



Topcon Machine Control Portfolio

Version 3.0

Digitization of construction. Technology and workflows to improve Infrastructure.









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MC-X Concept



MC-X Components



MC-Max Earthmoving



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MC-Mobile



Management & Integration











Multi-constellation, wired and wireless GNSS sensors



Scalable Capabilities



Greater accuracy across operating conditions



Modular Components



LPS and 2D Options











MC-X Platform – What does it offer?



















Multi-constellation, wired and wireless GNSS sensors

New receivers track all major constellations, including BeiDou and Galileo.



Greater accuracy across operating conditions

Advanced processing allows higher speeds and greater accuracy, a wider range of operating conditions and higher reliability.



Modular Components

Built as a modular platform, MC-X can scale as you need, and as additional equipment is added



Scalable Capabilities

Use the same components for a wider range of applications depending upon the configuration, including 2D indicate or automatic, indicateonly 3D and full-auto 3D.







MC-X Product lines





























- Indicate and Automatic
- For all machine types







Software

3D-MC - Pocket 3D





MC-Mobile



- Workflow-based
- Measure, Design, Build
- Indicate
- Mini-Ex, Excavator, CTL and SSL











Controllers and Communication

















MC-X1 Controller

The MC-X1 is an ECU with high-processing power capable of simple slope control and 2D to fully automatic 3D control.

The MC-X1 provides ultimate flexibility including Bluetooth communication.



UR-S1 UHF/FH915 Radio

External radio with internal UHF and FH915 capabilities.



SL-25 4G Modem

The SL-25 is standalone
Sitelink3D modem and enables
a connected control system with
4G connectivity.
The SL-25 is ideal for network

The SL-25 is ideal for network corrections such as Topnet Live. The unit utilizes the same housing as the MC-X1 and will be introduced with 4G capabilities*.



MC-X3 Controller, UHF Radio, 4G

The MC-X3 is an ECU with a powerful processor capable of simple slope control and 2D to fully automatic 3D control. It also houses integrated UHF, spread spectrum, Bluetooth and cellular communications*.

*Cellular services may require an additional fee.







Machine Control Displays

















GX-75 10,4 Inch - Windows



GX-90 10,1 Inch - Linux









Currently available for excavators.







GNSS-Receivers

GR-i3

GNSS Receiver

GPS, Glonass, Galileo, BeiDou, QZSS Modular to combine it with additional sensors or to mount it on a range pole























GNSS Receiver

GR-i3 with fixed holder to use on machines





GPS, Glonass, Galileo, BeiDou, **QZSS**









GR-i3 Scalable























GR-i3 with PZS-i3



GR-i3 with RP-i3 and PZS-i3











Sensors



















- Inertial Measurement Unit
- Detecting changes in pitch, roll, and yaw
- Used for all machines except rollers

RS-1



- Rotation sensor
- Measures the rotation of the blade
- Used for motor graders

WS-i3



- Wire sensor
- Measures the vertical movement of the side blade (milling machines) or screed width (paver)
- Used for cold milling machines and asphalt pavers

ST-2+, ST-3





- Sonic Trackers
- Measures the distance to a surface, string line or curb
- Used for dozers, motor graders, CTL's/SSL's and asphalt pavers

To cover all 2D and 3D applications on all machine types











MC-Max Excavator – LPS

















The A7R prism is available for LPS-only machines.

The RP-i3 is also available for LPS machine control.



Robotic total station or Layout Navigator to position the machine on the jobsite.



The 3D LPS solution can be easily configured for GNSS. The A7R can be removed and replaced with the GR-i3F on the mast. Additionally, the RP-i3 prism can be combined with the GR-i3 for GNSS capability.



Compact, safety-certified valve controller and optional joystick (required for semi-automatic control) with user configurable buttons.



The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



MC-X1 control unit is the heart of machine control. Through data processing from different sensors (positioning data, IMU data), the MC-X1 is capable of everything from simple slope control and 2D to fully automatic 3D control.

2D components may be used in conjunction with LPS machine files and configurations. Additionally, the 2D sensors may be used without 3D elevation sensors for 2D-only applications.







MC-Max Excavator – GNSS





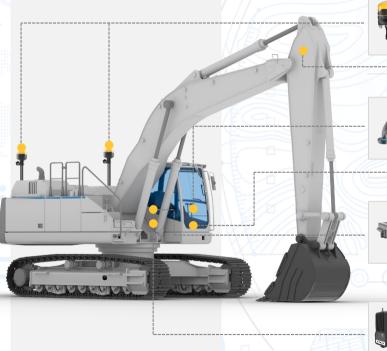














GR-i3/F supports multiple constellations.



MC-Max excavator system utilizes TS-i4 sensors. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.



Compact, safety-certified valve controller and optional joystick (required for semi-automatic control) with user configurable buttons.



The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



MC-X1 control unit is the heart of machine control. Through data processing from different sensors (positioning data, IMU data), the MC-X1 is capable of everything from simple slope control and 2D to fully automatic 3D control.



Topnet Live

Topnet Live provides a wide range of global GNSS correction services, with a variety of subscription packages.

2D components may be used in conjunction

with GNSS machine files and configurations.

3D elevation sensors for 2D-only applications.

Additionally, the 2D sensors may be used without

The UR-S1 radio can communicate via UHF/915 SS with local base stations. With the 4G-modem SL-25. network corrections can be used.



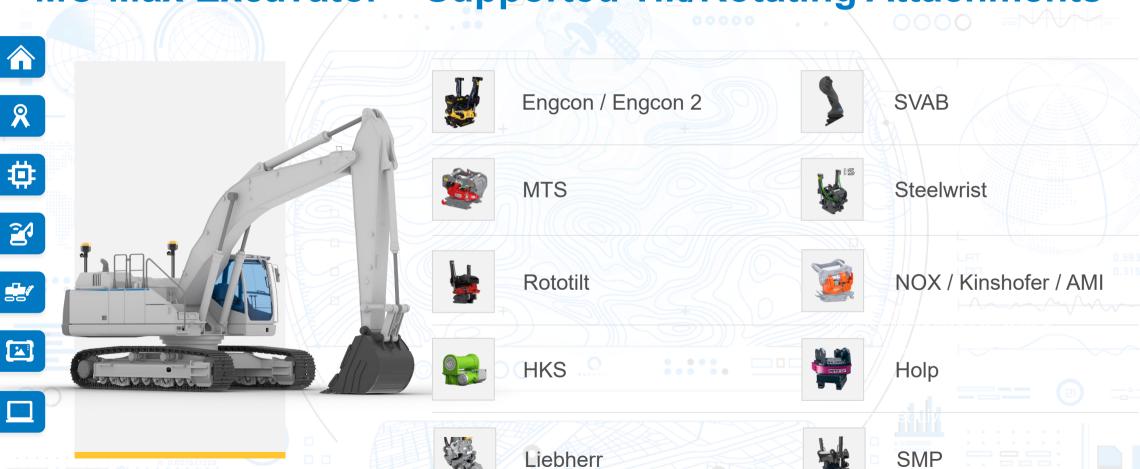




Please refer to product documentation for the

models currently supported.

MC-Max Excavator – Supported Tilt/Rotating Attachments





MC-Max Dozer - LPS





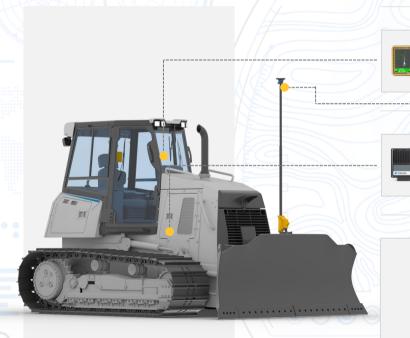


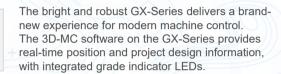


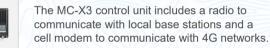
















The RP-i3 or A7R prism is available for LPS-only machines.



The 3D LPS solution can be easily configured for GNSS. The A7R can be removed and replaced with the GR-i3F on the mast. Additionally, the RP-i3 prism can be combined with the GR-i3 for GNSS capability.



Robotic total station or Layout Navigator to position the machine on the jobsite.

















MC-Max Dozer - GNSS





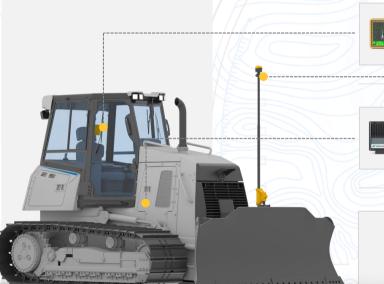












The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



GR-i3/F supports multiple constellations.

The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.





Topnet Live provides a wide range of global GNSS correction services, with a variety of subscription packages.







MC-Max Dozer - Mastless GNSS

















The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



GR-i3/F supports multiple constellations.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.





Topnet Live provides a wide range of global GNSS correction services, with a variety of subscription packages.



MC-Max Grader - LPS





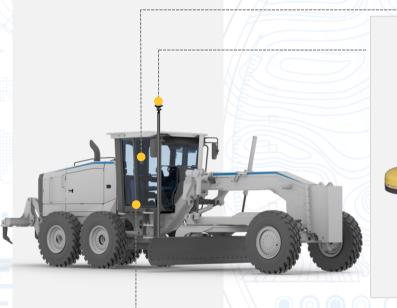






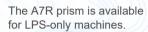














The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.

The 3D LPS solution can be easily configured for GNSS. The A7R can be removed and replaced with the GR-i3/F on the mast.



Robotic total station or Layout Navigator to position the machine on the jobsite.

The RP-i3 is also available for LPS machine control.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.

2D components may be used in conjunction with LPS machine files and configurations. Additionally, the 2D sensors may be used without 3D elevation sensors for 2D-only applications.







MC-Max Grader - GNSS





















GR-i3/F supports multiple constellations. With a GR-i3 easy switch between mmGPS, LPS or GNSS.



The RS-1 rotation sensor measures the rotation of the blade.



The bright and robust GX-Series delivers a brandnew experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



MC-Max Grader system utilizes TS-i4 sensors. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.

2D components may be used in conjunction with GNSS machine files and configurations. Additionally, the 2D sensors may be used without 3D elevation sensors for 2D-only applications.



Topnet Live provides a wide range of global GNSS correction services, with a variety of subscription packages.



MC-Max Grader - Millimeter GPS

















The Millimeter GPS solution is configurable with the vibration mount, PZS-i3 and GR-i3 on the mast. In addition, a RP-i3 can be mounted for LPS usage.



The bright and robust GX-Series delivers a brand-new experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.

2D components may be used in conjunction with GNSS machine files and configurations. Additionally, the 2D sensors may be used without 3D elevation sensors for 2D-only applications.







Intelligent Soil Compaction





















GR-i3/F supports multiple constellations.



The bright and robust Android Tablet* is used for compaction. The 3D-MC software on the tablet provides real-time position and project design information as well pass count and stiffness information in real-time

It also enables network corrections and Sitelink3Dconnection.





The compaction sensor is used to continuously measure and evaluate the frequency spectrum of the drum vibration.



The UR-S1 radio can communicate via UHF/915 SS with local base stations.





An active Sitelink3D connection is required for Intelligent Compaction.



Topnet Live

Topnet Live provides a wide range of global GNSS correction services, with a variety of subscription packages.



Mobile Weighing systems





























- Highly accurate and easy to use
- Reduce vehicle movement. fuel usage and machine & tire wear
- Accurate loads first time
- Safety first. No more overload
- Live and dynamic weighing capability
- Accurate record keeping and reporting
- Ticket printing and reporting























MC-Max Milling Machine – LPS





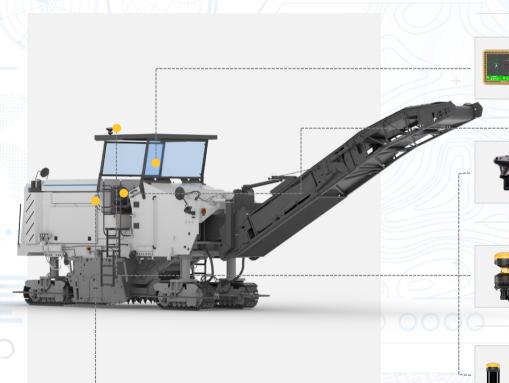




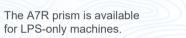


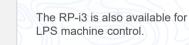


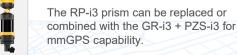




The bright and robust GX-Series delivers a brand-new experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.









Robotic total station to position the machine on the jobsite.



MC-Max Milling machines system utilizes TS-i4 sensors to measure the body cross slope. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.

LPS milling is suitable for urban areas, tunnels, under bridges, wooded areas, or any other locations without satellite coverage. For this configuration you should plan for at least 3 total stations.







MC-Max Milling Machine - Single / Dual Millimeter GPS







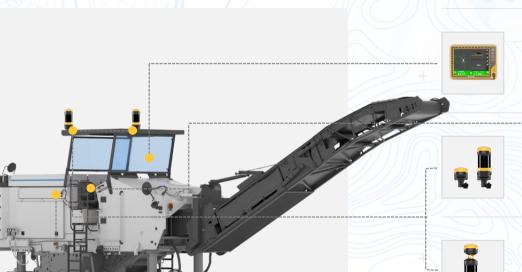




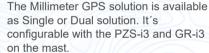








The bright and robust GX-55 delivers a brand-new experience for modern machine control. The 3D-MC software on the GX-55 provides real-time position and project design information, with integrated grade indicator LEDs.



The PZS-i3 can be combined with the RP-i3 for LPS configuration.



MC-Max Milling machines system utilizes TS-i4 sensors to measure the body cross slope. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.

mmGPS is suitable for open areas with satellite coverage. For this configuration you should plan for at least 3 zone lasers (LZ-T5) to allow constant milling.



MC-Max Milling Machine – RD-MC LPS





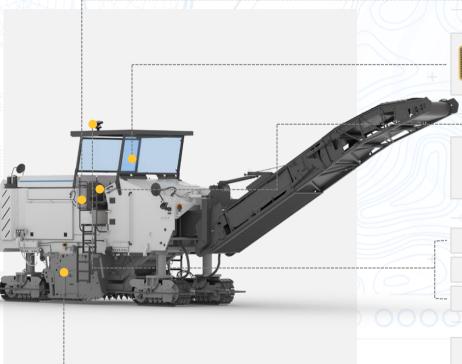








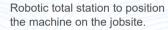




The bright and robust GX-Series delivers a brand-new experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.





MC-Max Milling machines system utilizes TS-i4 sensors to measure the body cross slope. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.



The A7R prism is available for LPS-only machines.

The RP-i3 is also available for LPS machine control.

The RP-i3 can be combined with a GR-i3 for RD-MC GNSS solution. In this case a second GR-i3/F is required.



For Generic installations, the WS-i3 Wire sensor must be mounted on the side blades.

LPS milling is suitable for urban areas, tunnels, under bridges, wooded areas, or any other locations without satellite coverage. For this configuration you should plan for at least 3 total stations to allow constant milling. This system is for variable depth milling.







MC-Max Milling Machine – RD-MC GNSS





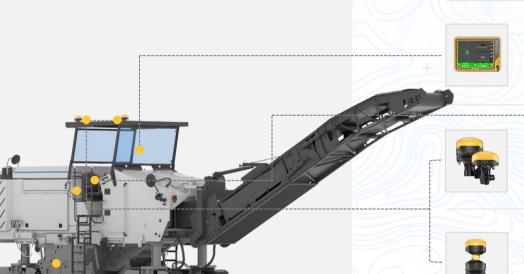












The bright and robust GX-Series delivers a brand-new experience for modern machine control. The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.

GR-i3/F supports multiple constellations.



The GR-i3 can be combined with a RP-i3 for LPS solution.



RD-MC allows you to mill without any optical components - the most effective variant and unique to Topcon. The prerequisite is an accurate mesh of the existing surface. This system is for variable depth milling.

MC-Max Milling machines system utilizes TS-i4 sensors to measure the body cross slope. TS-i4 sensors are IMUs that are not affected when starting, stopping or turning.

The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.



For Generic installations, the WS-i3 Wire sensor must be mounted on the side blades.









MC-Max Asphalt Paver – Single LPS

Recommend up to a max. screed width of 6.5 - 7 meter / 21 - 23 ft















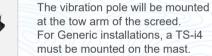




The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



The LPS solution can get combined with an additional GR-i3/F to steer the driving direction of the paver (currently only for Voegele paver with Navitronic Plus).





Robotic total station or Layout Navigator to position the machine on the jobsite.

Single LPS paving is suitable for

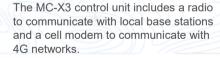
bridges, wooded areas, or any other

locations without satellite coverage.

For this configuration you should plan for at least 3 total stations to allow

urban areas, tunnels, under

constant paving.





The RP-i3 can also be used in lieu of A7R prism.

The RP-i3 prism can be replaced or combined with the GR-i3 + PZS-i3 for mmGPS capability.











MC-Max Asphalt Paver – Single Millimeter GPS

Recommend up to a max. screed width of 6.5 – 7 meter / 21 – 23 ft















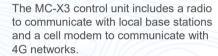




The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.

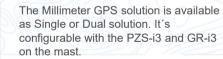


The single mmGPS solution can get combined with an additional GR-i3/F to steer the driving direction of the paver (currently only for Voegele paver with Navitronic Plus).





The vibration pole will be mounted at the tow arm of the screed. For Generic installations, a TS-i4 must be mounted on the mast.





The PZS-i3 can be combined with the RP-i3 for LPS configuration.

mmGPS is suitable for open areas with satellite coverage. For this configuration you should plan for at least 3 zone lasers (LZ-T5) to allow constant paving.







MC-Max Asphalt Paver – Dual Millimeter GPS



















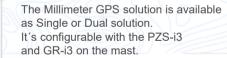
The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LEDs.



The vibration pole will be mounted at the tow arm of the screed. For Generic installations, a TS-i4 must be mounted on each mast.



The MC-X3 control unit includes a radio to communicate with local base stations and a cell modem to communicate with 4G networks.





The PZS-i3 can be combined with the RP-i3 for LPS configuration.

mmGPS is suitable for open areas with satellite coverage. For this configuration you should plan for at least 3 zone lasers (LZ-T5) to allow constant paving.







MC-Max Asphalt Paver – RD-MC





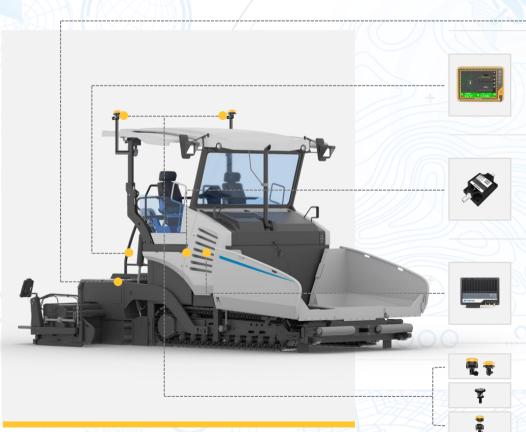












The bright and robust GX-Series delivers a brand-new experience for modern machine control.

The 3D-MC software on the GX-Series provides real-time position and project design information, with integrated grade indicator LFDs



Sonic trackers measures the distance to the surface to calculate the variable paving thickness.

Robotic total station or Lavout

on the jobsite.

Navigator to position the machine

RD-MC allows you to pave without

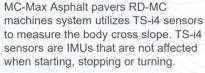
any optical components - the most

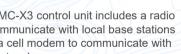
accurate mesh of the existing surface. This system is for variable thickness paving without milling or after variable

depth milling for thickness paving only.

effective variant and unique to

Topcon. The prerequisite is an

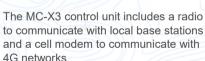




GR-i3/F supports multiple constellations.

The A7R prism is available for LPS-only machines.

Additionally, the RP-i3 prism can be combined with the GR-i3 for easy switch between GNSS and LPS.















Intelligent Asphalt Compaction











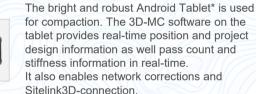








GR-i3/F supports multiple constellations.

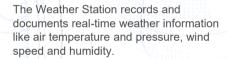




The UR-S1 radio can communicate via UHF/915 SS with local base stations...



The compaction sensor is used to continuously measure and evaluate the frequency spectrum of the drum vibration.





MC-X1 control unit is the heart of machine control and can process the data from the temperature compaction sensors.





An active Sitelink3D connection is required for Intelligent Compaction.



The temperature sensor measures the surface temperature of the asphalt in front of and behind the roller.













MC-Mobile for Compact machines



















TS-i4 sensors measure body cross slope and are IMUs that are not affected when starting, stopping or turning.



MC-X1

A high-powered ECU capable of simple slope control and 2D to fully automatic 3D control.



Portable and affordable Android tablet*

Android wireless operator tablet for machine operation and survey.



Layout Navigator

LPS optical positioning with mm-level precision.



GR-i3/F or Prism

GNSS or LPS positioning sensors.







MC-Mobile Solution for Mini excavators





















Layout Navigator with

LPS optical positioning

with mm-level precision.

receiver - 2D elevation

positioning sensors

LS-B20W laser

Prism or GR-i3 on pole -













MC-Mobile for Compact Track Loaders



















3D Positioning with LPS



Common for all configurations





3D Positioning with dual or single GNSS













MC-Mobile Solution for Compact Track Loaders



to fully automatic 3D control.







MC-Mobile CTL – Supported Attachments













MC-Mobile CTL supports any Generic non-CAN Box Blade.





- Level Best
- Kubota
- SharpGrade
- CAT
- Bobcat
- Hitchdoc



- Level Best
- SharpGrade
- CAT
- Burchland





MC-Mobile CTL supports any Dozer blade and bucket in GNSS mode indicate only.







2D-MC Solution for Compact Track Loaders*







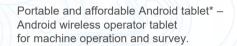








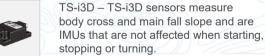






Rotating Laser - Any rotating laser can be used to establish a reference elevation

LS-B200/W - 2D laser receivers. Can be a singular receiver for grade or dual receiver configuration for grade and slope.





MC-X1 – A high-powered ECU capable of simple slope control and 2D to fully automatic 3D control.



















2D-MC - Supported Attachments*



















- Kubota
- SharpGrade
- CAT
- Bobcat
- Hitchdoc





- CAT
- Burchland













Sitelink3D Site Management

















- Complete solution to enhance Earthmoving,
 Compaction, Hauling & Mobile Weighing operations
- Automated Data exchange office site
- Remote control of MC displays
- Tasks
- Documentation
- Real time widgets
- Data conversion (dwg, dxf, LandXML, ...)



Sitelink3D Exchange

- For simple transfer and collection of machine control related data
- Real-time map, Remote view & control
- MS OneDrive, Google Drive, Dropbox
- Automatic data synchronization

Sitelink3D Insights

 Activity, Performance and Consumption data directly into Microsoft Excel







Haul Truck Mobile App



















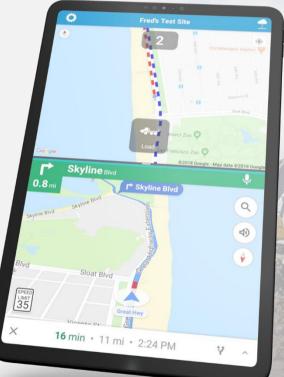
Keep mass balance up to date

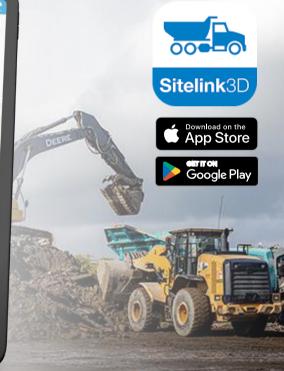


Real-time documentation for accounting and billing



No additional hardware needed











Mobile Weighing systems





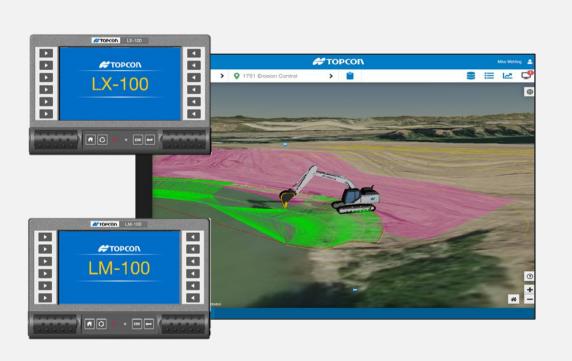




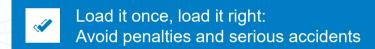


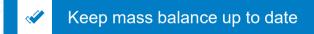




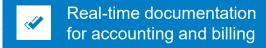


















Pavelink































Accuracy · Optimization · Costs · Time

For your paving processes and logistics





















Pavelink Functionalities and Benefits















With Pavelink plan and real-time monitor asphalt logistics based on key factors:



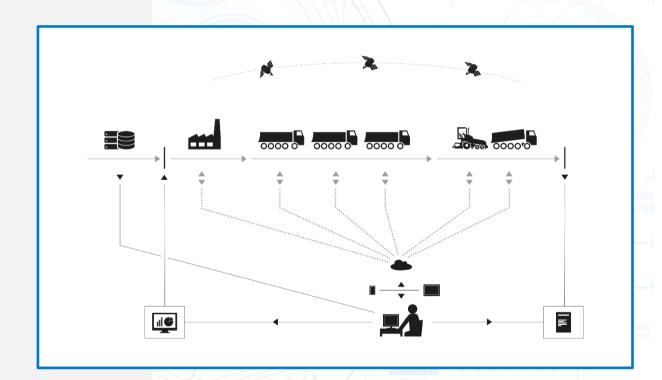
· Capacity, Mixture, Temperature, Volume



Distance, Available truck routes, Departure/ETA times



• Location, Paver, Screed Width, Consumption, Temperature









Data Automation

O Aptix[™]

















Centralized
Integrations
& Project
Data
Management



Earthwork
Coordination
& Asset
Tracking

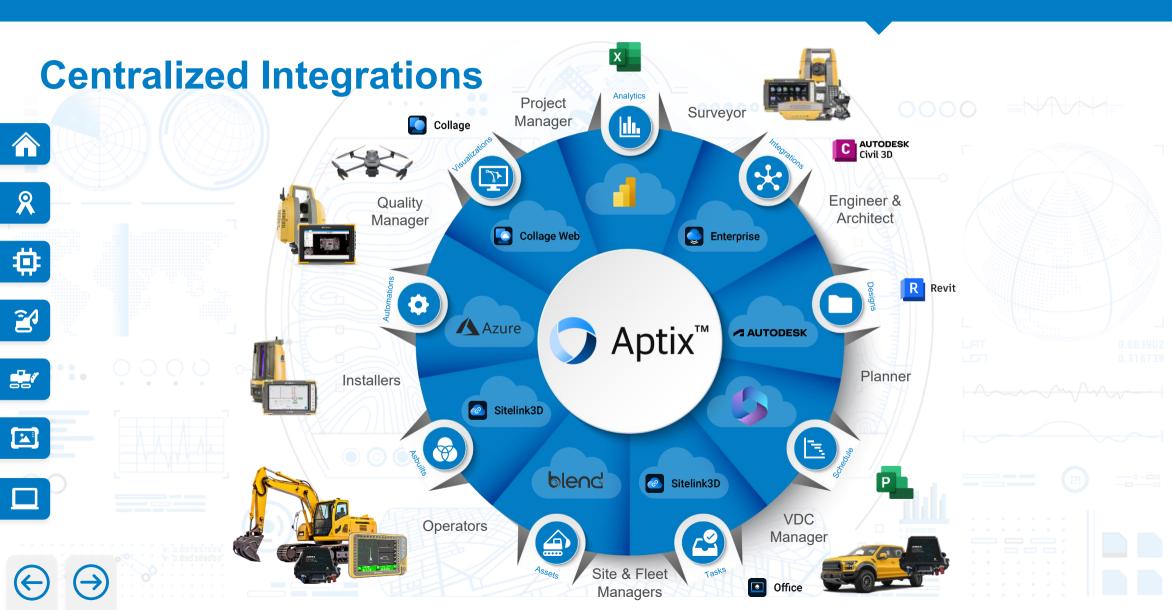


Automated Reporting & Real-time Insights











Always One Step Ahead