

FARMNAVIGATOR

The most advanced technology applied to Intelligent Agriculture



FARMNAVIGATOR product line 2016

Displays, GPS receivers, accessories and spare parts

AvMAP

SATELLITE NAVIGATION

30 years of Know-How in Moving Maps and Navigation Technology

AvMap, the Italian manufacturer of navigation systems since 1994, offers a wide range of solutions in different automotive, marine electronics, avionics and precision farming.

AvMap manufactures electronics devices for B2C, B2B and OEM markets.

AvMap products are 100% made in Italy and sold worldwide.

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Product line 2016

G7 Ezy

Intelligent Farming made easy

Parallel Guidance + Automatic Section Control

PAG 8

G7 Plus

Your Guide to Precision Farming

Parallel Guidance + Automatic Section Control + Auto-steering + Road Navigation

PAG 10

Auto-Steering System

G7 Plus Farmnavigator + C-BOX + MDU + ECU

A reliable and cost-effective auto steering for precision farming that increases work accuracy, saves fuel and reduces operator's stress and fatigue.



PAG 12

GPS Receivers

Choose the receiver that best suits your precision requirements.



PAG 14

Accessories & Spare Parts

Power adapters, connection cables, mounts, protective cases, remote controls and more.



PAG 18

FARMNAVIGATOR family: for each need, its solution.



G7 Ezy

Intelligent Farming made easy

Parallel Guidance + Automatic Section Control



G7 Plus

Your Guide to Precision Farming

Parallel Guidance + Automatic Section Control

+ Auto-steering + Road Navigation



G7^{Ezy}**G7^{Plus}****Suggested Use**

- Mapping
- Fertilizing
- Spraying

- Mapping
- Fertilizing
- Spraying
- Auto-Steering

Software

Field perimeter and area Calculation

✓

✓

Field and Jobs database

✓

✓

Satellite Assisted Guidance

✓

✓

Parallel guidelines

✓

✓

Identical contour curves

✓

✓

Adaptive contour

✓

✓

Pivot guidelines

✓

✓

Headland Management

✓

✓

Automatic Section Control

✓

✓

Export data to Google Earth

✓

✓

Implements Database

✓

✓

Auto-Steering extension

✗

✓

Road Navigation

✗

✓

Software updates via Wi-Fi

✗

✓

Hardware

Display

7"

7"

Waterproof

✓

✓

Built-in battery

✗

✗

Bluetooth

✗

✓

Remote Control

Optional

✓

Serial Ports

3

3

Compatible DGPS Receivers
FARMNAVIGATOR
 Smart GPS/GNSS

✓

✓


Novatel AG-Star

✓

✓


Novatel Smart6-L

✓

✓

FARMNAVIGATOR

G7 FARMNAVIGATOR series Functions overview



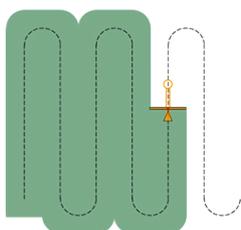
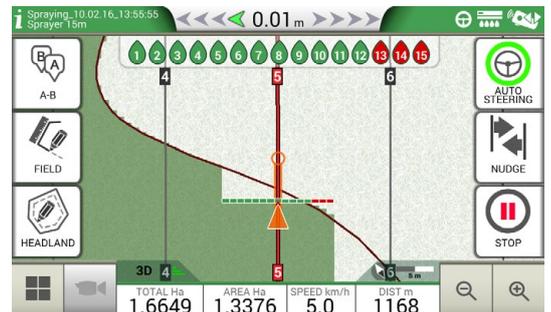
Create your database of fields

Start creating your fields' database: measure your field boundary, calculate the area and save the position of obstacles or soil samples.

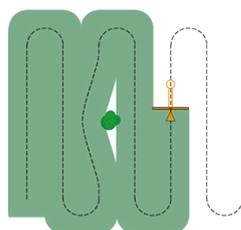


Follow the satellite assisted guidance

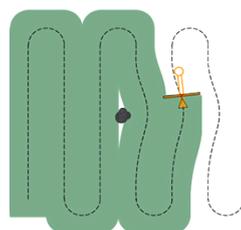
- Choose the guidelines for your activity (A-B parallel lines, identical curves, adaptive contour or pivot guidelines) and follow the guidance cursor to correct your driving.
- Save and recall guidelines for further activities in the field.
- Make sure the guidance line is always visible through the circle on the top of the smart cursor. The cursor will help you understand the tractor turn radius, to quickly correct your steer.



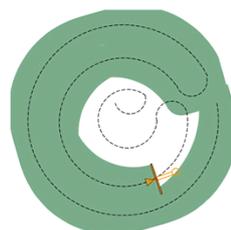
Parallel guidelines



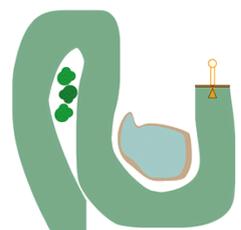
Identical curves



Adaptive contour



Pivot



Free form

G7 FARMNAVIGATOR series Save time and increase efficiency

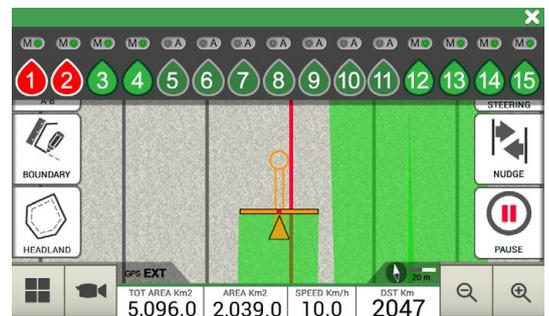


Configure your implements and control them

Create a profile for each implement and activity (e.g. seeding, fertilizing or spraying): set the working width, or the number of boom sections and their individual width.

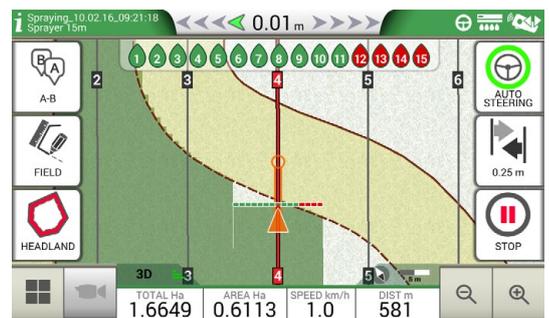
Choose a profile and get indications for manual boom switch control to start reducing costs and protecting the environment.

Connect an automatic section controller to G7 Farmnavigator for higher precision and greater productivity. You can still close or open manually a section from the display forcing the automatic control.



Manage the Headland

- When starting a job, you can create a headland within the field boundary, based on your working width.
- The headland function can be used with A-B parallel guidelines, identical curves and adaptive contour guidelines, and it allows working the headland at the end, avoiding unnecessary overlaps.

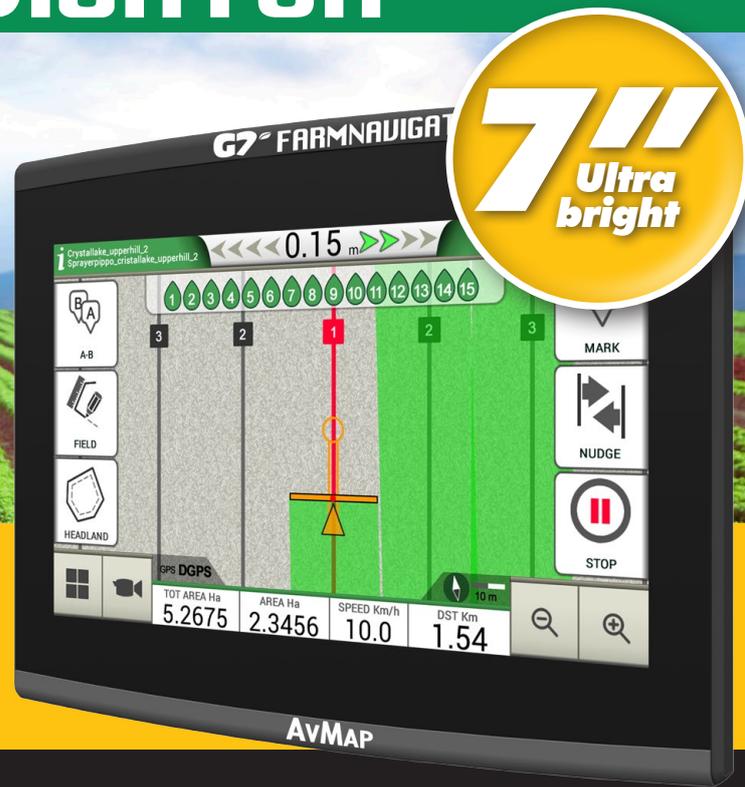


Save your Jobs

- G7 Farmnavigator records data for each Job: farmer, activity, field, implements used, products used, worked area, total time etc.
- Manage your data: fields and jobs can be exported to Google Earth as .kmz files.



FARMNAVIGATOR



G7 Ezy

Intelligent Farming made easy

Guidance on 7" display + Automatic Section Control

Main Features

- Fields database
- Satellite assisted guidance with **parallel, identical curves, adaptive contour or pivot guidelines**
- **Headland Management**
- Implements database
- Manual and automatic Section control
- Jobs database exportable in Google Earth™



Automatic Section Control

Connect G7 Ezy Farmnavigator to a compatible sprayer controller to reduce costs and environmental impact.

Technical Specifications

- Display: 7" bonded LCD, 1024x600 px, 1000 nits
- Capacitive Multi-Touch Screen
- Built-in WAAS / EGNOS / MSAS GPS
- Supply Voltage: 10-35 Vdc
- Power consumption: 820 mA MAX @ 12V (~10 W)
- Powered bracket with 3 serial ports and power cable with cigarette lighter plug. Cobo adapter and spade terminals adapter available as options.
- Operating temperature: -10°C / +60°C
- Storage temperature: -30°C / +80°C
- Waterproof IPX6
- Dimensions: 188 x 146 x 33 mm
- Weight: 640 g

Content of the box



Powered bracket with serial ports and power cable



Power cable adapter with cigarette lighter plug

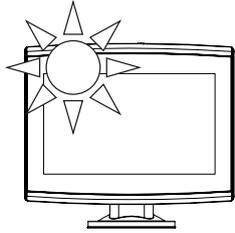


Protective cover



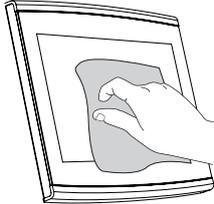
Heavy Duty suction cup

FARMNAVIGATOR



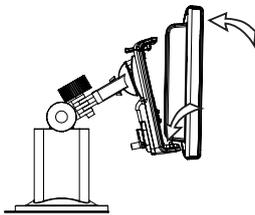
A farming display like you have never seen before!

G7 Farmnavigator features an incredibly bright 7" sun-light readable display. The bonded LCD reduces the reflections, increases the contrast ratio, and eliminates condensation.



Dust and water proof

The display is covered edge to edge with hard glass that can be easily cleaned from dust in one swipe. Suitable for use on tractors without a cab.



Easy to install

G7 Farmnavigator is powerful yet weighs only 640 g. The special bracket includes power cable and serial ports. The installation takes only few minutes:

1. Place the Farmnavigator on the bracket,
2. Plug the power cable into the cigarette lighter,
3. Connect the external antenna into the DB9 connector.



Farmer-friendly Software

An intuitive interface with large buttons for each function.

Everything is just a touch away

In the field view you can keep an eye on all the most important data and everything is within reach thanks to the collapsible menus.

Hand gestures

You can use multiple-finger gestures on the multi-touch display to scroll menus or to zoom in and out the field view.

Available as:

	<p>G7 EZY FARMNAVIGATOR</p>	<p>P3MJ50WBAM</p>
	<p>G7 EZY FARMNAVIGATOR + Smart GPS / GNSS Receiver</p>	<p>P3MJ500BAM</p>

FARMNAVIGATOR



G7 Plus

Your GUIDE to Precision Farming

Parallel Guidance + Automatic Section Control + Auto-steering + Road Navigation

Main Features

- Fields database
- Satellite assisted guidance with parallel, identical curves, adaptive contour or pivot guidelines
- Headland Management
- Implements database
- Manual and automatic Section Control
- Jobs database exportable in Google Earth™
- Compatible with Farmnavigator Auto-steering
- Road navigation with HERE Maps

Technical Specifications

- Display: 7" bonded LCD, 1024x600 px, 1000 nits
- Capacitive Multi -Touch Screen
- Built-in WAAS / EGNOS / MSAS GPS
- Wifi
- Compatible with A2DP Bluetooth speakers
- Supply Voltage: 10-35 Vdc
- Power consumption: 820 mA MAX @ 12V (~10 W)
- Powered bracket with 3 serial ports and power cable with cigarette lighter adapter, Cobo adapter, spade terminals adapter.
- Operating temperature: -10°C / +60°C
- Storage temperature: -30° C + / 80°C
- Waterproof IPX6
- Dimensions: 188 x 146 x 33 mm
- Weight: 640 g

Content of the box



Powered bracket with serial ports and power cable



Power cable adapters



Protective cover



Heavy Duty suction cup



Remote control

FARMNAVIGATOR



G7 PLUS FARMNAVIGATOR & Car Navigator!

Offline Road Navigation with HERE maps

You can use G7 Plus Farmnavigator all year round to navigate to your fields or to anywhere else, thanks to the Road navigation function and HERE maps included!

You can choose among five maps:

Europe / South Africa / Brazil / North America / Australia

Extensions



Video camera

Control your cameras from the G7 display: perfect for rear view or to monitor sensitive points of the implements.

C-Box required.



Automatic Section Control

Connect G7 Plus Farmnavigator to a compatible sprayer controller to reduce costs and environmental impact.



Auto-steering System

G7 Plus Farmnavigator can be used with the Farmnavigator Auto-steering kit to achieve the maximum precision and reduce the operator fatigue. C-Box required.

Available as:

	G7 Plus FARMNAVIGATOR	P3MJ52WWAM
	G7 Plus FARMNAVIGATOR + Smart GPS / GNSS Receiver	P3MJ520WAM
	G7 Plus FARMNAVIGATOR + Novatel AG-Star Receiver	P3MJ52NWAM

FARMNAVIGATOR



Farmnavigator Auto-Steering System



Farmnavigator ECU

The compact and versatile steering controller. It detects orientation and movement of vehicle, it receives corrected GPS data from the receiver and converts information from the Farmnavigator to actual steering commands.



Farmnavigator MDU

- Patented universal ring gear
- High torque gear for the most demanding vehicles
- High speed response
- WAAS / EGNOS level pass-to-pass accuracy



Farmnavigator C-Box

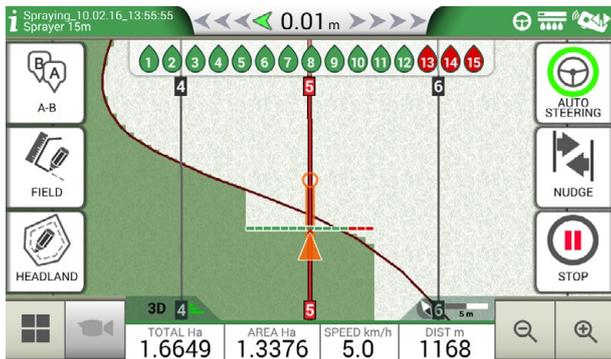
The Farmnavigator's connection hub: it expands connectivity adding 2 serial ports, 2 USB ports, Video in, Ethernet, CAN bus.

Technical Specifications

- Compatible with any GNSS smart antenna
- Supporting GPS, Glonass, Galileo and Beidou
- RTK compatible
- Wheel Angle Sensor input
- Pressure transducer input
- Input Voltage 9-16 VDC
- 9-axis inertial sensors
- CAN port to connect to ISOBUS steering controller
- Harness cable (Ethernet, Power, NMEA-A, NMEA-B, Expansion, CAN) and ECU-MDU cable included
- ECU Dimensions 153 x 147 x 57 mm
- ECU Weight < 1kg
- ECU Operating Temperature: -20°C / 60°C
- ECU Storage Temperature: -40°C / 85°C
- Waterproof IP-67

Smart DGPS receiver of your choice

FARMNAVIGATOR



The reliable and cost-effective Auto-Steering system to increase work accuracy, save fuel and reduce operator's stress and fatigue.

The Farmnavigator Auto - steering System controls your vehicle steering and helps you stay on track following with great precision the guide lines set on the Farmnavigator.

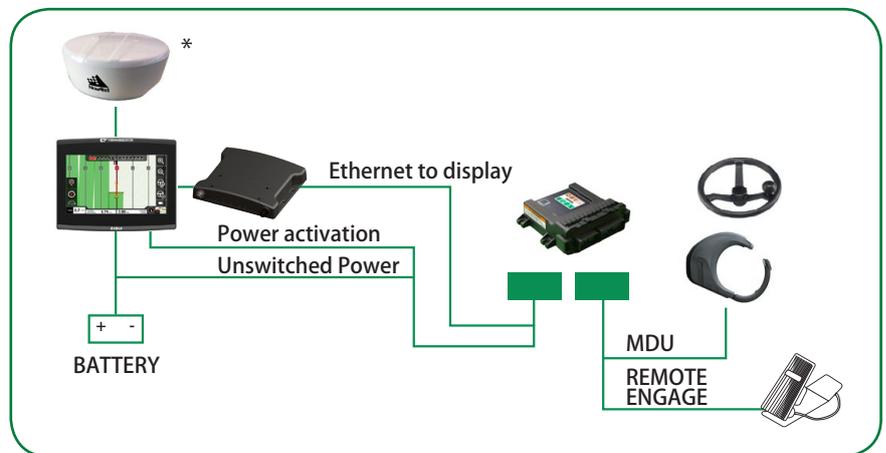
You can disengage the Auto - Steering by firmly grasping the steering wheel; vice versa you can engage it very easily by tapping the corresponding icon on the Farmnavigator display.

Automatic setup and calibration + maintenance over WiFi

Easily configure the ECU following the step - by - step wizard on the Farmnavigator display.

Easy installation and transfer

The smart Mechanical Drive Unit mounts on existing steering wheel without requiring its removal thanks to the patented universal ring gear. The MDU simply clamps on and off for fast and easy transfer across vehicles of different brands and types (tractors, sprayers, spreaders or combines).



* Receiver not included

	<p>Auto Steering kit MDU + ECU + standard bracket + C-Box Compatible with G7 /G7 Plus Farmnavigator. Vehicle specific bracket available upon request.</p>	<p>K10ASSU000</p>
	<p>Auto Steering system G7 Plus Farmnavigator + Auto - Steering Kit</p>	<p>P3MJ52UWAM</p>

GPS receivers

Choose the receiver that best fits your precision requirements



			
Model	FARMNAVIGATOR Smart GPS/GNSS	Novatel AG-Star	Novatel Smart6-L
L1 GPS	✓	✓	✓
L2 GPS	✗	✗	optional
L Band	✗	✗	optional
Glonass	✓	✓	✓
Beidou	✗	✗	✓
SBAS (WAAS, EGNOS, MSAS)	✓	✓	✓
Update Rate up to	10 Hz	10 Hz	20 Hz
Channels	72	14	120
RTK	✗	✗	optional
Position smoothing technology	✗	✓	✓
Pass-to-pass accuracy	SBAS 30 cm	SBAS + Glide 30 cm	SBAS + Glide 30 cm L1/L2 SBAS 16 cm Terrastar 4 cm RTK 2 cm
Compatibility with G7 series	✓	✓	✓
Suggested use	Basic precision operations: Mapping, Fertilizing, Spraying. Great performance even when the sky is obstructed by trees.	Basic precision operations Auto-steering application.	Basic precision operations + High precision Auto-steering application.



Smart GPS/GNSS Receiver

High sensitivity and minimal acquisition time while maintaining low system power

Our Smart GPS receivers for FARMING APPLICATIONS are high precision products for professional use that include GNSS receiver and GNSS antenna integrated into one compact housing.

TECHNICAL SPECIFICATIONS

Highlights

- ▶ *GPS, GLONASS concurrent GNSS operation*
- ▶ *SBAS tracking increases position accuracy*
- ▶ *72 Channels*
- ▶ *Update rate up to 10 Hz*
- ▶ *Great performance even when the sky is obstructed by trees*

PERFORMANCE

- GPS, GLONASS*, SBAS
- 72 channels
- Update rate up to 10 Hz
- Supply Voltage: 10 – 35 Vdc
- RS-232 serial port – DB9 connector

PHYSICAL AND ELECTRICAL

- Dimensions: 97 mm \varnothing x 32 mm (61.5 mm with flag pole mount)
- Weight: 160 g without cable
- Power consumption: 0.8 W max
- 4m Conxall to DB9 power cable

ENVIRONMENTAL

- Operating Temp. : -20 °C / +60 °C
- Storage Temp. : -30 °C / +85 °C
- Water Resistance: IPX7

COMMUNICATION

- NMEA 0183
- Baud rate 4800 - 115 200
- NMEA output messages: GGA, GLL, RMC, GSA, GSV, VTG, ZDA

*Glonass is not supported by G6 Farmnavigator

	Product Name	G7	G6	Product code
	Smart GPS / GNSS Receiver 4m power cable Conxall to DB9 connector included.	✓	✓	UX0GSG20AM

Novatel Smart AG-Star



**Integrated L1 GPS + GLONASS receiver and antenna
ideal for harsh agriculture environments**

With GLIDE technology for smooth, consistent positions for pass-to-pass applications, optimal for auto - steer applications.

TECHNICAL SPECIFICATIONS

Highlights

- ▶ *GL1 GPS + GLONASS receiver*
- ▶ *SBAS corrections (WAAS, EGNOS and MSAS)*
- ▶ *GLIDE technology for ultra-smooth positioning and exceptional pass-to-pass accuracy*
- ▶ *Update rate 10 Hz*

PERFORMANCE

- 14 channels configurable for GPS L1, GLONASS L1 and SBAS tracking
- Update rate 10 Hz
- Supply Voltage: +8 to +36 VDC (Compatible with 12 V or 24 V vehicle power)
- RS-232 serial port – DB9 connector

PHYSICAL AND ELECTRICAL

- Dimensions: 68 mm \varnothing x 155 mm
- Weight: 490 g without cable
- Built-in magnets to simplify mounting. Fixed mounting is also supported with Optional mounting plate and Optional pole-mount adapter plate
- Power consumption: 2.5 W (typical)
- AG-Star to Farmnavigator connection cable included (DB9 serial port)

ENVIRONMENTAL

- Operating Temp. : - 40°C / +75°C
- Storage Temp. : -55 °C / +90 °C
- Water Resistance: IPX7

COMMUNICATION

- Baud rate 115 200
- NMEA output messages: GGA, RMC, GSA, GSV, VTG, ZDA

	Product Name	G7	G6	Product code
	Novatel AG-Star Receiver 4m Connection cable included.	✓	✗	UX0GGA00AM



Novatel Smart6-L

L1 GPS + GLONASS receiver
Upgrades available for dual frequency,
L-Band and RTK

With GLIDE technology for smooth, consistent positions for pass-to-pass applications.

TECHNICAL SPECIFICATIONS

Highlights

- ▶ L1 GPS + GLONASS receiver (upgrade available for L2)
- ▶ Multi-constellation tracking for enhanced positioning
- ▶ 120 channels
- ▶ Update rate up to 20 Hz
- ▶ GLIDE technology for smooth and consistent positioning for pass-to-pass accuracy
- ▶ SBAS corrections (WAAS, EGNOS and MSAS)
- ▶ Upgrade available for L-Band for TerraStar services
- ▶ RTK Upgrade available

PERFORMANCE

- 120 channels
- Tracking: GPS L1, GLONASS L1, Galileo E1, BeiDou B1, SBAS
- Update rate up to 20 Hz
- Supply Voltage: +8 to +36 VDC
- RS-232 serial port – DB9 connector

PHYSICAL AND ELECTRICAL

- Dimensions: 155 mm \varnothing x 81mm
- Weight: <550 g without cable
- Magnetic mount. Fixed mounting is also supported with Optional mounting plate
- Power consumption: 2.9 W (typical)
- Smart6-L to Farmnavigator connection cable included (DB9 serial port)

ENVIRONMENTAL

- Operating Temp.: -40 °C / +75 °C
- Storage Temp.: - 55 °C/+90 °C
- Water Resistance: IP67

COMMUNICATION

- Baud rate 115 200
- NMEA output messages: GGA, RMC, GSA, GSV, VTG, ZDA

	Product Name	G7	G6	Product code
	Novatel Smart6-L Receiver GPS+GLONASS, L1, SBAS, DGPS, GL1DE. Power / data cable included. <ul style="list-style-type: none"> ▶ L2 GPS + GLONASS Upgrade available ▶ L - Band for Terrastar services Upgrade available ▶ RTK Upgrade available 	✓	✗	UX0GGA10AM

Accessories

	Product Name	G7	G6	Product code
	Spider adapter – Cigarette lighter Cigarette lighter plug to: Cobo female plug, Cigarette lighter female plug, FARMNAVIGATOR female plug for connection with G7 powered bracket.	✓	✗	CBYYGY0205
	Spider adapter – Cobo Cobo plug to: Cobo female plug, Cigarette lighter female plug, FARMNAVIGATOR female plug for connection with G7 powered bracket.	✓	✗	CBYYGY0200
	Desktop bracket With AC / DC power supply cable.	✓	✗	K10QDBD00A
	C-Box It is the Farmnavigator's connection hub providing additional USB, Video Input, Ethernet, CAN BUS, for connection auto-steering and rear view camera.	✓	✗	UX0CL100AM

Spare parts

	Product Name, description	G7	G6	Product code
Power cables				
	Powered bracket 3 DB9 serial ports + power cable with Faston Plug for connection with adapters.	✓	✗	K10QDB200B
	Powered bracket kit 3 DB9 serial ports + power cable with Faston Plug and 3 combination options: cigarette lighter / spade terminals / Cobo adapter	✓	✗	K10QDBF00A
	Cobo adapter Combine it with the Powered Bracket Combo to power the G7 from a Cobo plug.	✓	✗	CBYYGY0202
	Spade terminals adapter Combine it with the Powered Bracket Combo to power the G7 from a battery.	✓	✗	CBYYGY0203
	Cigarette lighter adapter Combine it with the Powered Bracket Combo to power the G7 from a cigarette lighter.	✓	✗	CBYYGY0204

	Product Name, description	G7	G6	Product code
	AC / DC adapter Combine it with a power cable with cigarette lighter plug to charge Farmnavigator from AC / DC.	✗	✓	KAPWS12V04
	Universal Car Charger Power G6 Farmnavigator from a cigarette lighter.	✗	✓	CBJAMG0202
	Power / serial cable Power G6 Farmnavigator from a cigarette lighter and get an extra DB9 serial port.	✗	✓	CBAYMG0803
	Power Supply cable Power G6 Farmnavigator from AC / DC.	✗	✓	KAADC502EU
Mounts				
	Heavy-duty suction cup holder Robust holder with heavy duty suction cup.	✓	✓	HBS50AX
	Magnetic Mount To be fixed on the Holder to hook the G6 Farmnavigator. It includes the power cable plug and a DB9 serial port for connection to the DGPS receiver.	✗	✓	K11ME2006A
Connection cables				
	Novatel antenna connection cable It connects Novatel AG-Star or Smart6-L to the G7 Farmnavigator (DB9 serial port).	✓	✗	CBYDFS0401
	Antenna - Farmnavigator Serial cable 9 Pin It connects the external antenna to the Farmnavigator (serial DB9 port).	✓	✓	CBCDFS0801
	C-box connection cable It connects the C-Box (free wires) to the G7 (14 pin connector on the powered holder).	✓	✗	CBC1F51400
Protective cases				
	Protective rubber case for G6 Farmnavigator It protects The G6 from dust and scratches.	✗	✓	HPC41BR-A
	Protective cover for G7 Farmnavigator Protects G7 Farmnavigator' display when not in use.	✓	✗	HPC51AX/C
Remote control				
	Farmnavigator Remote control Control the G7 Farmnavigator without reaching the touch screen.	✓	✗	UX0RK100AM



How to order

- Shop on line at www.avmap.it/shop
- Or order writing to orders@avmap.it specifying **Product Name** and **Product Code**



Sales

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