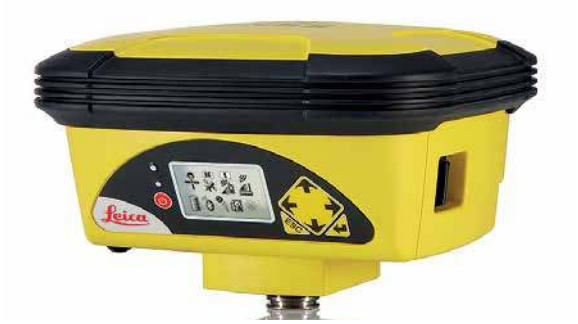
Leica iCON gps 60

Smart positioning on any construction site



Leica iCON gps 60 is a versatile SmartAntenna for all construction positioning tasks. Featuring superior GNSS technology and various integrated communication options, it meets all your requirements for reliable and accurate measurements. Its intuitive display shows full status information of the instrument, simplifying operation and configuration. Leica iCON gps 60 also offers exceptional network capabilities allowing you to use RTK network services (Leica SmartNet and other networks) for highly reliable, improved GPS positions.

- Superior GNSS Technology for maximum accuracy and reliability. Features Leica SmartTrack+ and SmartCheck+ and Leica xRTK.
- Future-proof satellite tracking. Works with all existing and future satellite systems.
- SmartLink – bridges RTK communication gaps up to 10 minutes
- Multi-purpose GPS solution. Can be used as construction site GNSS Base, Rover or NetRover, in supervisor vehicle on site and entry level machine control mounted inside a machine to increase machine productivity
- Unique communication flexibility, featuring integrated radio, modem and Bluetooth®.
- System integration made easy through use of platform independent SDK (Software Development Kit) bringing swift configuration to all
- Integrated NTRIP Server and Caster for Internet based Reference Station.
- No controller required for base station set-up means you need less hardware.
- Unique flexible software licencing and feature upgrade concept. You can order packages or individual licences when you need them, investing when you need to.

Leica iCON gps 60
One instrument for many tasks

Perform many positioning tasks yourself, easily and quickly. Check grade or cut & fill, stake-out points and lines and as built check.

Leica iCON gps 60 is the perfect mobile base station for your construction site. You don't need a controller for base station set-up. Stream corrections over the Internet without Radio.

Save time and increase your productivity monitoring the grade from your supervisor vehicle on site.

Use Leica iCON gps 60 for easy, single grade machine control applications, further increasing the value of the product and your investment.

	Leica iCON gps 60 SmartAntenna					
	Leica iCG60 Entry	**Leica iCG60 Vehicle**	**Leica iCG60 Base**	**Leica iCG60 Network**	**Leica iCG60 Performance**	**Leica iCG60 Advanced**
SUPPORTED GNSS SYSTEMS						
GPS L2	•	✔	✔	✔	✔	✔
GLONASS	•	✔	•	•	✔	✔
GPS L5	•	•	•	•	•	✔
Galileo	•	•	•	•	•	✔
BeiDou	•	•	•	•	•	✔
RTK PERFORMANCE						
Low accuracy RTK (50/2)	•	✔	•	✔	✔	✔
High accuracy RTK	•	•	•	✔	✔	✔
RTK unlimited	•	✔	•	✔	✔	✔
Network RTK	•	✔	•	✔	✔	✔
SmartLink Fill	•	•	•	•	•	✔
POSITION UPDATE & DATA RECORDING						
10 Hz positioning	•	✔	✔	✔	✔	✔
20 Hz positioning	•	•	•	•	•	✔
Raw data RINEX logging	•	•	✔	•	✔	✔
NMEA Output	•	•	•	•	•	✔
ADDITIONAL FEATURES						
RTK Reference Station functionality	•	•	✔	•	✔	✔
Leica ConX	•	•	•	•	•	•

✔ Standard / • Optional

GNSS PERFORMANCE	GNSS technology	Leica patented SmartTrack+ technology: • Advanced measurement engine • Jamming resistant measurements • High precision pulse aperture multipath correlator for pseudorange measurements • Minimum acquisition time
	Number of channels	555 channels
	Maximum simultaneous tracked satellites	Up to 60 satellites simultaneously on two frequencies
	Satellite signals tracking	• GPS: L1, L2, L2C, L5 • GLONASS: L1, L2 • Galileo (Test): GIOVE-A, GIOVE-B • Galileo: E1, E5a, E5b, Alt-BOC • BeiDou B1, B2
	GNSS measurements	Fully independent code and phase measurements of all frequencies: • GPS: carrier phase full wave length, Code (C/A, P, C Code) • GLONASS: carrier phase full wave length, Code (C/A, P narrow Code) • Galileo: carrier phase full wave length, Code • BeiDou: carrier phase full wave length, Code
	Reacquisition time	< 1 sec
GNSS ANTENNA	GNSS antenna options	• Fully integrated GNSS antenna • External GNSS antenna connector (Type TNC)
	External GNSS antenna options	• CGA100: GPS L1, L2, L2C, L5 • GLONASS: L1, L2, L3 • Galileo: E1, E5a, E5b, E6, Alt-BOC • BeiDou: B1, B2, B3
MEASUREMENT PERFORMANCE & ACCURACY	**Accuracy (rms) with real-time (RTK)[1)]**	
	Single baseline (< 30km)	Horizontal: 8 mm + 1 ppm (rms), Vertical: 15 mm + 1 ppm (rms)
	Accuracy (rms) with post processing[1)]	
	Static (phase) with long observations	Horizontal: 3 mm + 0.5 ppm (rms), Vertical: 3.5 mm + 0.5 ppm (rms)
	Static and rapid static (phase)	Horizontal: 3 mm + 1 ppm (rms), Vertical: 5 mm + 1 ppm (rms)
	On-the-fly (OTF) initialisation	
	RTK technology	Leica SmartCheck+ technology
	Reliability of OTF initialisation	Better than 99,99%
	Time for initalisation	Typically 4 sec[2)]
	Network RTK	
	Network technology	Leica SmartRTK technology
	Supported RTK network solutions	iMAX, VRS, FKP
	Supported RTK network standards	MAC (Master Auxiliary Concept) approved by RTCM SC 104
HARDWARE	**Weight & Dimensions**	
	Weight (iCG60)	1450 g (3.19 lb)
	Weight	3200g (7,05 lb) Standard RTK Network Rover, incl. iCG60, CC80 Controller with Bracket, Pole, Battery
	Dimensions	197 mm x 197 mm x 130 mm (7,76 in x 7,76 in x 5,12 in)
	Environmental specifications	
	Operating temperature	–40 °C to +60 °C (–40 °F to +140 °F)
	Storage temperature	–40 °C to +85 °C (–40 °F to +185 °F)
	Humidity	100%, compliance with ISO9022-12-04 and MIL STD 810F – 507.4-I
	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, Protected against blowing rain and dust, Protected against temporary submersion into water (max. depth 1 m)
	Vibration	MIL-STD-810F, Figure 514.5C-3
	Shock	40g - 6msec; compliance ISO 9022-31-06, No loss of lock to satellite signal when used on a pole set-up and submitted to pole bumps up to 150 mm
	Drops	Withstands 1.2 m drop onto hard surfaces
	Topple over	Withstands topple over from a 2m pole onto hard surfaces
	Power & Electrical	
	Supply voltage	Nominal 24 V DC, Range 9.0 – 28 V DC
	Power consumption	Typically 6 W
	Internal power supply	1x recharge & removable LI-Ion battery, 2.6 Ah, 4.4 Ah or 6.0 Ah / 7.4 V, fit into receiver
	Internal power supply, operation time	• 5:20 h receiving RTK data with standard radio [3)] • 4:40 h transmitting RTK data with standard radio [3)] • 5:00 h RTK via built-in HSPA connection [3)]
	External power supply	Rechargeable external NiMh battery 9 Ah / 12 V; with voltage peak protection, Fullfils EN13309
	Certifications	Compliance to: FCC/IC Class B, CE, EN13309, RCM, ARIB STD-T66, RoHS, WEEE, ACPEIP
MEMORY & DATA RECORDING	**Memory**	
	Internal memory	Built-in memory, 466 MB
	Data capacity	466 MB is typically sufficient for about GPS & GLONASS (8+4 satellites) 3'100 h raw data logging at 15 s rate
	Data recording	
	Type of data	Onboard recording of RINEX data
	Recording rate	Up to 20 Hz

INTERFACE	Buttons	• ON / OFF button • 6 function buttons (arrow keys – up/down/left/right, Enter, Esc)
	Display	High resolution, 1.8" gray scale display with adjustable backlight: • Provides full receiver status on main screen (position, satellite, radio, modem, battery, Bluetooth®, telematics, memory) • Several submenues for additional details • Various configurations in submenues, e.g. radio channel • Start Base Station with "Here" or type in coordinate • Start and configure raw data logging
	LED status indicator	1 × LED for detailed power status
	Additional functionality	BasePilot functionality (stores up to different 100 base station locations and configurations for quick daily start up without user interaction)
COMMUNICATION	Communication ports	1x serial RS232 Lemo, PWR in, 12V PWR out 1x USB Host 1x UART serial & USB (for removable internal RTK devices) 1x TNC for external GNSS Antenna 1x Bluetooth® port, Bluetooth® v2.00+ EDR, class 2
	Number of simultaneous data links	Up to 3 real-time output interfaces via independent ports, providing identical or different RTK/RTCM formats
	Built In data links	
	Radio modems	• Optional additional fully integrated, fully sealed receive / transmit radios • User exchangeable device • SATEL M3 TR4: 403 – 470 MHz; up to 1.0 W output power; Pac-crest 4FSK; GMSK & FST; Trimble T & P; Satel 3AS, 8FSK & 16FSK modulation • Intuicom; 902 – 928 MHz (license free in North America); up to 1.0 W output power
	Radio modem antenna	External antenna connector (Type QN)
	4G LTE / 3G DC-HSPA+ / HSPA+ / HSPA / UMTS (WCDMA)	• Built-in cellular modem as default • User exchangeable SIM card • 5-Band LTE: Band 1, 3, 7, 8, 20 • 6-Band DC-HSPA+ / HSPA+ / HSPA / UMTS (WCDMA): Band 1, 2, 3, 4, 5, 8 • Up to 100 mbps downlink speed
	4G LTE / 3G HSPA / UMTS / GSM cellular modem antenna	Integrated GSM / UMTS / HSPA / LTE antenna
	External data links	
	Radio modems	• Support of any suitable serial RS232 UHF / VHF radios
	Communication protocols	
	Real-time data formats for data transmission	Leica, Leica 4G, CMR, RTCM 3.1, RTCM 3.2 MSM 3 & 5
	Real-time data formats for data reception	Leica, Leica 4G, Leica Lite, CMR, CMR+, RTCM v2.3, RTCM 3.1, RTCM 3.2 MSMx 3 & 5
	Web based protocol	NTRIP: receive network corrections; built-in NTRIP Server and Caster to stream local corrections to multiple RTK rovers

Leica iCON site/ iCON build
Easy-to-use construction field software. Designed for construction workers.

Leica iCON CC80
Robust, extremely lightweight tablet with multi-touch-screen and versatile communication capabilities.

Leica iCON gps 70 T
Ultimate GNSS Rover delivering permanent tilt compensation and resistance to magnetic interferences.

Leica iCON gps 80
Versatile and powerful GNSS receiver combined with CGA100 GNSS antennas for increased performance of your iCON machine control solution.

Swiss Technology
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- when it has to be **right**

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