



Sounding Processing Subsystem SPS311G



Features

- Software Defined Radio technology for outstanding telemetry link performance and bandwidth efficiency
- Optimum performance when used with the Vaisala RS41-SG, RS41-SGP, or RS41-SGM radiosonde.

Vaisala Sounding Processing Subsystem SPS311G is the latest generation of the SPS-series for the Vaisala DigiCORA® Sounding System MW41.

Software Defined Radio Technology in Use

SPS311G makes extensive use of Software Defined Radio (SDR) technology for receiving radiosonde signals. SDR technology is mature and commonly used today in a wide range of products including cellular base stations, military communication systems and public safety radios.

Radio Technology Programmed in Software

In SPS311G, most of the radio technology is programmed in software to work with a powerful Digital Signal Processor (DSP). This greatly improves flexibility and the future upgradability of both the hardware and software. SPS311G's SDR receiver works with the Vaisala RS41

radiosonde family. When used with the Vaisala RS41 Radiosondes, SPS311G offers excellent telemetry link performance and bandwidth efficiency. As a sounding progresses, SPS311G receives the radiosonde and GPS signals by means of the SDR receiver and local antennas. SPS311G decodes the data and relays it to the sounding workstation for processing and archiving.

Technical Data

Operating Environment

Indoor use. Altitude up to 2000 meters.

Operating temperature range	0 °C ... 45 °C
Operating humidity	10 ... 90 %RH (non-condensing)
Storage temperature	-55 °C ... 70 °C
Storage humidity	5 ... 95 %RH

Mechanical Specifications

Dimensions	235 x 335 x 184 mm
Weight	7.5 kg max.
Cooling system	Forced air convection, three fans

Inputs and Outputs

Power consumption	70 W max.
Mains voltage nominal	100 ... 240 VAC
Mains frequency	50 / 60 Hz
DC power connection	19 ... 36 VDC, 60 W max.
UHF Connector	Coaxial N-type female
GPS Connector	Coaxial TNC-type female
VLF Connector	Coaxial C-type female
Antenna power	Antenna amplifiers are powered through antenna cables

Radio Receiver System

Modulation	GFSK, GMSK, FM, FSK
Frequency range	400.15 ... 406 MHz
Sensitivity with RS41 and RS92 radiosondes	-120 dBm
Noise figure	< 2.5 dB
Image rejection	70 dB
Spurious Free Dynamic Range with RS41 and RS92 radiosondes	90 dB
Third Order Intercept Point (IIP3)	0 dBm
Input impedance	50 Ω

(specifications valid with Vaisala telemetry antennas)

