

Vaisala Sounding Processing Subsystem SPS311



Features

- Software Defined Radio technology for outstanding telemetry link performance and bandwidth efficiency
- Optimum performance when used with the Vaisala Radiosonde RS92-SGP

The Vaisala Sounding Processing Subsystem SPS311 is the latest generation of the SPS-series for the Vaisala DigiCORA® Sounding System MW31. The SPS311 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 the SPS311, 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. The SPS311's SDR receiver works with the Vaisala RS92 radiosonde family. When used with the digital Vaisala Radiosondes, the SPS311 offers excellent telemetry link performance and bandwidth efficiency.

As a sounding progresses, the SPS311 receives the radiosonde and GPS signals by means of the SDR receiver and local antennas. The SPS311 decodes the data and relays it to the sounding workstation for processing and archiving.

Technical data

General

Dimensions	235 x 335 x 184 mm
Power consumption	70 W max.
Mains voltage	90 ... 132 V or 175 ... 264 V
Mains frequency	47 ... 63 Hz
DC power connection	18 ... 36 VDC, 60 W max.
Weight	7.5 kg max.
Cooling system	Forced air convection, three fans
Connectors	
UHF Coaxial	N-type female
GPS Coaxial	TNC-type female
VLF Coaxial	C-type female

Antenna amplifiers are powered through antenna cables

Radio receiver system

Modulation	GFSK, GMSK, FM, FSK
Frequency range	400.15 ... 406 MHz
Sensitivity	-120 dBm: RS92-SGP -110 dBm: RS92-K, RS92-KL
Noise figure	<2.5 dB
Image rejection	70 dB
Spurious Free Dynamic Range	90 dB with RS92-SGP
Third Order Intercept Point (IIP3)	0 dBm
Input impedance	50 Ohms

(specifications valid with Vaisala telemetry antennas)

Environmental conditions

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

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