Highest efficiency and accuracy
For all machine control applications

Leica Geosystems intelligent Construction
Leica Geosystems technology that provides additional, reliable positions in difficult
measuring environments. It provides highest performance and cost savings.
Leica xRTK for difficult GNSS conditions
xRTK allows machine guidance in difficult environments, increasing machine
performance and productivity – all parts of the system fit together seamlessly.
Customer benefits
- Improved sensor integration into the machine solution for even more
  productivity
- Increased performance and productivity – all parts of the system fit together
  seamlessly
- CAN bus protocol specifically designed for GNSS machine control, provides
  robust and reliable communication, even in harsh environments
- Reliable communication thanks to the built-in modems and removable radio
- 3D machine guidance in difficult environments, increasing machine
  productivity
- Graphic 3D Riley Communication gaps up to 30 minutes increasing
  machine uptime
- Leica xRTK technology provides remote access to the machine computer for
  fast, perfect data transfer and support

Maximum performance for all your applications
Your ICON gps 80 Leica Geosystems receiver increases the overall performance
of your machine control system and enables maximum uptime, enabling you to
complete different applications faster at uncompromising quality.

The ICON gps 80 GNSS machine receiver increases the overall performance
of your machine control system and enables maximum uptime, enabling you to
complete different applications faster at uncompromising quality.

When it has to be right.
High performance, Complete solutions, Customer benefits.

Increase the uptime of your dozers, excavators, drilling and shoveling machines, wheel loaders, graders and pavers. Profit from fast, reliable 3D positioning and highly productive operation by a perfectly tuned machine control system.

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Leica iCON gps 80
The most versatile, powerful GNSS machine receiver

- **Supported GNSS Systems**
  - GLONASS
  - Galileo
  - BeiDou

- **RTK Performance**
  - Low accuracy RTK (2/50)
  - SmartLink (L-Band)
  - Network RTK
  - RTK unlimited
  - High accuracy RTK
  - Low accuracy RTK (20/2)

- **Data Recording**
  - Raw data RINEX logging
  - 2 Hz positioning

- **Communication protocols**
  - Radio modems
  - Support of any suitable serial RS232 UHF / VHF radios
  - Satellite3AS in Leica GFU housing, fully sealed and protected, IP67
  - External data links
    - 4G LTE / 3G HSPA / UMTS / 2G GPRS / GSM cellular modem
  - Built In data links
    - Up to 3 real-time output interfaces via independent ports, providing identical or different RTK/RTCM formats

- **Additional functionality**
  - BasePilot functionality (stores up to different 100 base station locations and configurations for quick daily start up without user interaction)

- **GNSS technology**
  - Leica patented SmartTrack+ technology
  - Advanced measurement engine(s)
  - Jamming resistant measurements
  - High precision pulse aperture multipath correlator for pseudorange measurements
  - Excellent low elevation performance

- **Network RTK**
  - Dynamic RTK positioning accuracy, after initialisation
    - Antenna separation 1 m: < 0.18°
    - Antenna separation 2 m: < 0.09°
    - Antenna separation 5 m: < 0.05°

- **Static (phase) with long observations**
  - Horizontal: 3 mm + 0.1 ppm (rms)
  - Vertical: 3.5 mm + 0.4 ppm (rms)

- **Performance specifications**
  - Number of channels: 120 channels for iCG81, 120 channels per antenna (2x) for iCG82
  - Operating temperature: –40 °C to +65 °C
  - Weight: 2'200 g (4.85 lbs) for iCG81, 2'250 g (4.96 lbs) for iCG82
  - Power consumption: iCG81, NTRIP Rover, radio excluded: 8.0 W typically, 24 V @ 333 mA
  - Supply voltage: Nominal 24 V DC, Range 9 – 36 V DC
  - Drops: Withstands 1.2 m drop onto hard surfaces
  - Proof against: water, sand and dust, IP67 according IEC60529 and MIL STD 810F – 506.4-I, MIL STD 810F – 510.4-I and MIL STD 810F – 512.4-I
  - Supported RTK network solutions: iMAX, VRS, FKP

- **GNSS measurements**
  - Fully independent code and phase measurements of all frequencies:
    - GPS: carrier phase full wavelength, Code and phase measurements of all GPS frequencies
    - GLONASS: L1, L2
    - Galileo: E1, E5a, E5b, Alt-BOC
    - BeiDou B1, B2

- **Maximum simultaneous tracked satellites**
  - Up to 60 Satellites simultaneously on two frequencies per antenna

- **Measurement precision and accuracy in position, height and velocity**
  - Position, satellite, radio, modem, battery, Bluetooth®, telematics, memory
  - Several submenus for additional options

- **System installation**
  - Easily Shake-up and data exchange via USB stick
  - Easily communication with handheld or external radio, easy switch between radio and external usage
  - Clearly labelled connections for easy system installation

- **Protection**
  - Protected against blowing rain and dust
  - Protected against temporary submersion into water (max. depth 1 m)

- **Compliance**
  - Fullfills EN13309
  - Standard of compliance: Compliance with ISO17123-8