VAISALA

Vaisala DigiCORA® Sounding System

Leading the world in BUFR messaging

All you need to measure the upper air atmospheric profile

The Vaisala DigiCORA® Sounding System simplifies your daily synoptic observations by receiving, processing and forwarding meteorological information surely and securely. It is also an excellent tool for research needs as well as for special measurement campaigns.

Complete package

The Vaisala DigiCORA® system is a result of Vaisala's 70 years of experience in the development and production of sounding equipment. It is a complete package for measuring the upper-air atmospheric profile. The system integrates sounding control, archiving of sounding data and coding of meteorological messages. It can be set-up with various features to measure pressure, temperature, humidity (PTU) and wind.

WMO specified BUFR format

Vaisala keeps the software up to date and makes new versions available to ensure your system meets the latest WMO regulations. Vaisala Services ensure that your system keeps working productively, delivering the measurement data you require.

In addition to the traditional alphanumeric codes, such as TEMP and PILOT, the system generates messages in the WMO's specified BUFR format.

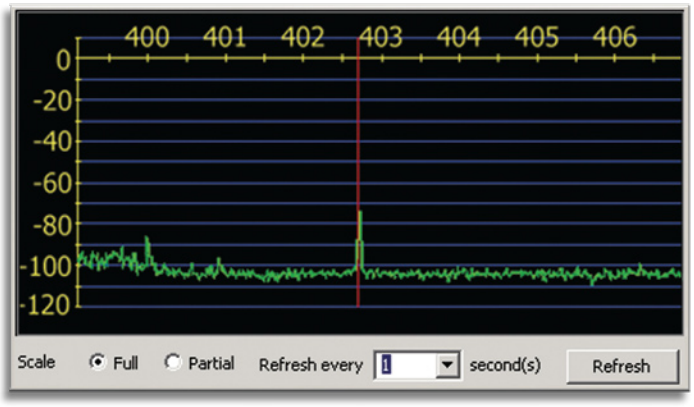
Benefits

- Flexibility for multiple applications
- Timely updates to meet WMO regulations
- BUFR messages
- Range up to 350 km
- Microsoft Windows Vista support

You choose and DigiCORA® does the rest

Guaranteed comprehensive data

The Vaisala DigiCORA® Sounding System uses the latest technology and software to ensure accuracy of acquired data. It makes extensive use of Software-Defined Radio (SDR) technology. A excellent telemetry range, of up to 350km, is achieved when used in combination with the Vaisala Radiosonde RS92-SGP. This outstanding performance is ensured by the excellent bandwidth efficiency of digital transmission and error detection and correction.



Finding a suitable frequency and monitoring telemetry is easy with a real-time spectrum display.

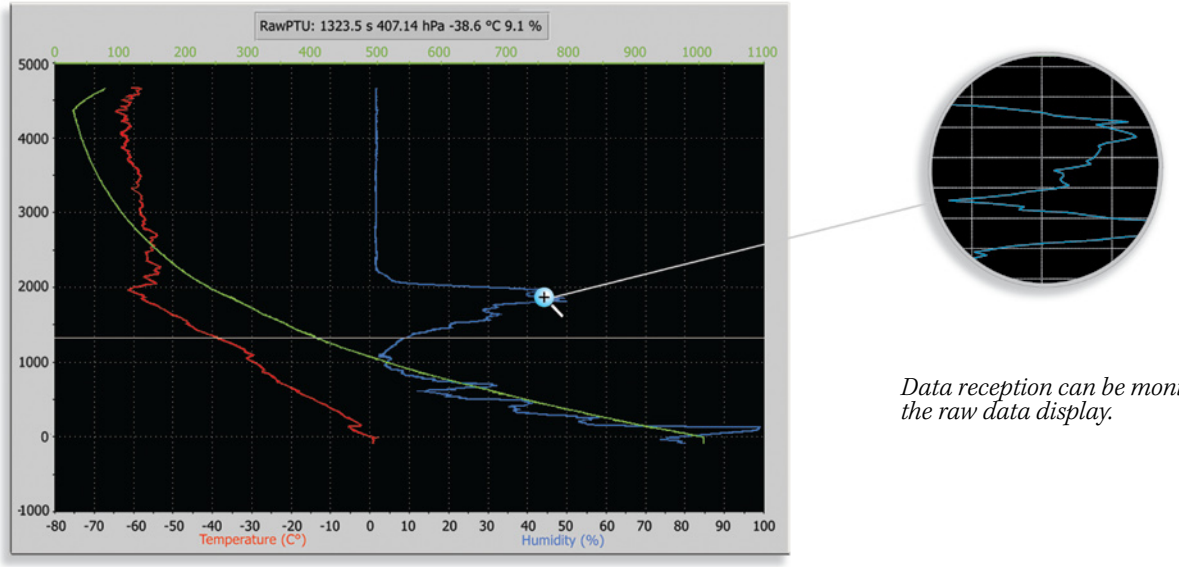
Flexibility gives you choice

The system functions can be chosen by setting adjustable parameters and triggers; the parameters determine data processing. The triggers monitor sounding progress to initiate actions such as message coding and transfer. The system has an easy script language that enables the creation of individual ASCII format data outputs.

These features offer the flexibility to use the same system for multiple applications. The Vaisala DigiCORA® Sounding System is reconfigurable to meet your changing needs and to automate many routine tasks.

Automatic data collection and processing

The standard DigiCORA® sounding software provides pressure, temperature, relative humidity (PTU) and wind data collection and processing, as well as message coding and archiving. It also supports the measurement of ozone concentrations and radioactivity.

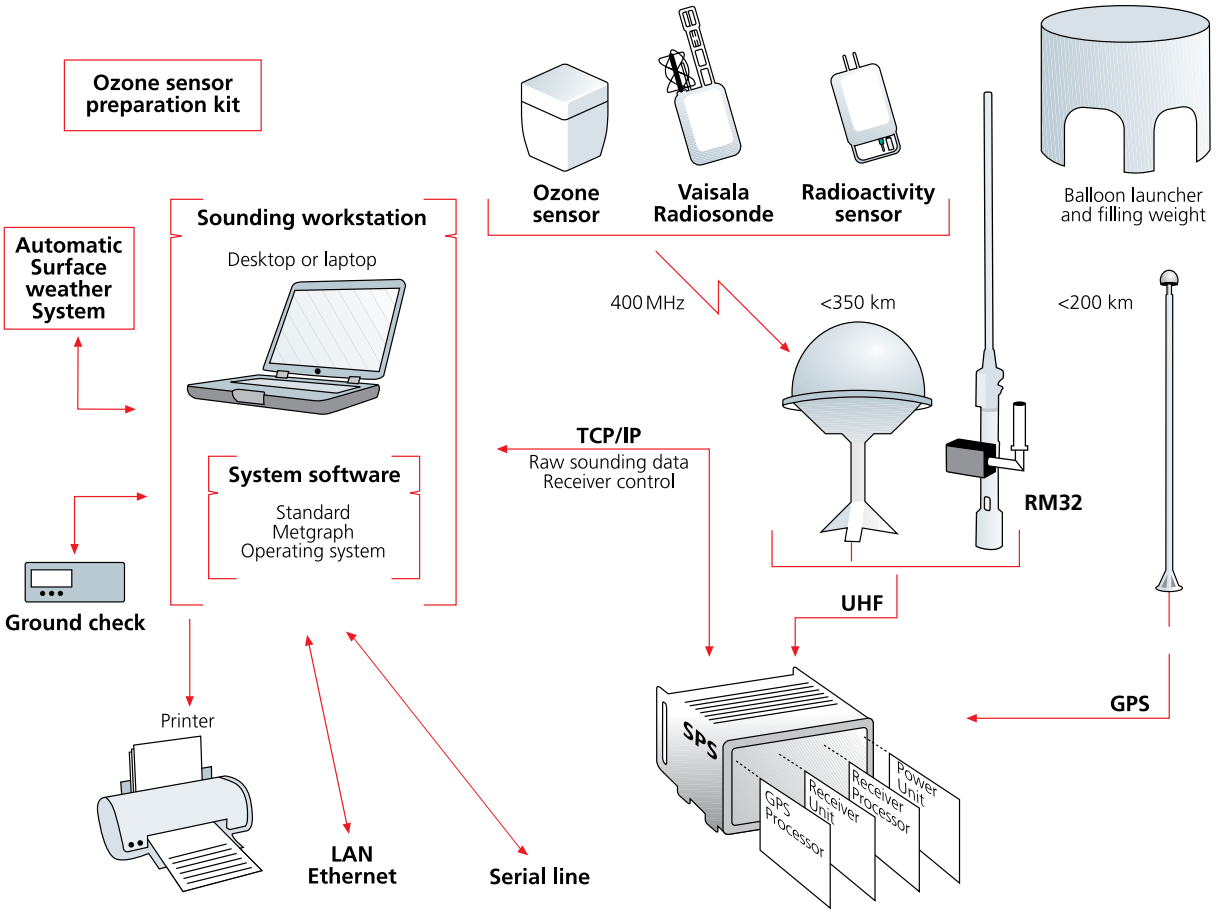


Data reception can be monitored on the raw data display.

Various interconnection options for your application needs

The DigiCORA® basic components and functions

- Ground check set prepares the radiosonde for flight
- Antennas receive the radiosonde and navigational signals
- The sounding processing subsystem (SPS) receives and processes the radiosonde signals and computes wind data
- Sounding workstation together with the sounding software serves as the main computer and user interface



The Vaisala DigiCORA® can be augmented with a number of additional devices.

Vaisala DigiCORA® offers a broad range of features and benefits

Control functions

- A radio frequency display for finding a free frequency and for tuning the radiosonde
- An auto start-stop facility which automatically detects the launch and termination of sounding
- A manual start-stop for the manual starting and/or stopping of sounding
- Action triggers automatically initiate actions based on sounding progress
- Voice notifications of alarms, warnings and progress notices

Sounding data display and editing functions

- Raw data plotter displaying the raw data received from the radiosonde on a graph
- Edited data plot displaying the edited data received from the radiosonde*
- A research mode that bypasses the data filter to receive only raw data for meteorological study
- A position plotter that records the route taken by the radiosonde
- A graphical data display showing plotted graphs of basic meteorological parameters*
- Thermodynamic diagrams depicting upper air thermodynamics*
- A Hodograph for observing wind shear conditions*

Meteorological messages

- WMO defined messages (see the technical data for message formats)
- NASA AMES (NILU) ozone data messages

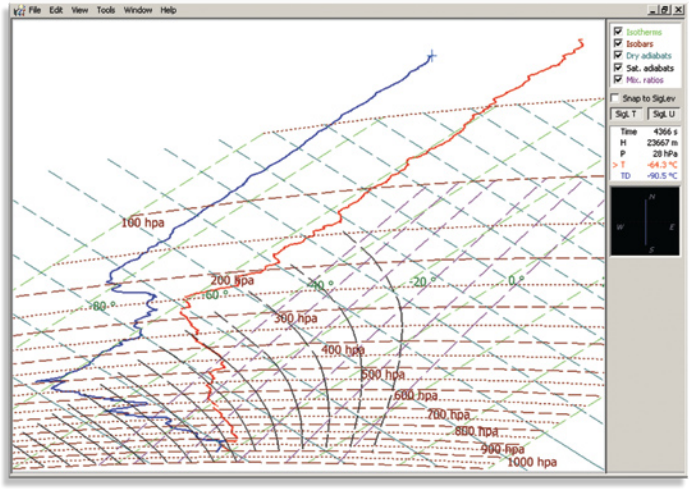
Other functions

- Real time message coding of meteorological messages
- The facility to edit significant points manually*
- A message editor to manually edit ASCII messages
- The facility to automatically send data using protocols such as FTP
- Data archiving functions, archiving tools for saving the collected sounding data
- Simulation facility allowing a re-run of soundings with altered processing parameters
- ASCII data export tools for extracting various data sets in ASCII format
- Script language for tailoring your own ASCII data output formats

** These features belong to METGRAPH*

Graphical diversity with METGRAPH

The optional METGRAPH software module provides you with graphical data outputs. This includes all measured and calculated meteorological parameters. With Metgraph, you can view and edit the automatically selected significant points.



METGRAPH supports thermodynamic diagrams Tephigram, SkewT/Log-P, Stüve and Emagram. It also includes a Hodograph, which can be used to observe wind shear conditions.

Technical data

Vaisala DigiCORA® Sounding System MW31

SOUNDING WORKSTATION

Intel® Core™2 Duo, min speed 2.0 GHz
System memory minimum 2 GB
Hard drive minimum 80 GB
DVD+/-rw
19" wide screen LCD display, desktop / 15" TFT display, laptop
Operating system Windows Vista® Business, pre-installed
DigiCORA Sounding Software, pre-installed:
Standard software
METAGRAPH software (optional)
System recovery tools

VAISALA SOUNDING PROCESSING SUBSYSTEM SPS311

Supports all Vaisala radiosondes
Windfinding options:
Code correlating GPS
Loran-C with automatic chain selection
Radio-direction finding (with Vaisala Radiotheodolite RT20)

ANTENNAS

Directional UHF antenna (automatic direction control)
Omnidirectional UHF antenna
Portable antenna for UHF and GPS
GPS antenna

GROUND CHECK SET GC25

Compatible with all Vaisala RS92 radiosondes
See separate brochure for details

Telemetry

Frequency range	400 ... 406 MHz, adjustable
Tuning step	10 kHz, user adjustable
Error detection and correction:	Reed-Solomon (with digital radiosondes)
Telemetry range	up to 350 km (with directional antenna and RS92-SGP radiosonde)

Meteorological messages

(AVAILABLE IN STANDARD SOFTWARE):
TEMP FM35-XI, TEMP SHIP FM36-XI, TEMP MOBIL FM38-XI
PILOT FM32-XI, PILOT SHIP FM33-XI, PILOT MOBIL FM34-XI
CLIMAT TEMP FM75-XII
BUFR 3'09'052 (for TEMP data)
BUFR 3'09'050 and BUFR 3'09'051 (for PILOT data)
BUFR 3'09'054 (for CLIMAT TEMP data)

Environmental conditions

INDOOR EQUIPMENT

Operating temperature	10 ... 35°C
Operating humidity	10 ... 90 %
Storage temperature	-40 ... +65°C
Storage humidity	5 ... 95 % RH

OUTDOOR EQUIPMENT

Operating temperature	-40 ... +55°C
Operating humidity	0 ... 100 %
Operating wind speed	0 ... 65 m/s
Operating precipitation	Unlimited
Storage temperature	-50 ... +100°C
Storage humidity	0 ... 100 % RH

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Vaisala Oyj
Helsinki, Finland
Tel. +358 9 894 91
Fax +358 9 8946 2876
metsales@vaisala.com

For other Vaisala locations visit us at:
www.vaisala.com