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AgGPS EZ-Guide Plus

This document answers frequently-asked questions about the AgGPS[®] EZ-Guide[®] Plus lightbar guidance system.

Hardware

How do I connect EZ-Guide Plus to a Trimble[®] Recon[™] handheld?

To connect the EZ-Guide Plus lightbar directly to a Trimble Recon handheld running EZ-Map, use a standard null-modem cable, such as Trimble P/N 18532. This cable connects the lightbar DE-9 with the handheld DE-9.

If you use the EZ-Map switch input cable, you will need a second null-modem cable. The first null-modem cable connects the lightbar DE-9 with the GPS side of the EZ-Map switch input cable. The second null-modem cable connects the handheld side of the EZ-Map switch input cable with the handheld DE-9.

How do I send 5 Hz output to my yield monitor, planter, or EZ-Map?

When the lightbar Data Port Settings output is configured to 4800, you can only send 1 Hz updates to a yield monitor, planter, or EZ-Map. To send 5 Hz updates, you must change the baud rate to 9600 or higher (Trimble recommends 38400).

How do I wire an external alarm into EZ-Guide Plus?

The EZ-Guide Plus optional remote control has an integrated alarm. However, you can directly connect an alarm to the EZ-Guide Plus lightbar DE-9 connector, or the remote control connector on the optional external interface cable. Connect the alarm to the following pins:

Pin	Description
1	Alarm 5 V
5	GND

Note: You cannot connect an external alarm while you are using the remote control.

Trimble Navigation Limited, 9290 Bond St, Suite 102, Overland Park, KS 66214, USA

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How can I test if the EZ-Guide Plus hardware is working correctly?

If you suspect that one or more components of the EZ-Guide Plus hardware are not working correctly, you can run hardware tests.

To run any or all of these tests:

1. From the configuration menu, select *About*.
2. Press  until *Tests* is highlighted, then press . The *Tests* screen appears.
3. Select the tests you want to run.
4. If any of the tests fail, contact your local Trimble Reseller.

Why does the lightbar sometimes not work when I return from my lunch break?

The EZ-Guide Plus lightbar will not work if it gets too hot. Do not leave the lightbar switched on in a place that may become very hot, such as a vehicle cab, when you take a break. Otherwise, the unit may turn off the screen and LEDs. To enable normal operation, reduce the temperature of the lightbar (turn on the vehicle air-conditioning or shield the lightbar from direct sunlight). When the unit cools down, it will start working again.

GPS

What NMEA messages are required for guidance?

The EZ-Guide Plus lightbar requires GGA messages to provide guidance. Trimble strongly recommends that you also configure the receiver to output VTG messages.

Warning: *If the EZ-Guide Plus lightbar does not receive VTG messages, guidance may be erratic, especially if you have an antenna offset.*

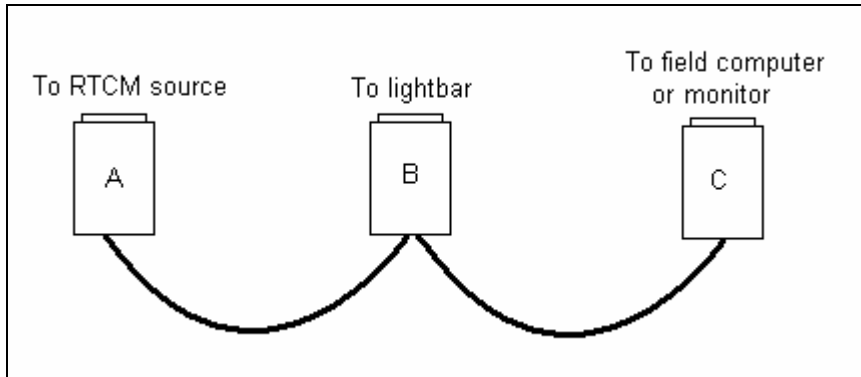
Why does the EZ-Guide Plus lightbar keep reporting Searching Sats (0)?

If the lightbar fails to find any satellites within about two minutes, check that the antenna is properly connected to the lightbar. If the antenna is connected, view the Antenna status in the *GPS Diagnostics* screen. If it reports *None* or *Short Circuit*, you have a damaged antenna or antenna cable. Contact your local Trimble dealer to arrange for the faulty item to be repaired or replaced.

If the Antenna status reports *OK*, check that the antenna has a clear view of the sky. GPS does not work indoors.

How can I send RTCM corrected NMEA positions from the integrated GPS receiver?

RTCM corrections must be provided to the lightbar internal GPS receiver from an external GPS receiver. The EZ-Guide Plus lightbar has only one DE-9 serial port. To connect an external receiver to send RTCM corrections to the integrated receiver at the same time as the lightbar sends the RTCM corrected NMEA positions to a field computer, you must make your own adaptor cable with three D-9 connectors as shown below.



Pin	A	B	C
2	RTCM out	RTCM in	
3		Data out	Data in
5	GND	GND	GND

How do I configure or view the integrated GPS settings?

The default integrated GPS receiver settings should be appropriate for guidance.

To view the receiver settings (for example, filter, elevation mask, correction age mask, DGPS station ID), select *GPS Diagnostics* from the configuration menu.

Filter settings

To configure the filter settings:

1. From the configuration menu, select *About*.
2. Once *Exit* is highlighted, press \blacktriangledown to select the *Filter* option and then press OK .
3. Change the filter settings as required, and then press OK to return to the *About* screen.
4. Press OK to return to the configuration menu.

Corrections

To turn off WAAS or EGNOS corrections:

1. From the configuration menu, select *About*.
2. Once *Exit* is highlighted, press \blacktriangledown to select the *Corrections* option and then press OK .

3. Turn off any or all WAAS or EGNOS satellites as required, and then press **OK** to return to the *About* screen.
4. Press **OK** to return to the configuration menu.

To view information not available in the *GPS Diagnostics* screens or to configure other settings not available in the lightbar menus, use AgRemote.

If you use AgRemote:

- The lightbar *Data Port Settings* input must be set to *Diagnostics*.
- You cannot use the *Auto port configuration/Force connection* options in AgRemote. You must manually set the parity and baud options in the *Data Port Settings* screen to match the AgRemote settings.

Note: AgRemote works best when the baud rate is set to 38400.

- The *Diagnostic* setting is not saved over a power cycle.
- While you are in *Diagnostics* mode and have AgRemote connected, the *GPS Diagnostics* screens do not update. If you change any receiver settings, for example Correction Age Mask, SNR Mask, Elevation Mask, etc. you must change the *Data Port Setting* input option back to *None* (or *Corrections*) before the new settings are displayed in the *GPS Diagnostics* screens.
- If you start the lightbar with the *Data Port Setting* input set to *External GPS* and change directly to *Diagnostics*, the integrated receiver will not be configured to output NMEA messages. AgRemote will still connect to the receiver and display the correct information, however the EZ-Guide Plus lightbar will display NO GPS POSITION. To change from *External GPS* to *Diagnostics*, change to *None*, exit the configuration menu (*Return to Guidance*), then return to the *Data Port Settings* screen and change the input to *Diagnostics*.

Can I upgrade an EZ-Guide Plus lightbar without integrated GPS to integrated GPS?

No. There is no service option to upgrade an AgGPS EZ-Guide Plus lightbar to integrated GPS.

Guidance

How can I demonstrate the guidance features of EZ-Guide Plus?

EZ-Guide Plus has an integrated demonstration mode.

To demonstrate guidance for the straight AB Line pattern:

1. From the configuration menu, select *About*.
2. Press **▼** until *Demo* is highlighted on the bottom line.
3. Press **OK**.

To exit from demonstration mode, cycle power on the lightbar.

How do I use the Headlands pattern to drive a field as a spiral pattern?

To use the Headlands pattern to drive the field as a spiral pattern, where guidance is always provided from the initial headland pass:

1. Press **OK** to reset guidance. The *Guidance Pattern* screen is displayed.
2. Select *New Headland* and press **OK**.
3. Drive the vehicle to the outside of the field and press **OK**. This marks the start of the first headland pass. A large circle is drawn on the display screen around the start point.
4. Drive around the edge of the field. When you enter the circle around the start point, the next pass is automatically generated.
5. Drive into the field and follow the second pass.
6. Complete the field by following guidance to successive swaths.
7. When you have completed the field, stop the vehicle and select *Reset Guidance* from the configuration menu.

The *Guidance Pattern* screen appears, and the unit is ready to map another field.

Note: Do not select *Final Headland*. This will start AB Line guidance and end spiral headland guidance.

How does the adaptive curve pattern work?

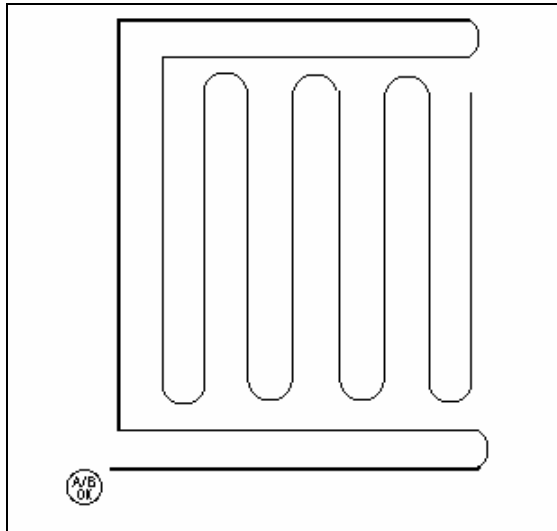
The adaptive curve pattern is different from the other patterns because it does not require you to set a B point. You also do not need to press any buttons to generate the next swath. Instead the EZ-Guide Plus lightbar automatically detects turns and generates the next swath. However, there are some restrictions that must be met before the next swath will be generated, as follows:

- You must drive forward a distance of at least four swath widths past the start of the swath before starting the turn
- You must turn at least 90 degrees
- When the angle exceeds 90 degrees, the offline distance must be between 1/2 swath width and 2 swath widths

Note: If the offline distance is greater than two swath widths when the 90 degree turn is completed then it will not generate a new swath as EZ-Guide Plus assumes that you have done a big turn which is still part of the curve.

How can I use EZ-Guide Plus to drive a field in a C-clamp pattern?

Use the Adaptive Curve pattern to drive a field in a C-clamp pattern. In the following diagram, bold lines indicate where you must drive swaths without guidance, and thin lines indicate where you obtain guidance.



How many swaths can I do in a field?

The maximum number of swaths you can do in a field depends on the swath pattern you are using. The following table lists the maximum number of swaths for each pattern type.

Pattern	Maximum swaths	Notes
A-B	2040	1020 either side of the A-B Line
A+	2040	1020 either side of the A-B Line
Adaptive curve	1020	One side of A-B Line
Identical curve	2040	1020 either side of the A-B Line
Headlands	50	
Pivot	1020	One side of A-B Line

Note: If you are more than 30 km away from the field, the offline LEDs, the A-B Line and guidance line, and Offline distance are not displayed. This is true even if you are within the maximum swath limit.

Why do I sometimes see dotted lines on screen?

In addition to the progress lines and field boundary, there are two other types of dotted lines that can be drawn on screen as follows:

- Rubber band line – this is a straight line drawn between the A point and the vehicle icon while you are defining the straight reference line using the A-B pattern. See snap below.
- Track points – these are curved lines that follow the vehicle path and are drawn while you are defining a reference line using any pattern, defining a headland boundary, and driving any adaptive curve swath.

The following screen snap shows a rubber band line and track points taken while defining an A-B line.

