

# **Altus NR3 with SurvCE**

Application Note





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# 1. Introduction

#### 1.1. Foreword

This application note describes how the Altus NR3 can be configured with Carlson SurvCE. Septentrio recommends using version 6.01 (or higher) of the controller software, the latest supported version can be downloaded from <u>our website</u>. The most recent receiver documentation (i.e. User Manual, Reference Guide) and firmware upgrades can similarly be found on our website.

#### 1.2. Support

For first-line support, please contact your Septentrio dealer. Further information can be found on the Septentrio support website for documentation and firmware upgrades or by contacting Septentrio Technical Support group:







### 2. Install SurvCE

#### 2.1. SurvCE installation

- 1) To connect a Windows Mobile device to the PC, <u>Windows Mobile Device Center</u> needs to be installed.
- 2) Power on the Windows Mobile device and connect it to a PC. Wait for Windows Mobile Device Center to connect.
- 3) Once the PC connection the Windows Mobile device has been established, double click on the "Survce\_install.exe" file to begin installation.



Figure 2-1: SurvCE executable

4) The installation will begin by transferring the files to the data collector. Agree to the license and click next. When the transfer is complete, the data collector may be disconnected from the PC.

Setup Wizard	
This wizard will guide you through the installation of SurvCE	Press Page Down to see the rest of the agreement.
urvCE5 5.06.6.	lianse Acreement
The installation target device MUST be connected. Click Next	Copyright 20192-2016 Carlson Software All Rights Reserved
to continue.	CALIFICAL DEAD THIS NOTICE DECORE LISTIC SOFTWARE
	CASTOR READ THE NOTICE BE ONE DEAN SOFTWARE
	<ul> <li>Please read the following Software License Agreement before using the SOFTWARE. Listen this SOFTWARE following and conditions</li> </ul>
P	the source was a source of the
	ENDLISER LICENSE AGREEMENT FOR CARLSON SOFTWARE
No alla anti	If you accept the terms of the agreement, select the first option below. You must accept the agreement to install SurVCE 5.05.6. Click Next to continue.
Canson	I accept the terms of the License Acreement
	I do not accept the terms of the License Agreement
	Nullsoft Install System v2.46
Next > Cancel	Canada Navak to Constant
	Concer Here's
Carlson Person and the SurvE 5.06.6 is been installed.	Select a program's check box if you want to install it on your mobile device, or clear the check box if you want to menove the program from your device.
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Intelling           Boxes werk SurvCE 5.06.6 is being installed.           You MUST tap OK on data collector when CAB install completes.           Boxes and Call Completes.	Select a program's check box if you want to install it on your mobile device, or clear the check box if you want to monove the program from your device. Note: If a program that you installed is not lated, the program was not designed to be used on your mobile device. Application Downloading Complete Please check, your mobile device screen to see if additional steps are necessary to OK Space available on device: Install program into the default installation folder

Figure 2-2: SurvCE installation





5) On the Windows Mobile device, if prompted first remove previous version, then SurvCE will start installing. After installation, tap on the Windows start button and locate SurvCE. Double-click to open the program.

Installing Carlson Software SurvCE.CAB	Carlson Software SurvCE.CAB was successfully installed on your device.
	If you need more storage space, you can remove installed programs.
Installation         Image: Construct of the previous version of Carlson Software SurvCE will be removed before the new one is installed. Select OK to continue or Cancel to quit.         OK         Cancel	
<b>#</b>	ок

Figure 2-3: SurvCE installation on a Windows Mobile device

## 2.2. SurvPC installation

Installation of SurvPC is straightforward. Download the "SurvPC\_install.exe" file and double-click to initiate the installer wizard.



## 3. Configure SurvCE

#### 3.1. Start a new project

Upon opening SurvCE, users can choose to either create a new job or select an existing one. Select appropriate job settings and continue without connecting to the device.

SOB. TESTINKS					
File	Equip	Survey	COGO	Road	
1 Job	🖲 SurvPC				٢
2 Job Settings		Continue La	ast Job		2
3 Points		Select New/Ex	isting Job		1
4 Raw Data		9	Write Note		N
5 Feature Code Li	st	0	Exit		-
					-
🛋 Job Settina	s				
Sob Setting	s Format O	ptions Stake			X
Job Setting New Job Syste Distance:	s m Format O	ptions Stake			X
Job Setting New Job Syste Distance: Display Input	S Format O US Survey Fe Decimal Fee	ptions Stake			X
Stating New Job Setting New Job System Distance: Display Input Angle:	S Format O US Survey Fo Decimal Feee Degrees, Min	ptions Stake et t nutes, Seconds	] Time:	Local	
Dob Setting New Job Syste Distance: Display Input Angle: Lat/Lon: Zero	s Format O US Survey Fe Decimal Fee Degrees, Min Degrees, Min	ptions Stake eet t nutes, Seconds nutes, Seconds	Time:	Local Date/Time	
New Job Setting New Job Syste Distance: Display Input Angle: Lat/Lon: Zero Azimuth:	S Format O Decimal Ree Degrees, Min Degrees, Min North	ptions Stake eet t t nutes, Seconds nutes, Seconds	Time:	Local Date/Time	•
Job Setting New Job Syste Distance: Display Input Angle: Lat/Lon: Zero Azimuth: Projection:	S III Format O US Survey Fr Decimal Fee Degrees, Mil Degrees, Mil North	ptions Stake Ret t nutes, Seconds nutes, Seconds	firme:	Local Date/Time	

Figure 3-1: Job set-up in SurvCE

# 3.2. Bluetooth/serial connection to the Altus NR3

Users can select to connect to the Altus NR3 either via serial cable or Bluetooth to the controller.

- 1) In the **Equip** menu select the **GPS Rover** option to configure your receiver as a rover.
- 2) In the **Current** tab, select the Manufacturer and Model as shown in the screenshot below for the Altus NR3.

lob:test					
Eile	Equip	Survey	COGO	Road	
1 Total Station		*🌋 6 L	ocalization		2
2 GPS Base		*I Z N	Ionitor/Skyplot		<b>1</b>
3 GPS Rover		в т	olerances		17
4 GPS Utilities		Т <u>р</u> 9 Р	eripherals		- 23
5 Configure		8 0 A	bout Carlson Survi	PC	Ô

Figure 3-2: SurvCE connection set-up



3) In the **Comms** tab the model and type of connection can be further specified. When selecting a cable connection, the set-up is straightforward. You can select either Cable (COM) or USB connection. Typically, COM1 and COM2 are reserved for serial cable connection. For Bluetooth connections, select as **BT type** "Windows Mobile".

신 GPS Rove	ir	TI) 🔽 🔀	🦲 I	Bluetooth Devi	ces			🚯 🕄 🗙
Current Con	nms Receiver RTK			Select Rover BT De	vice Receiver ID	Addroce	DIN	
type.	Cable Bluetooth			APS-3_21758	APS-3_21758	00:a0:96:38:c4:a	6	
BT Type: Device:	Windows Mobile Altus_NR3-3023677	-		AP53G-25018	AP53G-25018	00:a0:96:3d:62:f	e	_
				Altus_NR3-3023677	Aitus_NR3-302367	7 esteb:11:00:96:3	29	
				Fi	Device PIN		Delete Device	
				30	Device Filv		Set Device Name	

Figure 3-3: Altus NR3 Bluetooth set-up in SurvCE

4) Select the appropriate Bluetooth device, click on 'Set Device PIN' and set the PIN to '1234'. This is the default Bluetooth pairing code, although this is configurable by users. Note that on Windows Controllers this often prompts a step-by-step configuration of the new Bluetooth device.

Bluetooth Devices	Bluetooth Devices	83
Please select from these available devices:	Select Rover BT Device	
APS-3_21715	Receiver Name Receiver ID	Address PIN
AP53G-25018	APS-3_21758 APS-3_21758 00	0:a0:96:38:c4:a6
Altus_NR2-3009503	APS3G-25018 APS3G-25018 00	0:a0:96:3d:62:fe
Altus_NR3-3023677	Altus_NR3-3023677 Altus_NR3-3023677 e8	8.eb:11.0b.96:39
PC60B	Find Device	Delete Device
	Set Device PIN	Set Device Name

Figure 3-4: Altus NR3 Bluetooth set-up in SurvCE





#### 3.3. Setup Altus NR3 for RTK

In the **Receiver** tab select antenna height (antenna type is automatically filled in for the Altus NR3 antenna). Note that if users want to incorporate Galileo and Beidou in their solution, these need to be selected via the **Advanced** button.

膨 GPS Rover	T\$ 🔽 🧧	🔀 🔍 Advanced	
Current Comms Red	ceiver RTK		
Antenna Type:	[SEPALTUS_NR3 NONE] Integrate O Slant	Tag Stored Points in Log File	
Antenna Height:	0 ft Abs. 68.5mm	Site Duration:	1 s
Elevation Mask:	10 *	Save Config	Enable WiFi
Position Rate:	1 Hz	Send file after config	No File Selected!
	Auvaliceu	Configure NMEA Output	Configure Constellations
	Advanced		
	Advanced		
	Advanced Use GPS		×
	Use GPS		×
	<ul> <li>➢ Advanced</li> <li>☑ Use GPS</li> <li>□ Use QZSS</li> <li>□ Use SBAS (WAAS,EGNOS,etc.)</li> </ul>		×
	Advanced Use GPS Use QZSS Use SBAS (WAAS,EGNOS,etc.) Use Beidou		×
	<ul> <li>Advanced</li> <li>Use GPS</li> <li>Use QZSS</li> <li>Use SBAS (WAAS,EGNOS,etc.)</li> <li>Use Beidou</li> <li>Use GLONASS</li> </ul>		

Figure 3-5: SurvCE cell modem configuration of the Altus NR3

In the **RTK** tab modem and network settings can be configured.

1) Select "Internal GSM" in **Device** and configure the Altus NR3 with the APN settings of your mobile provider.

Current         Comms         Receiver         RTK           Device:         Internal GSM         Image: Comms         Image: Comms
Device: Internal GSM IMP
Network: NTRIP Provider: internet.p
RTK Port: Internal Baud: 19200 Pin: 1234
PUK:
Message Type: RTCM V3.0 Use 1021-1027 Dial Mode: Auto
NtripInfoCaster: FLEPOSVRS31

Figure 3-6: SurvCE cell modem configuration of the Altus NR3



2) In the **Network** settings select "NTRIP" and click on the configuration icon to the right of it. Enter NTRIP settings, hit the green check and select the appropriate Mountpoint from the source-table. Click on the green check to finish the configuration and, if everything went well, the controller will display a 'successful connection' message.

		Ŭ		S NTRIP Broa	dcasters			
Current Comms	Receiver RTK			Name:	NtripInfoCaster	. Ne	w	Delete
Device:	Internal GSM			IP addr:	ntrip.flepos.be	Port:	2101	
Network:	NTRIP	5 - 29		User:	septentrio-support01	Pwd:	********	***
RTK Port:	Internal Bauc	:  19200		Broadcaster Info Identifier:	rmation			
Message Type: NtripInfoCaster: FLEP	RTCM V3.0	Use 1021-1027		Operator: Position Misc:	0.005 0.00W,			
				NMEA:	Rover position not needed.			
		Bacec for Nfrinin	TOL SCION					
		Name:	LEPOSVRS31GLO	- New Password:	Delete			
		Name: User Name:	ELEPOSVRS31GLO	• New Password:	Delete			
		Name:	LEPOSVRS31GLO Elepos_Vrs_Rtcm31_GpsGlo ELEPOSVRS31GLO	Password:	Delete			
		Name: User Name: Identifier: Short Id: Type:	LEPOSVRS31GLO Plepos_Vrs_Rtcm31_GpsGlo FLEPOSVRS31GLO 5PS+GLONASS L1L2 Trimble	New     Password:     VRS?Net Flepos	Delete			
		Name: User Name: Identifier: Short Id: Type: Format: F	LEPOSVRS31GLO -lepos_Vrs_Rtcm31_GpsGlo -LEPOSVRS31GLO SPS+GLONASS L1L2 Trimble RTCM 3.1 1004(1),1005/1007/	Password: VRS?Net Flepos (5),PBS(10)	Delete			
		Name: User Name: Identifier: Short Id: Type: Format: Position:	LEPOSVRS31GLO Hepos_Vrs_Rtcm31_GpsGlo FLEPOSVRS31GLO SPS+GLONASS L1L2 Trimble RTCM 3.1 104(1),1005/1007/ 51.05N 3.73E BEL	VRS?Net Flepos (5),PBS(10)	Delete			

Figure 3-7: SurvCE NTRIP settings of the Altus NR3

## **3.4. Verify Configuration**

To check whether the configuration was successful and the Altus NR3 is receiving RTK corrections, go to the **Monitor/Skyplot** menu and checking the PVT status and Base selection in the **Quality** tab.

lob:test				<b>T</b>	Monitor/Sky	Monitor/Skyplot	Monitor/Skyplot	Monitor/Skyplot
Eile	Equip	Survey	COGO Roa	ad	Quality Position	Quality Position SATView	Quality Position SATView SATInfo Ref	Quality Position SATView SATInfo Ref
1 Total Station		* 🔏 6	Localization	8	Status: Latency:	Status: FIXED Latency: 1.0s	Status: FIXED Si Latency: 1.0s Lo	Status:         FIXED         Satellites:           Latency:         1.0s         Local Elev:
2 GPS Base		*I, z	Monitor/Skyplot	<b>1</b>	Base Selection: Local Northing:	Base Selection: Local Northing:	Base Selection: FLEPOSVR531GLO Local Northing: 48112361.3334ft	Base Selection: FLEPOSVRS31GLO Local Northing: 48112361.3334ft
3 GPS Rover		8	Tolerances	1	HDOP:	HDOP: 0.75	HDOP: 0.75 VDOP: TDOP: 0.85 PDOP:	HDOP: 0.75 VDOP: 1.18 TDOP: 0.85 PDOP: 1.40
4 GPS Utilities		و 🥡	Peripherals	7	GDOP: HSDV:	GDOP: 1.64 HSDV: 0.024ft	GDOP: 1.64 Dis	GDOP: 1.64 HSDV: 0.024ft
5 Configure			About Carlson SurvPC	1	VSDV:	VSDV: 0.032ft	VSDV: 0.032ft	VSDV: 0.032ft

Figure 3-8: SurvCE Monitor/Skyplot

