please ask our sales staff for more information.

Ordering Information

Standard SA25 Models	You can find a more detailed overview of possible carrier board/SA-Adapter combinations along with software support in our option matrix (PDF) .	
	08SA25-00	GPS receiver, isolated, -40..+85°C screened
	08SA25-01	GPS receiver, SMA antenna, isolated, -40..+85°C with qualified components, conformal coating
Documentation	20SA25-00	SA25 User Manual

Contact Information

Germany

MEN Mikro Elektronik GmbH
Neuwieder Straße 3-7
90411 Nuremberg
Phone +49-911-99 33 5-0
Fax +49-911-99 33 5-901

info@men.de
www.men.de

France

MEN Mikro Elektronik SAS
18, rue René Cassin
ZA de la Châtelaine
74240 Gaillard
Phone +33 (0) 450-955-312
Fax +33 (0) 450-955-211

info@men-france.fr
www.men-france.fr

USA

MEN Micro Inc.
860 Penllyn Blue Bell Pike
Blue Bell, PA 19422
Phone (215) 542-9575
Fax (215) 542-9577

sales@menmicro.com
www.menmicro.com

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