

TILT COMPENSATION MODULE



Bulletin 98-01151 R1

Tilt Sensor Operation

The SmartPad II must be loaded with Fieldware software, version 4.03 or higher to be compatible with the Tilt Sensor. When operating the Tilt Sensor the position data coming from the GPS receiver will be compensated for vehicle tilt errors and then corrected information will be sent to the console.

When the vehicle experiences a sideways tilt, any guidance information is affected: For example, if the GPS sensor is 12 feet (3.65m) above the ground, a 10-degree tilt gives a 2-foot (0.61m) positioning error.

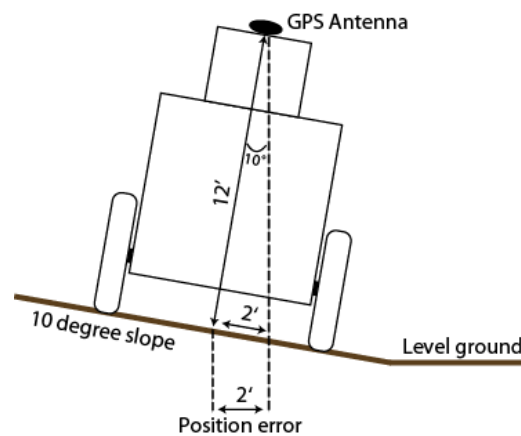
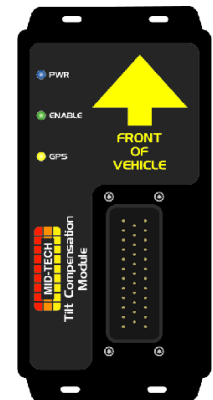


Figure 1: Tilt Sensor Example

Tilt Sensor Functions

There are three LEDs visible on the Tilt Sensor which indicate the following:

- **Blue** - Blinks two times per second when the unit is powered and running
- **Green** - Steady ON when tilt correction is enabled, OFF otherwise
- **Yellow** - Blinks one time per second when valid GPS location data is being received (NMEA-0183 GGA)



Tilt Sensor Mounting Recommendations

1. Mount as close to the center of the vehicle side to side as possible.
2. Mount sensor on a parallel plain to the GPS antenna so both the antenna and the sensor tilt the same degree.
3. Mount so the sensor is level and connector is pointing upward.
4. Sensor should be rigidly mounted to minimize vibration, because vibration will degrade the ability to sense tilt.
5. Mid-Tech recommends using nuts and bolts or self tapping screws through the two mounting holes on each end of the sensor.
6. The arrow on sensor decal must point toward the front of the vehicle.
7. Do NOT mount near extreme temperatures, upside down, or on its side.

SmartPad II Settings

Once the Tilt Sensor is properly installed and connected to the SmartPad II, two initial setup steps must be performed; enter an antenna height and calibrate (level) the sensor. The vehicle should be on level ground when performing these two steps.

Antenna Height

To access Antenna Height select Guidance>Setup>Guidance>Antenna Height. Enter the height of the GPS antenna above the ground. Initial value is 9.8ft (3m). Minimum value is 0, and the maximum value is 32.8ft. (10m).

SP II Ver 4.03 - Guidance Setup	
Dist to Swath	12.0 ft
Ant. Height	9.8 ft
Status Detect	Off
GPS Type	DGPS
Height of the GPS antenna from the ground.	

Figure 2: Setting Antenna Height

Calibrate Tilt Sensor

Once the antenna height has been entered, and the vehicle is on level ground, the sensor needs to be calibrated (Level). To access the level feature select Tools>Level.

Highlight the **Level Tilt** menu item and press the enter button. When calibration is complete a message dialog box will appear. Press enter to continue.



Figure 3: Calibrating (Level) Tilt Sensor

Tilt Sensor System Guide

