

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

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Hemisphere GPS Precision GPS Applications

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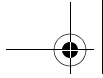
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6,111,549	6,397,147	6,469,663	6,501,346	6,539,303
6,549,091	6,631,916	6,711,501	6,744,404	6,865,465
6,876,920	7,142,956	7,162,348	7,277,792	7,292,185
7,292,186	7,373,231	7,400,956	7,400,294	7,388,539
7,429,952	7,437,230	7,460,942		

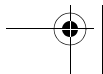
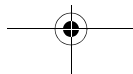
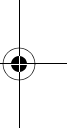
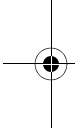
Other U.S. and foreign patents pending.



Notice to Customers

Contact your local dealer for technical assistance. To find the authorized dealer near you, contact us at:

Outback Guidance
2207 Iowa Street
Hiawatha, KS 66434
Phone: (800) 247-3808
Fax: (785) 742-4584
www.outbackguidance.com



Warranty Notice

Covered Products

This warranty covers all products manufactured by Hemisphere GPS (the "Products").

Hemisphere GPS Limited Warranty

Hemisphere GPS hereby warrants solely to the end purchaser of the Products, subject to the exclusions and procedures set forth herein below, that the Products sold to such end purchaser shall be free, under normal use and maintenance, from defects in material and workmanship for a period of 12 months from delivery to such end purchaser. Repairs and replacement components are warranted, subject to the exclusions and procedures set forth below, to be free, under normal use and maintenance, from defects in material and workmanship for 90 days from performance or delivery, or for the balance of the original warranty period, whichever is greater.

Purchaser's Exclusive Remedy

The end purchaser's exclusive remedy under this warranty shall be limited to the repair or replacement, at the option of Hemisphere GPS, of any defective Products or components thereof. The end user shall notify Hemisphere GPS or a Hemisphere GPS approved service center immediately of any claimed defect. Repairs shall be made through a Hemisphere GPS approved service center only.

Exclusions

Hemisphere GPS does not warrant damage occurring in transit or due to misuse, abuse, improper installation, neglect, lightning (or other electrical discharge) or fresh/salt water immersion of Products. Repair, modification or service of Hemisphere GPS products by any party other than a Hemisphere GPS approved service center shall render this warranty null and void. Hemisphere GPS does not warrant claims asserted after the end of the warranty period. Hemisphere GPS does not warrant or guarantee the precision or accuracy of positions obtained when using Products. Products are not intended for primary navigation or for use in safety of life applications. The potential accuracy of Products as stated in Hemisphere GPS literature and/or Product specifications serves to provide only an estimate of achievable accuracy based on:

- Specifications provided by the US Department of Defense for GPS Positioning,
- DGPS service provider performance specifications.

Hemisphere GPS reserves the right to modify Products without any obligation to notify, supply or install any improvements or alterations to existing Products.

No Other Warranties

THE FOREGOING WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED OR ARISING BY STATUTE, COURSE OF DEALING OR TRADE USAGE, IN CONNECTION WITH THE DESIGN, SALE, INSTALLATION, SERVICE OR USE OF ANY PRODUCTS OR ANY COMPONENTS THEREOF, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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To the greatest extent possible, this warranty shall be governed by the laws of the State of Arizona. In the event that any provision hereof is held to be invalid by a court of competent jurisdiction, such provision shall be severed from this warranty and the remaining provisions shall remain in full force and effect.

Obtaining Warranty Service

In order to obtain warranty service, the end purchaser must bring the Product to a Hemisphere GPS approved service center along with the end purchaser's proof of purchase. For any questions regarding warranty service or to obtain information regarding the location of any of Hemisphere GPS' approved service centers, contact Hemisphere GPS at the following address:

Hemisphere GPS

Outback Guidance
2207 Iowa Street
Hiawatha, KS 66434
Phone: (800) 247-3808 Fax: (785) 742-4584
www.outbackguidance.com

Documentation Feedback

Hemisphere GPS is committed to the quality and continuous improvement of our products and services. We urge you to provide Hemisphere GPS with any feedback regarding this guide by writing to the following email address: DocFeedback@hemispheregps.com.

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Chapter 1: Introducing the A220 Smart Antenna

Parts and Connections

1: Introducing the A220 Smart Antenna

The A220 Smart Antenna offers fast, portable, professional-level differential GPS (DGPS) accuracy in a rugged, all-in-one enclosure. Powered by Hemisphere GPS' powerful dual-frequency Eclipse® OEM board, it delivers a highly accurate GPS position, depending on the differential source used.



Figure 1-1: The A220 Smart Antenna.

With an optional built-in RTK radio, this dual-frequency OmniSTAR XP/HP capable receiver is ideal for a wide variety of agricultural applications, including:

- Automatic steering
- High-accuracy machine control
- Use as a rover in an RTK base and rover system

The A220 Smart Antenna has a flexible design to meet your application and integration needs. Easy-to-read LED status indicators for power, GPS and DGPS make the system easy to use. A built-in magnetic mount



allows you to simply place the antenna on your vehicle, connect the power and go!

The A220 Smart Antenna supports a variety of communication protocols for communicating with navigation systems, data loggers, CAN systems and other devices.

Note: Please see "Appendix A: Technical Specifications" on page 30 for horizontal accuracy specifications.

Parts and Connections

Figure 1-2, below, shows an A220 Smart Antenna Kit. The complete kit includes the antenna, cables, mounting plate and documentation needed to install the antenna.



Figure 1-2: A220 Smart Antenna kit.

1: Introducing the A220 Smart Antenna

Parts List

Table 1-1 lists the parts included with your A220 Smart Antenna Kit.

Table 1-1: A220 Smart Antenna Kit Parts List

Part No.	Description	Qty
804-0064	A220 Smart Antenna	1
875-0244	A220 Smart Antenna User Guide	1
875-0243	A220 Smart Antenna Quick Reference Guide	1
051-0236	Power/CAN cable with switch	1
051-0067	Y cable for eDriveX and A220	1
601-1136	Antenna mounting plate	1
677-2002	Tie Straps - 7"	1
478-0012	Magnet	1



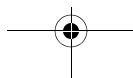
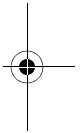
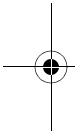
Connectors

Available connectors for communicating with the A220 Smart Antenna include:

- **Circular connector:** The A220 Smart Antenna gets power and communicates with external devices through the supplied circular connector. It includes support for CAN (NMEA 2000), NMEA 0183 and Binary.
- **Radio (optional):** There are three possible radio configurations for the A220 Smart Antenna.
 - No radio kit (basic version)
 - Microhard radio kit
 - Satel radio kit

To purchase an optional radio, please contact your Outback Guidance dealer.







Chapter 2: Installing the A220 Smart Antenna

- Planning the Installation
- Mounting the A220 Smart Antenna
- Connecting the A220 to an Outback S3
- Powering the A220 Smart Antenna
- Connecting the A220 Smart Antenna to External Devices

2: Installing the A220 Smart Antenna

This chapter provides instructions for installing your A220 Smart Antenna. It includes the following sections:

- Planning the installation
- Mounting the A220 Smart Antenna
- Connecting the A220 to an Outback S3
- Powering the A220 Smart Antenna
- Connecting the A220 Smart Antenna to external devices

Planning the Installation

Before installing and using the A220 Smart Antenna, read the following recommendations to ensure the optimal functionality of your A220 Smart Antenna.

- Select the proper antenna location
- Plan the power cable source and route

Select the Proper Antenna Location

Proper antenna placement is critical to positioning accuracy.

To select the proper antenna location:

1. Place the antenna with an unobstructed view of the sky.

Note: An obstructed view of the sky will result in impaired system performance. The GPS engine computes a position based on measurements from each satellite to the internal GPS receiver.

2. Mount the antenna on, or as close as possible to, the center of your point of measurement.
3. Position the antenna as high as possible.

Figure 2-1 shows the ideal location to place the antenna on a vehicle.





Figure 2-1: Antenna placement on a vehicle.

Plan the Power Cable Source and Route

Review the following cautions before planning your power cable route.

- Avoid running cables in areas of excessive heat.
- Keep cables away from corrosive chemicals.
- Do not run the extension cable through door or window jams.
- Keep the cables away from rotating machinery.
- Do not bend excessively or crimp the cables.
- Avoid placing tension on the cables.
- Remove unwanted slack from the extension cable at the receiver end.
- Secure along the cable route using plastic wraps.



Warning! Improperly installed cables near machinery may cause injury or death.



2: Installing the A220 Smart Antenna

Mounting the A220 Smart Antenna

The A220 Smart Antenna features a built-in magnetic mount. Simply place on your vehicle and go!

Connecting the A220 to an Outback S3

There are three ways to use the A220 Smart Antenna with existing Outback Guidance equipment:

1. A220 and Outback S3
2. A220 and Outback S3 with eDriveTC
3. A220 and Outback S3 with eDriveX

The following diagram displays the cable connections for the A220, Outback S3 and eDriveX or eDriveTC.

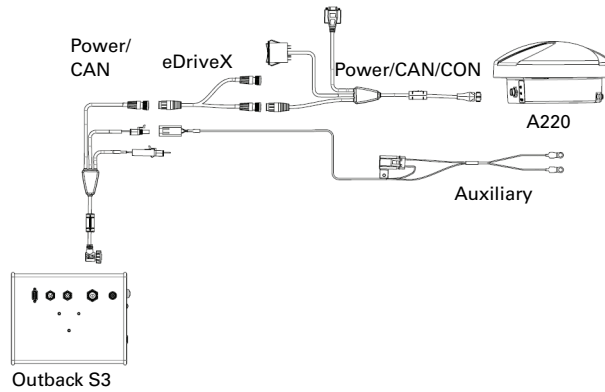


Figure 2-2: A220 cable connections.

A220 and Outback S3

To connect the cables:

Step
Using the A220 Power cable (051-0236), connect the A220 Smart Antenna to the "Console" end of the S3 Power/CAN cable.
Note: It is not necessary to use the Y cable (051-0067) in this case.

A220 and Outback S3 with eDriveTC

To connect the cables:

Step
1. Disconnect the "Console" end of the S3 Power/CAN cable from the eDriveTC console.
2. Using the Y cable (051-0067), connect the eDriveTC console to the S3 Power/CAN cable.
3. Using the A220 Power cable (051-0236), connect the A220 Smart Antenna to the open end of the Y cable.



2: Installing the A220 Smart Antenna

A220 and Outback S3 with eDriveX

To connect the cables:

Step
1. Disconnect the "Console" end of the S3 Power/CAN cable from the eDriveX harness.
2. Using the Y cable (051-0067), connect the eDriveX harness to the S3 Power/CAN cable.
3. Using the A220 Power cable (051-0236), connect the A220 Smart Antenna to the open end of the Y cable.

Powering the A220 Smart Antenna

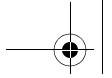
To power the A220 Smart Antenna:

Step
1. Turn on the power switch on the A220 Power cable (051-0236).
2. Check the functionality of the A220 Smart Antenna by monitoring the Power LED.



Warning: Do not apply a voltage higher than 36 VDC. This will damage the receiver and void the warranty.

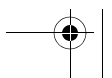
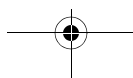
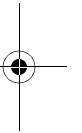
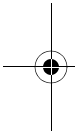


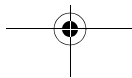
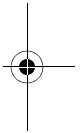
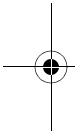


Connecting the A220 Smart Antenna to External Devices

The A220 Smart Antenna can communicate with a variety of external data loggers, rate controllers, yield monitors, or other devices. The external device must be connected through the DB9 serial port of the A220 Power cable (051-0236).

Note: Please see your Outback Guidance dealer or visit the online store at www.outbackguidance.com to select an appropriate adapter cable to meet your needs.







Chapter 3: Operating the A220 Smart Antenna

- Quick Start
- Reading the LEDs
- Configuring GPS Settings with Outback S3
 - Entering a Subscription Code
 - Activating OmniSTAR Service

3: Operating the A220 Smart Antenna

This chapter provides basic configuration and operation instructions for your A220 Smart Antenna. It includes the following sections:

- Quick Start
- Reading the LEDs
- Configuring GPS settings with Outback S3
- Entering a subscription code
- Activating OmniSTAR service

Quick Start

1. Turn the switch on the power cable to the "ON" position. The red LED indicates power. See "Reading the LEDs" on page 17.
2. Configure GPS options. See "Configuring GPS Settings with Outback S3" on page 17.
3. Enter a subscription code (optional). See "Entering a Subscription Code" on page 25.
4. Activate OmniSTAR (optional). See "Activating OmniSTAR Service" on page 26.
5. Wait for the A220 antenna to converge on a differential signal. A green LED indicates DGPS. You're ready to go!




Note: The initial start-up can take anywhere from 5 to 15 minutes, depending on your geographic location. For example, it may take up to 5 minutes to receive a full ionospheric map from SBAS to ensure optimum accuracy.

Note: The A220 Smart Antenna features Hemisphere GPS COAST™ technology, which provides continuous coverage in the event of a temporary differential signal outage.



Reading the LEDs

Table 3-1: A220 Smart Antenna LED Status

LED	Function
	Power Power on
	GPS GPS position calculated (Blinking LED indicates acquiring data)
	DGPS DGPS lock (Blinking LED indicates broadcast or reception of a differential correction from the optional radio)

Configuring GPS Settings with Outback S3

To configure the A220 Smart Antenna for use with Outback S3:

1. Update the Outback S3 software
2. Set basic configuration options
3. Set advanced configuration options



3: Operating the A220 Smart Antenna

1. Update the Outback S3 Software

To update the Outback S3 software:

Step	Screen Item (when applicable)
1. Visit our website at: http://www.outbackguidance.com .	
2. Select Support > Download Center .	
3. Select the latest software version for Outback S3 or A220 Smart Antenna.	
4. Download to your computer and save to disk.	
5. Update the Outback S3 with the new software.	

2. Set Basic Configuration Options

Basic configuration options for the A220 Smart Antenna include:

- DGPS application type (e.g., SBAS, RTK, OmniSTAR)
- NMEA message types
- Radio (optional)




To set basic configuration options:


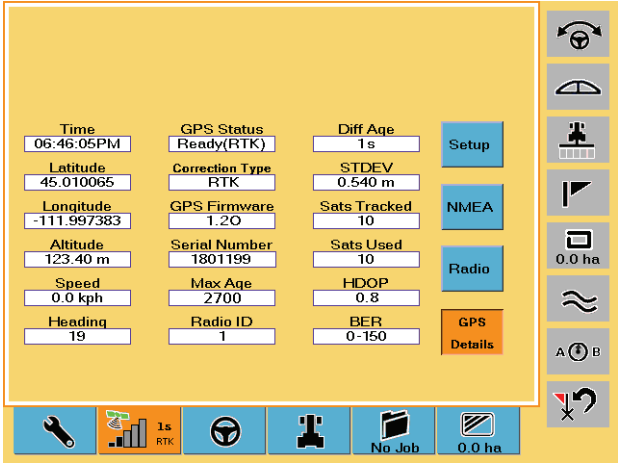

Step	Screen Item (when applicable)
<p>1. Select the GPS Setup screen in the Outback S3.</p> <div data-bbox="646 615 1263 1075" data-label="Image"> </div> <p>Figure 3-1: Outback S3 GPS Setup screen.</p>	



3: Operating the A220 Smart Antenna

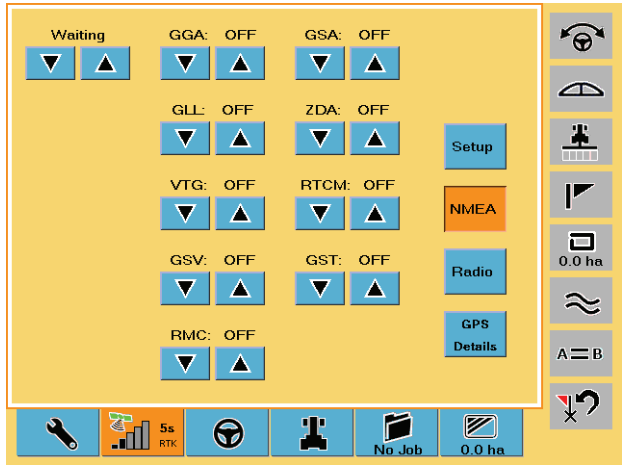
Step	Screen Item (when applicable)
<p>3. In the <i>Choose GPS Application</i> field, select the desired application. Application types include:</p> <ul style="list-style-type: none"> • SBAS • RTK (If purchased). Contact your Outback Guidance dealer to purchase an RTK subscription. <hr/> <p>Note: The  button only appears if RTK is selected as the application type.</p> <hr/> <ul style="list-style-type: none"> • OmniSTAR (If purchased). Contact your Outback Guidance dealer to purchase an OmniSTAR subscription. <hr/> <p>Note: Once you have purchased the optional OmniSTAR from Outback Guidance, you will need to contact OmniSTAR directly to activate your service. The subscription code only enables your A220 Smart Antenna to accept an XP/HP OmniSTAR signal.</p>	


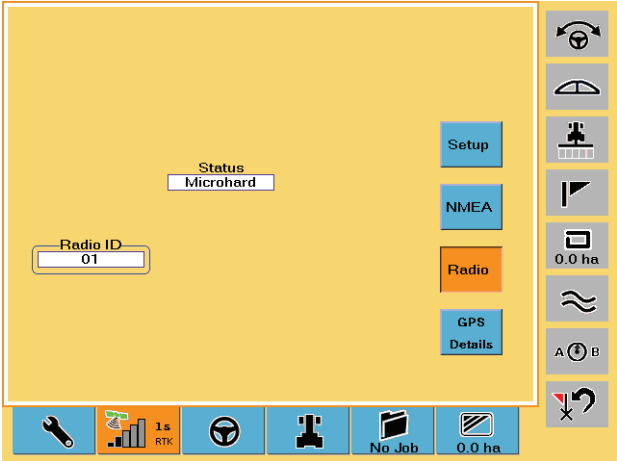


Step	Screen Item (when applicable)
<p>4. Press  to view the GPS settings.</p> <div data-bbox="646 598 1260 1058" style="border: 1px solid black; padding: 10px;">  <p>Figure 3-2: GPS Details screen.</p> </div>	
<p>Note: To return to the main GPS Setup screen, press  .</p>	



3: Operating the A220 Smart Antenna

Step	Screen Item (when applicable)
<p>5. Press NMEA to configure NMEA message outputs and baud rates.</p>	
<p>Figure 3-3: NMEA Message screen.</p> <p>Note: If the A220 is selected as the GPS source, these settings define the configuration settings for outputting data to an external device. See Chapter 2 for more information.</p>	

Step	Screen Item (when applicable)
<p>6. Press  to set radio details (optional - if radio installed)</p>	 <p>Figure 3-4: Radio Setup screen.</p> <p>Note: Advanced users may wish to use Hemisphere GPS' Remote Control Application to configure radio settings. See "Appendix B: Using Remote Control." Remote Control allows you to configure additional options, such as specifying a radio channel, frequency, or manual base station coordinates, depending on the radio installed.</p>



3: Operating the A220 Smart Antenna

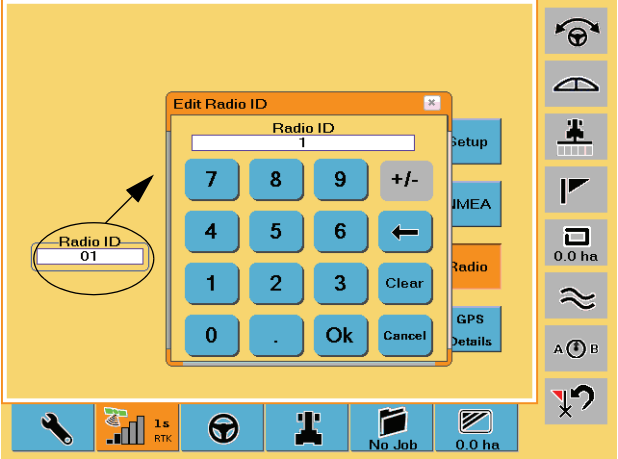
Step	Screen Item (when applicable)
<p>7. In the <i>Radio ID</i> field, enter the Radio ID number.</p>	

Figure 3-5: Radio ID window.

3. Set Advanced Configuration Options

Advanced users may wish to use Hemisphere GPS' Remote Control applications to configure additional radio details. Please see "Appendix B: Using Remote Control."

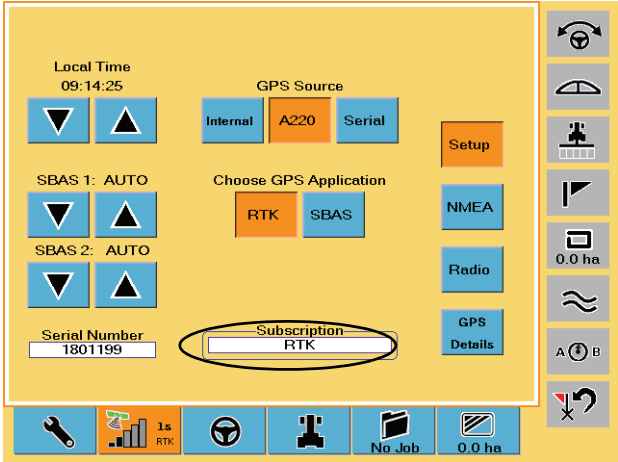
If using the A220 Smart Antenna with a non-Outback product, please see Hemisphere GPS' Technical Reference Guide available at: <http://www.hemispheregps.com> > Support > Ground Products > Download Center. The GPS Technical Reference lists the commands needed to change baud rates, radio changes, NMEA strings and applications.



Entering a Subscription Code

If upgrading the A220 Smart Antenna to enable RTK or OmniSTAR, you must enter a subscription code.

To enter a subscription code:

Step	Screen Item (when applicable)
<p>1. Select the <i>Subscription</i> field on the GPS Setup screen.</p>	 <p>Figure 3-6: GPS Setup screen.</p> <p>Note: Please see your Outback Guidance dealer to purchase a subscription code.</p>



3: Operating the A220 Smart Antenna

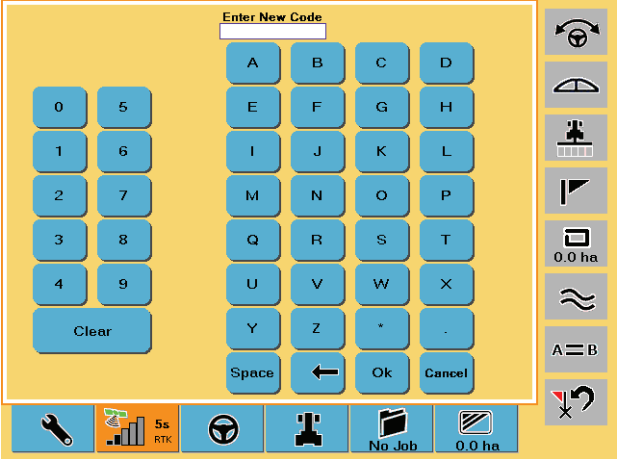
Step	Screen Item (when applicable)
2. Enter the subscription code and press OK.	

Figure 3-7: Subscription Code window.

Activating OmniSTAR Service

OmniSTAR activation is done directly through OmniSTAR. However, the A220 Smart Antenna requires an Outback Guidance subscription code to enable the antenna to accept an XP/HP OmniSTAR signal.

Note: Please see your Outback Guidance dealer to purchase the OmniSTAR subscription code.

Note: If you purchased the optional OmniSTAR subscription directly from the factory, you will see an "HP" button in the *Choose GPS Application* field on the **GPS Setup** screen.



To activate OmniSTAR service:

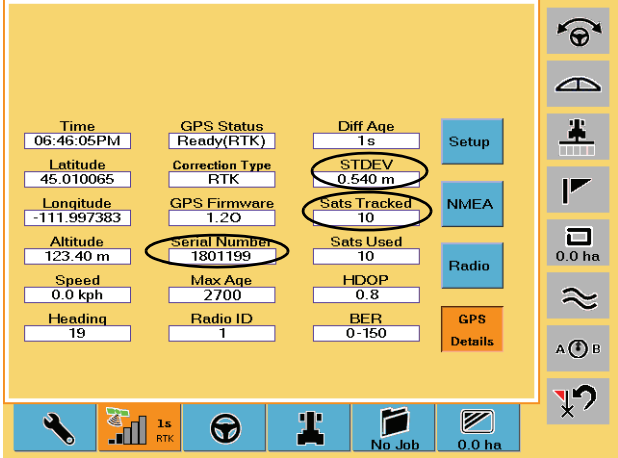
Step	Screen Item (when applicable)
1. Verify that the A220 Smart Antenna is connected to the Outback S3 and that all systems are powered on.	
2. Enter the Outback Guidance subscription code if OmniSTAR was not purchased directly from the factory.	
3. Make sure the vehicle is stationary and the antenna has a clear view of the sky.	
4. Monitor the number of satellites tracked in the <i>Sats Tracked</i> field on the GPS Details screen to ensure a proper GPS signal.	
5. Locate the <i>Serial Number</i> field on the GPS Details screen.	

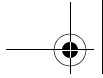
Figure 3-8: GPS Details screen.



3: Operating the A220 Smart Antenna

Step	Screen Item (when applicable)
<p>6. Contact OmniSTAR (www.omnistar.com) to activate service for your region. They will ask you for the serial number from step 5, above.</p> <hr/> <p>Note: It may take some time for the activation to take effect.</p>	
<p>7. Monitor the value in the <i>STDEV</i> field to confirm a converged signal. This may take up to 45 minutes the first time you activate OmniSTAR.</p> <hr/> <p>Note: You can operate the vehicle while waiting for a converged signal, but will experience decreased accuracy.</p> <hr/> <p>Note: If the A220 Smart Antenna is turned on in the same location it was turned off with a converged OmniSTAR signal, the time required to reach maximum accuracy is shortened.</p>	
<p>8. When the system converges on an OmniSTAR signal, you're ready to go!</p>	



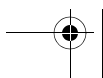
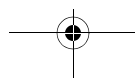
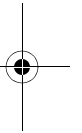
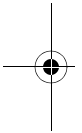


Appendices

Appendix A: Technical Specifications

Appendix B: Using Remote Control

Appendix C: Sales and Service Information



Appendices

Appendix A: Technical Specifications

Tables A-1 through A-6 provide the power, mechanical, communication, environmental and DGPS specifications for the A220 Smart Antenna.

Table A-1: Power Specifications

Item	Specification
Input voltage	12 - 36 VDC
Power consumption	< 5 W @ 12 VDC (typical, without radio)
Current consumption	400 mA @ 12 VDC (typical, without radio)
Power connector	Cable mount environmentally sealed

Table A-2: Mechanical Specifications

Item	Specification
Height	15 cm (5.91 in)
Width	24.4 cm (9.6 in)
Weight	1.8 kg (4 lbs)
Mounting Options	Magnetic mount

Table A-3: I/O Communications

Item	Description
Serial ports	2 full-duplex RS232
CAN port	NMEA 2000 broadcast
Pulse output	1 PPS (HCMOS, active high, rising edge sync)
Baud rates	4,800 - 115,200



Table A-3: I/O Communications

Item	Description
Differential correction I/O protocol	Hemisphere GPS Proprietary DFX and ROX RTCM SC-104 v3 CMR+
Data I/O protocol	NMEA 0183, SLX binary and NMEA 2000
Ground speed output	Range: 0.8 - >322 Km/h (0.5 - >200 mph) Signal: Opto-isolated pulse out Frequency Conversion: 94 Hz/m/s (28.65 pulse per foot traveled)
Event mark output	HCMOS, active low, falling edge sync, 10 k-ohm, 10 pF load

Table A-4: Environmental Specifications

Item	Specification
Operating temperature	-30° C to +65° C (-22° F to + 149° F)
Storage temperature	-40° C to +85° C (-40° F to + 185° F)
Humidity	EP455 Section 5.13.1 Humidity
Enclosure	Enclosure IP67
Compliance	FCC, CE
Shock	EP455 Section 5.14.1 Operational
Vibration	EP455 Section 5.15.1 Random
EMI certification	FCC part 15, E-Mark



Appendices

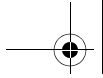
Table A-5: GPS Sensor Specifications

Item	Specification
Receiver type	L1 and L2 RTK carrier phase smoothing (Patented COAST™ technology during differential signal outage)
Channels	12 L1CA GPS 12 L1P GPS 12 L2P GPS 3 SBAS or 3 additional L1CA GPS
Update rate	1 - 20 Hz positions (10 Hz standard)
Startup time	Cold start: < 60 s Warm start: 30 s Hot start: 10 s (typical)
Satellite reacquisition	< 1 s
Differential options	SBAS, autonomous, external RTCM, RTK, OmniSTAR (XP/HP)

Table A-6: Horizontal Accuracy

DGPS Source	RMS (67%)	2 DRMS (95%)
RTK ^{1,2}	10 mm + 1 ppm	20 mm + 2 ppm
OmniSTAR HP ^{1,3}	0.1 m	0.2 m
SBAS (WAAS) ¹	0.3 m	0.6 m
Autonomous, no SA ¹	1.2 m	2.5 m



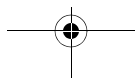
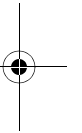
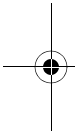


Notes:

¹Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity

²Depends also on baseline length

³Requires a subscription from OmniSTAR



Appendices

Appendix B: Using Remote Control


Using Hemisphere GPS' Remote Control desktop application provides a user-friendly interface to configure the desired GPS settings.

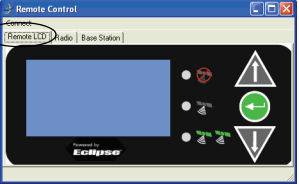
To use Remote Control:

1. Connect the A220 Smart Antenna to the PC
2. Use Remote Control to Configure Basic Settings
3. Use Remote Control to Configure an Optional Radio

1. Connect the A220 Smart Antenna to the PC

To connect the PC to the antenna:

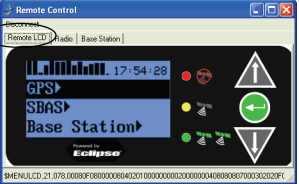
Step	Screen Item (when applicable)
1. Install the Remote Control application on the PC. (Available at www.outbackguidance.com > Support > Download Center.)	
2. Connect the PC to the antenna unit using a serial cable.	
3. Open the Remote Control application on the PC.	

Step	Screen Item (when applicable)
<p>4. Select the proper port from the Connect menu. The Connect menu displays a list of all available serial ports on the computer. Once a port is selected, the software will automatically find the antenna.</p>	

2. Use Remote Control to Configure Basic Settings

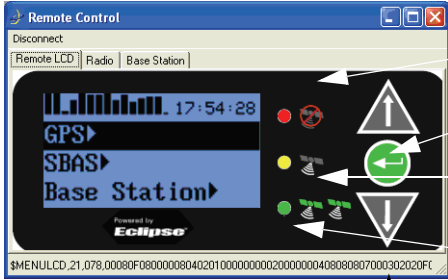
Note: Setting options are detailed in the next section, "Configuring GPS Settings."

To configure basic settings:

Step	Screen Item (when applicable)
<p>1. Select the Remote LCD tab to configure the settings.</p>	



Appendices

Step	Screen Item (when applicable)
2.	Use the arrow keys on the Remote LCD screen to scroll through the configuration menus and adjust your settings.
	
<p>Note: Please be patient when using Remote Control. There may be a delay when pressing the arrow keys while the application communicates with the antenna unit.</p>	

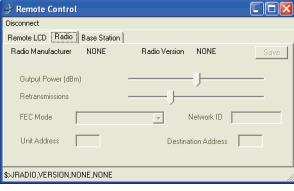
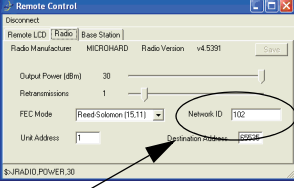
3. Use Remote Control to Configure an Optional Radio

Advanced users may need to configure an optional radio. The radio will automatically be set up as a rover (receiving) radio for units running the RTK application.

Warning! Do not try to configure a radio unless you are an advanced user. Improperly configuring settings may cause the radio to stop communicating.

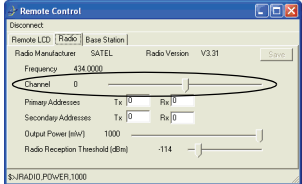


To configure an optional radio:

Step	Screen Item (when applicable)
<p>1. Select the Radio tab. This tab is only available if a radio is installed.</p>	
<p>2. Configure the radio settings.</p> <ul style="list-style-type: none"> If a <i>Microhard</i> radio is installed, enter the desired Network ID. <hr/> <p>Note: The base and all rover units in a network must have the same radio configuration for FEC mode and Network ID along with compatible unit and destination addresses to communicate with one another.</p>	 <p><i>The "channel" displayed on the Remote Control display corresponds to the Network Address minus 101. This is done to maintain backwards compatibility with the BaselineX products. For example, to configure a BaselineX channel of 15, enter a Network Address of 116.</i></p>



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Step	Screen Item (when applicable)
<ul style="list-style-type: none"> If a <i>Satel</i> radio is installed, adjust the frequency of the radio by sliding the channel selector left or right. <hr/> <p>Note: The base and all rover units in a network must have the same radio channel along with compatible Tx and Rx addresses to communicate with one another. An address of zero indicates all radios on the chosen channel.</p> <hr/>	
<p>3. Press Save to save the radio parameters.</p>	



Appendix C: Sales and Service Information

Contacting the Factory

U.S:

Outback Guidance
Hemisphere GPS
2207 Iowa Street
Hiawatha, KS 66434
USA

Canada:

Outback Canada
Hemisphere GPS
3244 Portage Avenue
Winnipeg, MB R3K 0Y9
CANADA

ONLINE: <http://www.outbackguidance.com>

PHONE: Monday Through Friday 8AM-5PM U.S. Central Time

- **U.S:** 1-800-247-3808 (Customer Service & Ordering)
- **Canada:** 1-866-888-4472 (Customer Service & Ordering)
- **From all other countries:** 01-785-742-2976

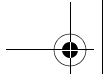
E-MAIL: 24 hours/7 days a week, your inquiry will receive a response from one of our Customer Support Representatives within one business day.

- **Sales:** outbacksales@outbackguidance.com
- **Customer Service:** outbackcs@outbackguidance.com
- **Website Feedback:** outbackweb@outbackguidance.com

FAX: 24 hours/7 days a week, your inquiry will receive a response from one of our Customer Support Representatives within one business day.

- 1-785-742-4584



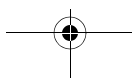
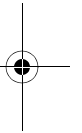
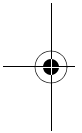


Appendices



U.S. REGIONAL SALES OFFICES:

- Outback North - Fargo, ND 1-888-825-6031
- Outback South - Hewitt, TX 1-866-857-4448



Outback A220 Extended Service Plan (ESP) Summary

U.S. and Canada Only

Item	Standard Term	Extended Term
Price	Free	\$399
Term	1 Year ESP	3 Year ESP (Standard +2 Years)
Exchange Service	Yes	Yes
Software Revision Updates	No Charge	No Charge
Software Revision Installation	Provided by Customer or OGCTM	Provided by Customer or OGCTM
Damage During Shipments	Covered	Covered
Damage After Customer Receipt	Not Covered	Not Covered
Shipping, Outback to Customer	Outback Paid (Next Day Air & Saturday* Delivery)	Outback Paid (Next Day Air & Saturday* Delivery)
Shipping, Customer to Outback	Outback Paid (Ground Service)	Outback Paid (Ground Service)

* Saturday delivery may not be available in all service areas.



Appendices

Limited Outback A220 Extended Service Plan

The Outback A220 ESP (U.S. and Canada only) applies only to the non-software portions of the electronic components of the product, including the console and related cables. Coverage for the mechanical portions of the Outback A220 is described in the warranty notice. The limited plan term is one-year standard, or three-years extended if purchased at the time of the original order, beginning on the date of invoice to the original purchaser.

Damage caused by shipping the product(s) to the original purchaser is covered under this limited plan. Otherwise, this limited plan does not cover damage due to external causes, including accident, abuse, misuse, problems with electrical power, servicing not authorized by Hemisphere GPS, usage not in accordance with product instructions, failure to perform required preventive maintenance and problems caused by use of parts and components not supplied by Hemisphere GPS.

This limited plan does not cover any items that are in one or more of the following categories: software (except for Hemisphere GPS authorized revision updates), external devices (except as specifically noted), accessories or parts added to an Outback A220 system after the system is shipped from Hemisphere GPS, accessories or parts that are not installed in the Hemisphere GPS factory.

Hemisphere GPS will provide, on an exchange basis and subject to the Hemisphere GPS Exchange Policy in effect on the date of the exchange, replacement parts (up to and including a complete Outback A220 system) for the Outback A220 product(s) covered under this limited plan when parts require replacement. To request service, you must call Hemisphere GPS (U.S. 800-247-3808, Canada 866-888-4472) or go to outbackguidance.com for information, within the plan period. If replacement is required, Hemisphere GPS will issue a Return Material Authorization Number and will ship by UPS Next Day Air & Saturday Delivery the replacement part(s) within 1 business day. You must ship by UPS Ground Service collect, the original product(s) back to Hemisphere GPS in this packaging. For Canadian customers, Saturday delivery is not available and the shipping carrier is Purolator.

In any instance in which Hemisphere GPS issues a Return Material Authorization Number, Hemisphere GPS must receive the original



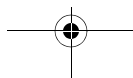
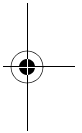
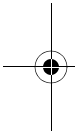
Outback A220 Smart Antenna User Guide

part(s) prior to the expiration of the plan period in order for the replacement(s) to be covered by the limited plan. Failure to return original part(s), for which replacement(s) have been sent, within 30 days of initial shipment, will result in the issuance of an invoice for the cost of the sent part(s). Failure to pay the invoice, or return the part(s), will result in cancellation of this limited plan.

Hemisphere GPS owns all parts removed from repaired products. Hemisphere GPS uses new and reconditioned parts made by various manufacturers in performing service repairs and building replacement products. If Hemisphere GPS repairs or replaces a product, its plan term is the remainder of the limited plan term.

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