

RIEGL VUX-SYS[®]

- *complete miniaturized ALS System*
- *RIEGL VUX-1 lightweight airborne laser scanner integrated*
- *fibre-optic gyroscope and GPS/GLONASS receiver integrated*
- *compact control unit with various interfacing options*
- *mounting options for highly flexible aircraft installation*
- *prepared for remote control via low-bandwidth data link*
- *operates up to 4 digital cameras*

The **RIEGL VUX-SYS** is a complete airborne laser scanning system solution of low weight and compact size for flexible use in UAS/UAV/RPAS, helicopter, gyrocopter and ultra-light aircraft installations. The system comprises the **RIEGL VUX-1** airborne laser scanner, an IMU/GNSS system and a control unit.

The excellent measurement performance of the VUX-1 in combination with a precise fiber-optic gyroscope and GPS/GLONASS receiver results in survey grade measurement accuracy over its full range of applications.

Dedicated interfaces of the VUX-SYS enable full control as well as system status feedback for low bandwidth radio links in UAS/UAV/RPAS systems.

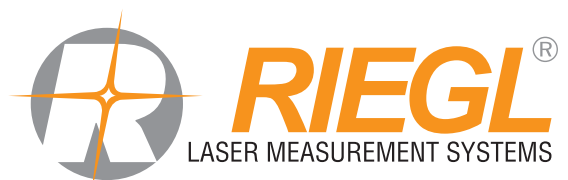
Additionally, the control unit contains interfaces for triggering up to four digital cameras. Precise time stamps of the camera's release-events are stored in the raw scan data stream enabling subsequent combination of point cloud data and imagery.

Typical applications include

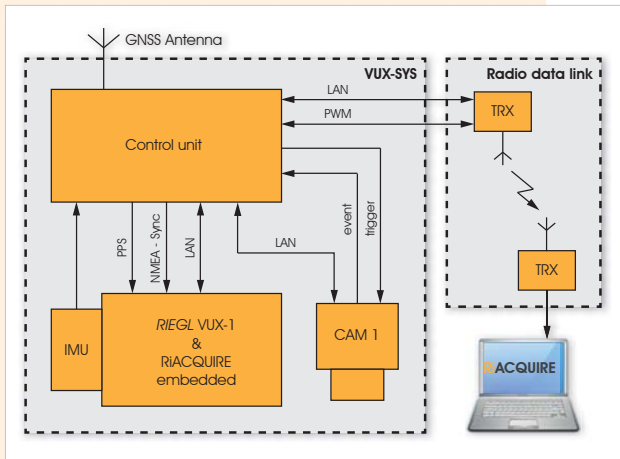
- *Corridor Mapping: Power Line, Railway Track, and Pipeline Inspection*
- *Terrain and Canyon Mapping*
- *Surveying of Urban Environments*
- *Topography in Open-Cast Mining*
- *Precision Agriculture*
- *Archaeology and Cultural Heritage Documentation*
- *Construction-Site Monitoring*



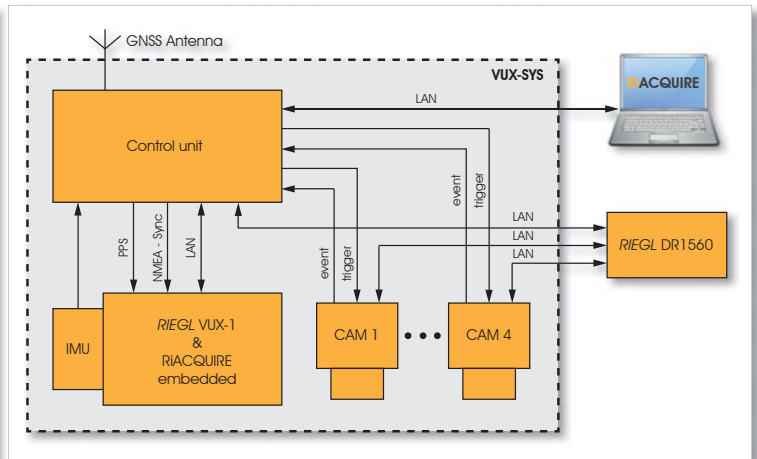
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RIEGL VUX®-SYS Block Diagram

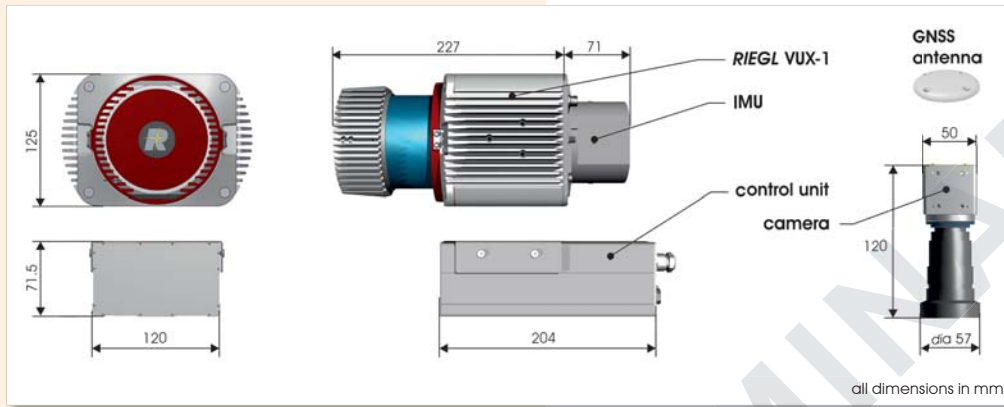


RIEGL VUX-SYS remote control setup



RIEGL VUX-SYS conventional control setup

RIEGL VUX®-SYS Mechanical Drawings



RIEGL VUX-SYS System Components:

- RIEGL VUX-1 UAS LiDAR sensor
- IMU/GNSS unit
- GNSS antenna
- control unit
- up to 4 cameras (optional)
- connecting cables

Technical Data RIEGL VUX®-SYS

Scanner Performance (for details refer to the VUX-1 data sheet)

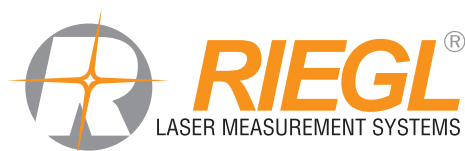
Minimum Range	3 m
Accuracy	10 mm
Precision	5 mm
Laser Pulse Repetition Rate	up to 550 kHz
Max. Effective Measurement Rate	up to 500 000 meas./sec. (@ 550 kHz PRR & 330° FOV)
Scanning Mechanism	rotating mirror
Field of View (selectable)	up to 330° (full range measurement performance)
Scan Speed (selectable)	10 - 200 revolutions/sec, equivalent to 10 - 200 scans/sec
Angle Measurement Resolution	0.001°

Data Interfaces

Configuration	LAN 10/100/1000 Mbit/sec or TTL PWM
Scan Data Output	LAN 10/100/1000 Mbit/sec or USB 2.0
GNSS Interface	Serial RS232 interface for data string with GNSS-time information, TTL input for 1PPS synchronization pulse
Camera	4x trigger and event marker

IMU & GNSS

IMU Accuracy	0.015°
Roll, Pitch	0.035°
Heading	200 Hz
IMU Sampling Rate	0.05 m - 0.3 m
Position Accuracy (typ.)	



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