

System 310

Landforming and Water Management

New X30 Control Console
(ordered separately)



CR-G5 Dome Antenna

PG-A1 Antenna

HiPer AG Mobile
Base Station

MC-R3 Receiver



Time-tested, field-proven Land Leveling,
Surveying, and Field Design System

Water Management is an essential and integral
part of today's precision farming practices.
Effective water management makes the most
efficient use of the world's most precious resource
while protecting the environment.

- **Single or dual scraper configurations**
- **Perform field surveys in minutes**
- **Multiple-constellation GNSS satellite reception**
- **24/7, day or night operation**
- **Large 12" display, easily readable at night or in bright sunlight**
- **Easy-to-use AGForm-3D field design and survey software calculates best-fit slopes and reduces yardage**
- **Industry proven, easy-to-use interface**

System 310 Landforming and Water Management

Landforming requires a degree of elevation accuracy that many GPS manufacturers cannot meet. Topcon leads the world in multiple-constellation GNSS positioning and the most advanced machine control technology available.

With GPS, move the dirt once!

System 310 helps improve surface drainage and irrigation efficiency. Multiple-constellation reception provides maximum accuracy, 24/7 operation and takes precision landleveling beyond the limits of laser control. GPS follows the earth's curvature, so there's no time spent blending multiple laser setups. No time spent moving laser tripods or trailers, calibrating, aligning, or adjusting slopes to match grades. Just press "power" and start moving dirt! GPS is unaffected by temperature change, so beam drift and refraction are issues of the past.

HiPer AG Mobile RTK Base Station

The HiPer AG functions as a mobile, cable-free base, a fixed base station (with optional external GPS or radio antennas), or as a surveying rover. For landleveling, HiPer AG provides GNSS corrections that enable high-accuracy Z-axis positioning. While the best Z-axis results are obtained within 2.5+ miles, centrally placing the HiPer AG in a field or project allows you to grade over 12,000 acres from one setup. The compact unit integrates a receiver, radio, antennas, and rechargeable battery, so there's no messy cables. Its powerful 40 channel GNSS board operates at up to 20Hz while multipath mitigation and co-op tracking provide under-canopy and low signal strength reception. For surveying, the receiver provides the functionality, and integrity needed for fast and easy data collection.



X30 Control Console



The X30 multi-function, color touch-screen controller displays real-time elevation, maps, position, and menus. System 310 lets you survey, create cut/fill maps and start grading without leaving the cab. Best-fit calculations can reduce yardage to be moved 10% or more versus traditional hand-calculated laser surveys. Or, just enter desired single or dual slopes. System 310 instantly creates a cut/fill map, which means productivity starts immediately – even with inexperienced operators.

MC-R3 Receiver

The rugged housing integrates the receiver, radio, and controllers and provides multiple I/O ports for maximum connectivity. A variety of modems are available. The front panel provides status indicators and function keys for quick performance and system checks. With robust processing capabilities and programmable valve drivers, the MC-R3 provides smooth hydraulic control for cut/fill, grading, and surveying. Removable magnetic or permanent mounting.



Dual Frequency, Dual Constellation Antennas

The PG-A1 features an integrated ground plane and precision micro-centering technology to reduce multipath errors. The optional CR-G5 dome antenna incorporates an internal choke ring for exceptional performance in more demanding multipath-prone environments and features an enhanced LNA which allows operation with longer cables.



Specifications

CR-G5 Dome Antenna

Frequency	L5, E5B, E3, L2, G2, E4, E6: 1230 MHz ± 70 MHz E2, L1, E1, G1: 1565 MHz ± 50 MHz
LNA Gain	48 dB (typical)
Power	Input Voltage +3 to +12 VDC, 100 mA (typical)
Weight	13.23 lbs. (6.0 kg) (with spherical dome)
Dimensions (w/dome)	14.96" dia. x 11.5" height (380 x 292 mm)
Connector	N-type female

PG-A1 Antenna

Frequency	Range 1: 1217-1260 MHz Range 2: 1565-1620 MHz
LNA Gain	32 ± 2 dB, output 50 Ohm
Power	+2.7 to +12 VDC
Weight	1.08 lb. (492 grams)
Dimensions	5.57" x 5.57" x 2.11" (141.6 x 141.6 x 53.7 mm)
Connector	TNC female

MC-R3 Receiver/Controller

Power	+10 to +30 VDC, 3A (typical) 18.5A (max)
Power Out	sensors 10A max, valves 8A max, modem 12V/500MA max.
Weight	7.5 lbs. (3.4 kg)
Dimensions	10.5"w x 7.8"d x 4.4"h (266.7 x 198.1 x 111.7 mm)
Connectors	2 ea. DRC23-40P Deutsch, 2 ea. type N (optional GPS) 1 ea. RP-TNC (optional radio), 1 ea. TNC (optional LPS)
Ports	6 ea. RS-232, 2 ea. CAN, 2 ea. Ethernet, 1 ea. RS-485 1 ea. EDGE (optional SIM card), 1 ea. I ² C Smart Knob™

HiPer AG Base Station GPS & GLONASS

Tracking:	40 channels L1/L2 C/A, P-Code, Full Code & Carrier data
Power	+6 to +28 VDC, internal battery Li-ion (4400mA/7.4V)
Weight	3.85 lbs. (1.75 kg)
Dimensions	6.26" x 3.78" x 6.81", (159 x 96 x 173 mm)
Connectors	2 ea. 7-pin ODU, 2 ea. 5-pin ODU, 1 ea. BNC, 1 ea. TNC
Correction Accuracy	Static: 3mm+0.5ppm x D hor., 5mm+0.5ppm x D vert. RTK: 10mm+1ppm x D hor., 15mm+1ppm x D vert. DGPS: 0.5m Real time

AGForm-3D Survey and Design Software

Intuitive and easy-to-use solution for improving irrigation and drainage. AGForm-3D lets you break fields into multiple sections to reduce yardage, shorten hauls and minimize topsoil cuts. Design sections as best-fit, single-slope, or dual-slope planes, then transfer files to the System 310 controller for automatic GPS control.



AGForm-3D's powerful non-planar design capability is perfect for solving surface drainage problems. Enter desired slopes and AGForm-3D creates 3D designs that ensure your fields will drain. Retain natural slopes while smoothing highs and lows that impede water flow.

An ideal companion for your System 310, AGForm-3D with a HiPer AG gives you a complete ag survey system and lets you perform fast, accurate, surveys from one setup, even with large elevation changes, irregular shapes, dust, wind, or fog.

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