KEPSI- RTK-GPS POSITIONING SYSTEM

KEPSI is a RTK-GPS measurement device for structural health monitoring and position measuring with cm-level accuracy and 10 Hz update frequency.

The measurement system consists of synchronized receiver units, one located at a fixed position (called base station) and other receivers (called rovers) at the structure under measurement. KEPSI is suitable for monitoring the movement of suspension bridges, chimneys, masts, wind mills, and other high-rise buildings. The measurement results can be examined locally on 7“ touch display of the main unit or alternatively via internet as a webpage presentation. When a pre-determined threshold value is exceeded, KEPSI gives an SMS alarm message.

KEPSI utilizes several types of GNSS satellites, i.e. a combination of GPS and GLONASS or GPS and BEIDOU. Accurate measurements necessitate that the antennas have open sky visibility.

KEPSI receivers, base station and rovers, are connected to the main unit using a RS-485 bus. The antenna with a standard 5 m cable is mounted to a structure using a L-bracket or magnet.

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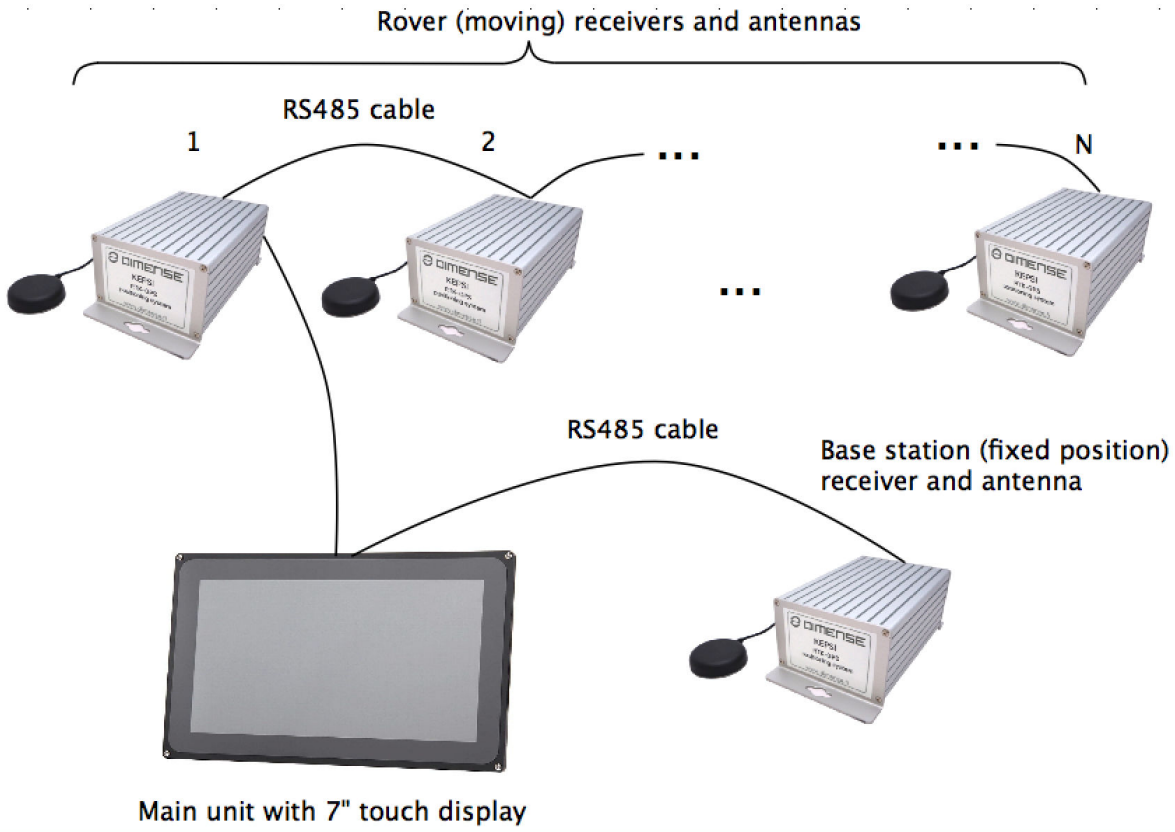
Principle of system configuration



Technical Specifications

Performance:

Sampling rate	10 Hz
Measurement resolution	< 1 cm (sigma value)

Receiver:

Dimensions	165 x 113 x 75 mm (L x W x H)
Power consumption	12 V - 24 V, 100 mA
Antenna cable length	5 m (other cable lengths available)
Data-cable (RS-485)	PUR coating, 6 wires

Main Unit:

Dimensions	201 x 80 x 151 mm (L x W x H)
Power consumption	12 V - 24 V, 500 mA
Connections	RS-485, 4 x USB, Ethernet, 230V/50Hz

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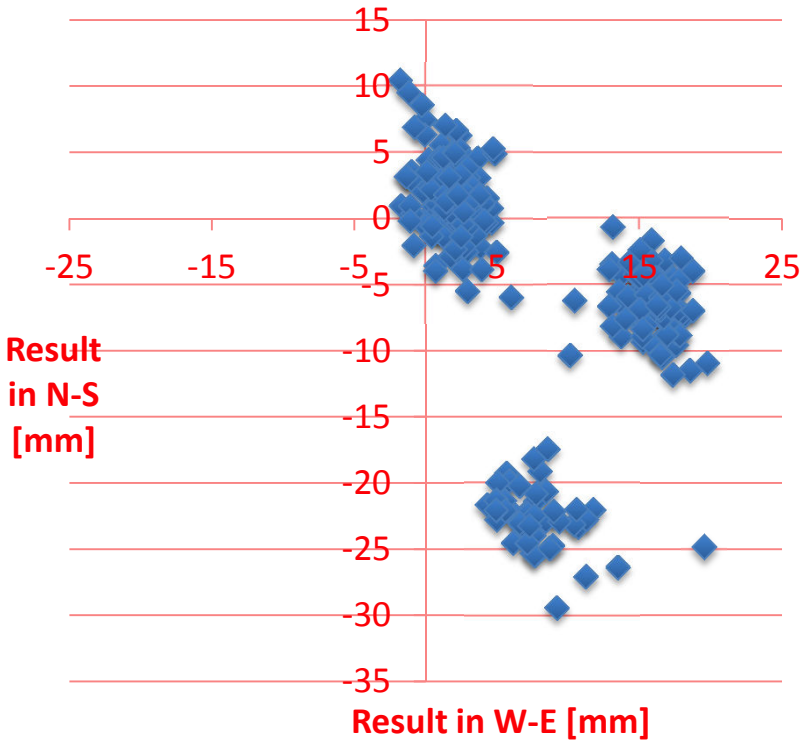
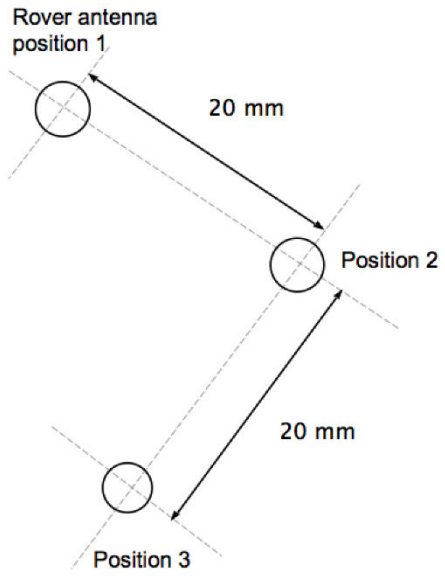
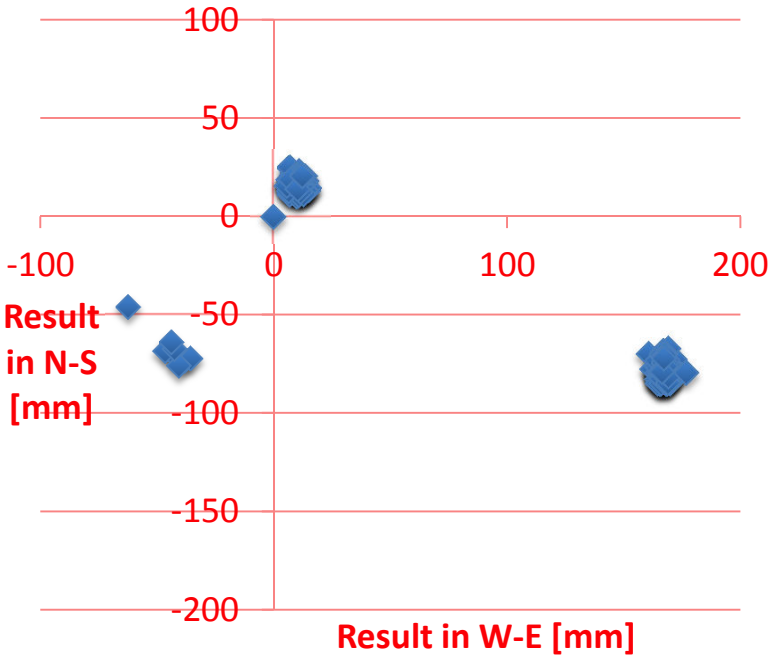
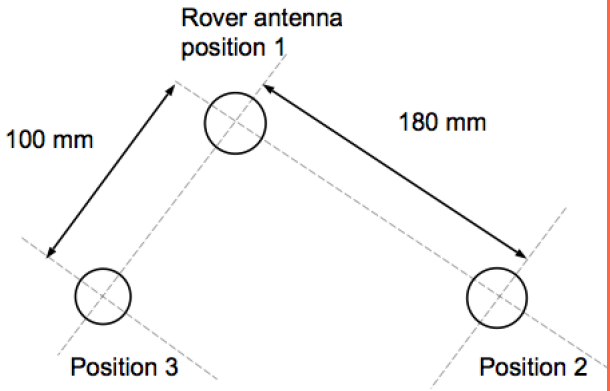
2 examples of moving rover position, measured results









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