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## 3.4.0 Firmware

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### Upgrade Manual

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Revision 1.01

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## 1 Introduction

This Manual describes the upgrade procedure of an APS-3, APS-3G, APS-3L or APS-T to 3.4.0 Firmware.

### 1.1 Requirements

The Firmware upgrade process needs the following:

- Serial cable P/N: 10029
- APS-3 on external 12V power or fully charged batteries
- Firmware 3.4.0 package
  - On a USB stick or downloaded from the Altus website
- RxControl as part of the RXTools package
  - On a USB stick or downloaded from the Altus website

### 1.2 Overview

To upgrade the GNSS firmware, three main actions must be completed.

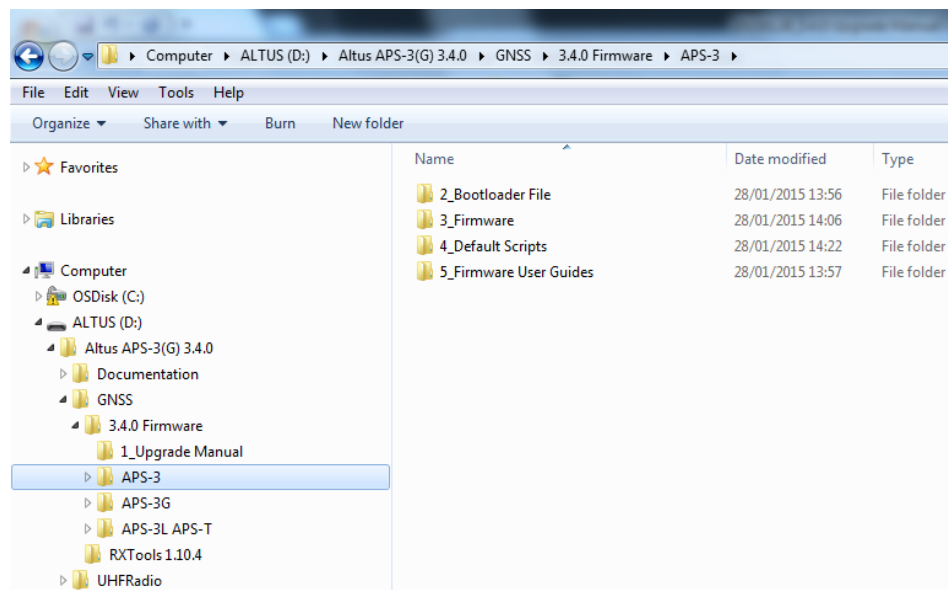
- Install 1.0.4 bootloader
- Install 3.4 firmware
- Load appropriate APS-3 default configuration script file



## 2 Setup

1. Connect the UHF antenna to APS-3.
2. Power on the APS-3.
3. Connect the 10029 cable to APS-3 and PC.
4. Start RxControl and connect to the APS-3 on the appropriate COM port.
5. Locate the files needed on the USB stick.

The files needed for the upgrade can be found in the folders as shown below in Figure 1.



*Figure 1: USB stick folders*



## 3 Procedure

### 3.1 Bootloader Upgrade

1. Once connected, click on the File → 'Upgrade Receiver using Current Connection'.

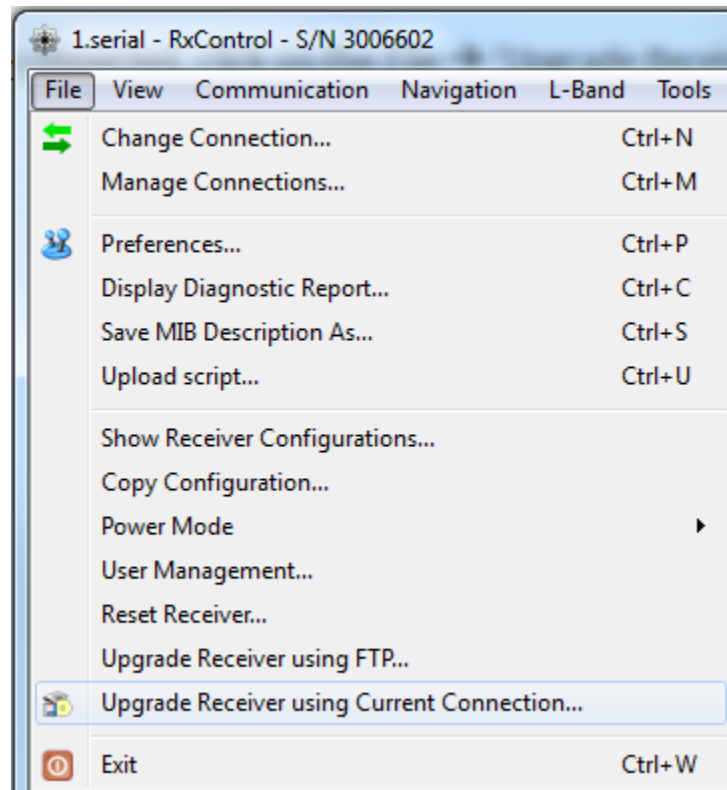


Figure 2: File--> Upgrade

2. Click 'OK' on the next pop-up window.



Figure 3: Click 'OK'

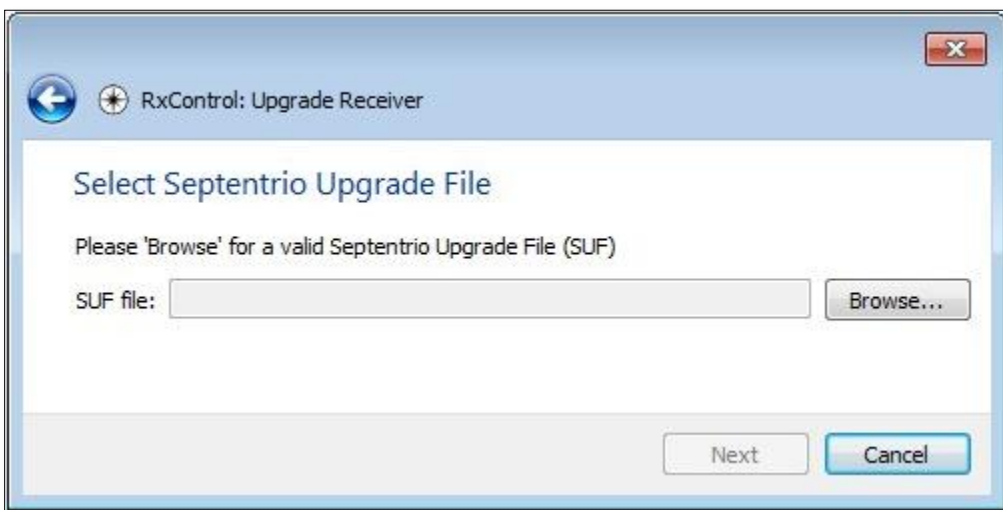


3. Click 'Next' on the Introduction pop-up window.



*Figure 4: Click Next*

4. Select 'Browse' on the Select Septentrio Upgrade File window.



*Figure 5: Select Browse*



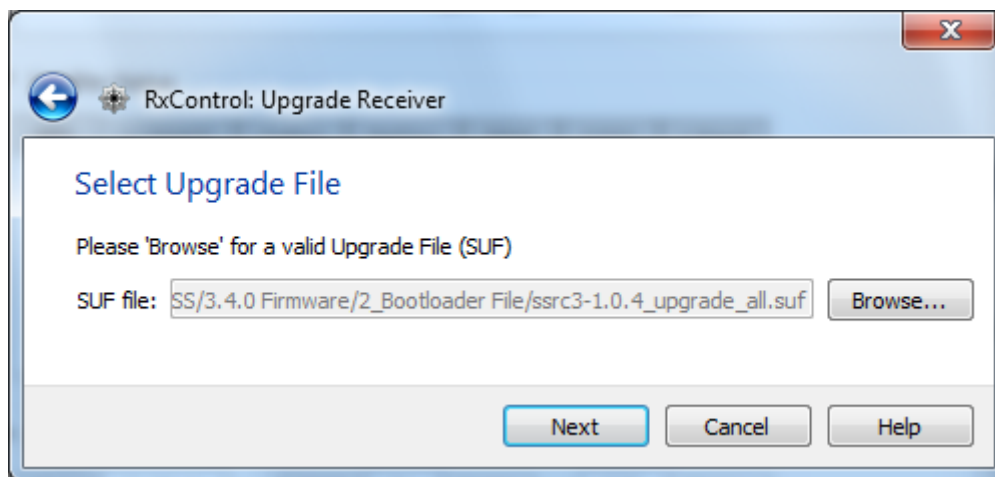
5. Browse to the appropriate bootloader .suf file.

The bootloader file can be found in the folder:

APS-3 :        \GNSS\3.4.0 Firmware\APS-3\2\_Bootloader File

APS-3-G:       \GNSS\3.4.0 Firmware\APS-3G\2\_Bootloader File

APS-3L APS-T: \GNSS\3.4.0 Firmware\APS-3L APS-T \2\_Bootloader File



*Figure 6: Bootloader '.suf' File*

6. Click 'Next'



*Figure 7: Click Next*

7. Click Upgrade; this process will take 1-3 minutes.

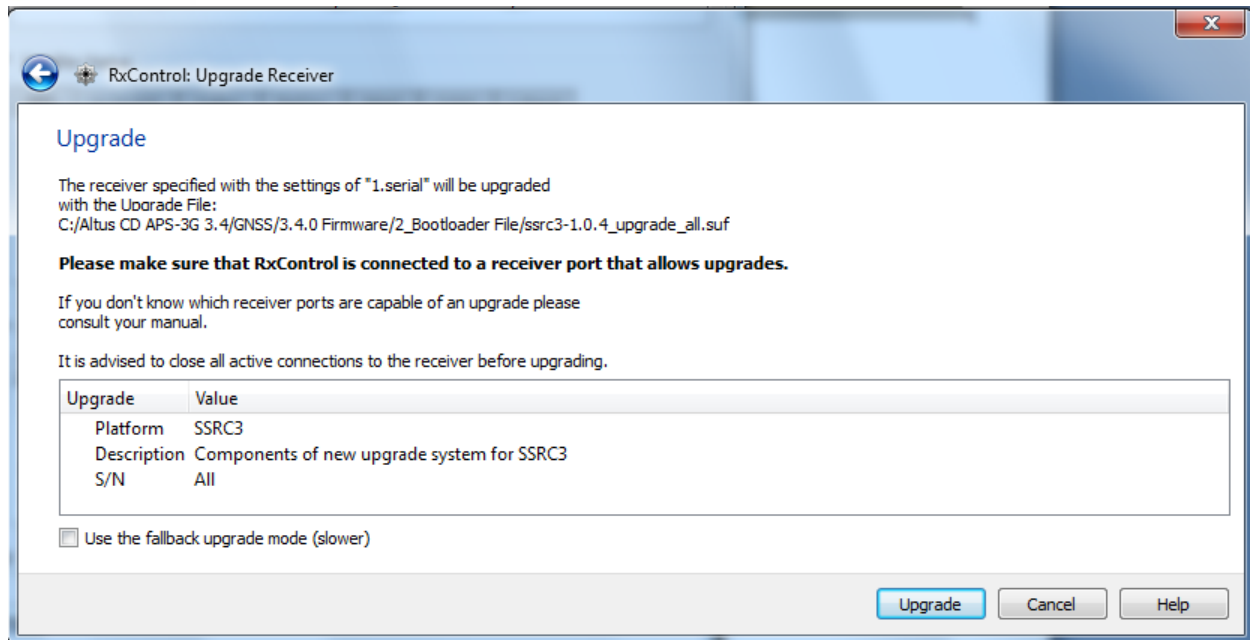


Figure 8: Click 'Upgrade'

8. Let the process complete.

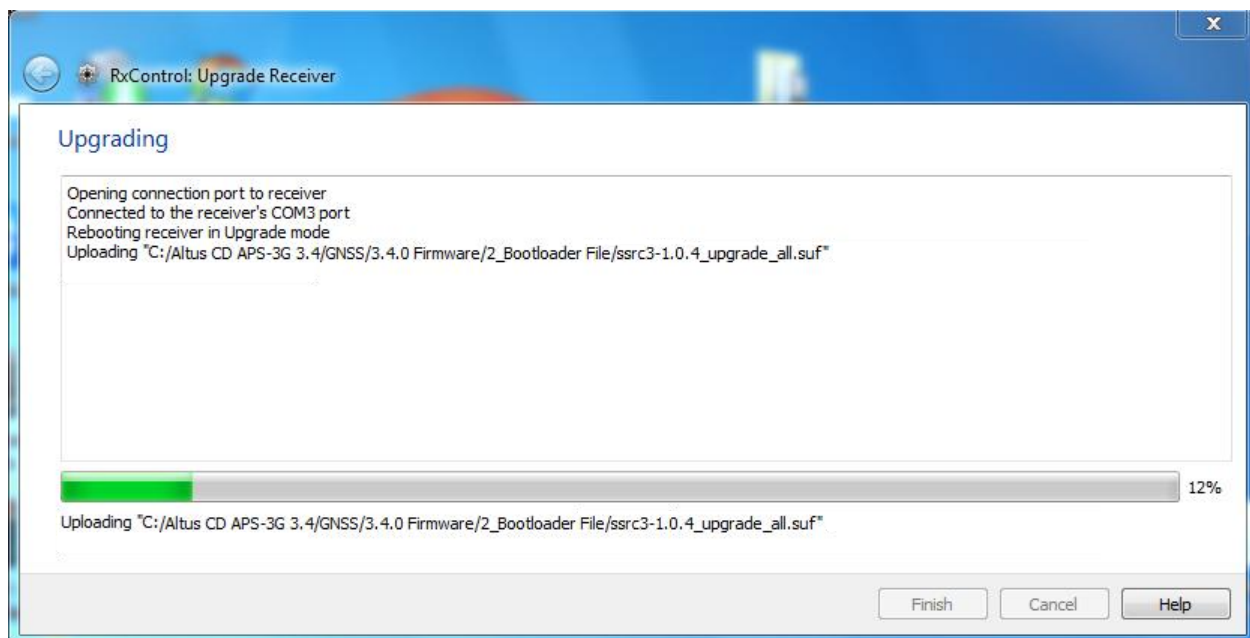
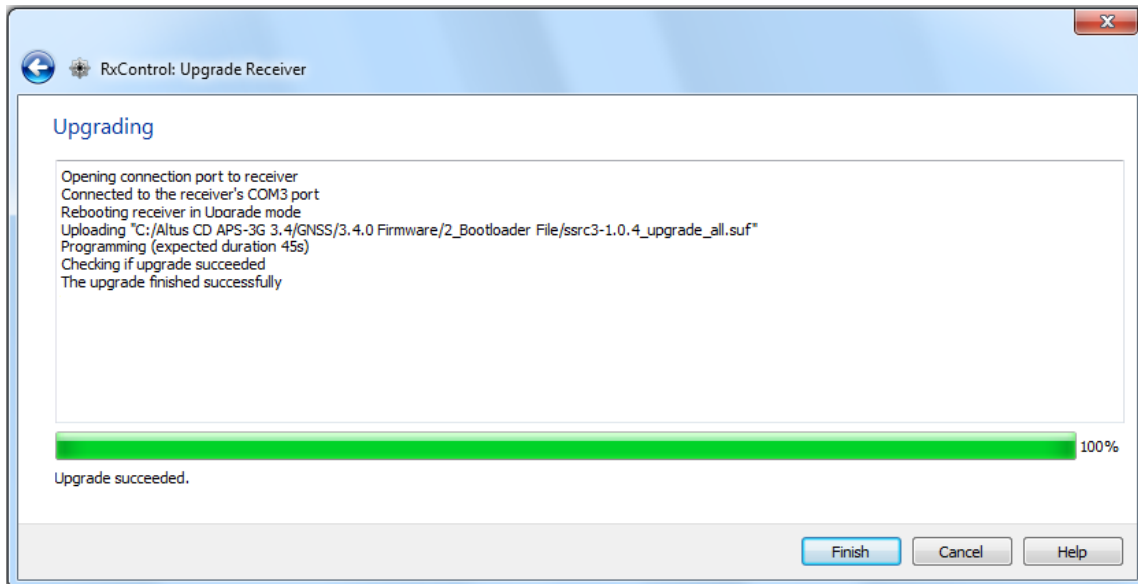


Figure 9: Upgrading...



## 9. Bootloader firmware upgrade complete.

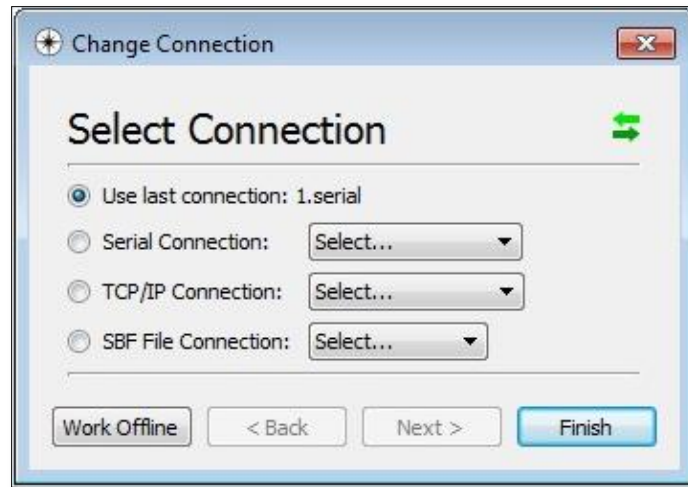


*Figure 10: Bootloader Firmware Upgrade Complete*



## 3.2 Firmware Upgrade

1. Reconnect to RxControl using the last connection.



*Figure 11: RxControl*

2. Repeat the procedure as described in section “3.1 Bootloader Upgrade” for the firmware file.

This firmware can be found in the folder:

APS-3 :        \GNSS\3.4.0 Firmware\APS-3\3\_Firmware

APS-3-G:      \GNSS\3.4.0 Firmware\APS-3G\3\_Firmware

APS-3L APS-T: \GNSS\3.4.0 Firmware\APS-3L APS-T \3\_Firmware



### 3.3 APS-3 Default Configuration Upload.

After the firmware upgrade is done, the GNSS receiver must be configured for operation within the APS-3. The configuration is done with a script file of the commands. The final item is to upload the APS-3 default configuration file.

1. Open RxControl to the last connection.

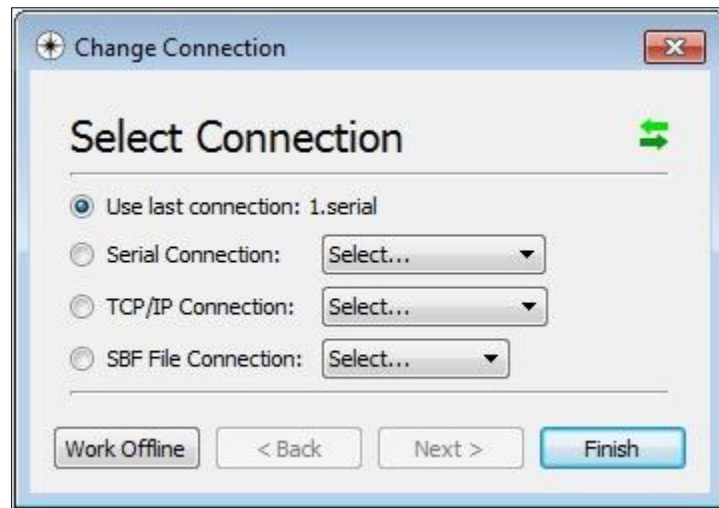


Figure 12: RxControl



2. Select File→Upload Script.

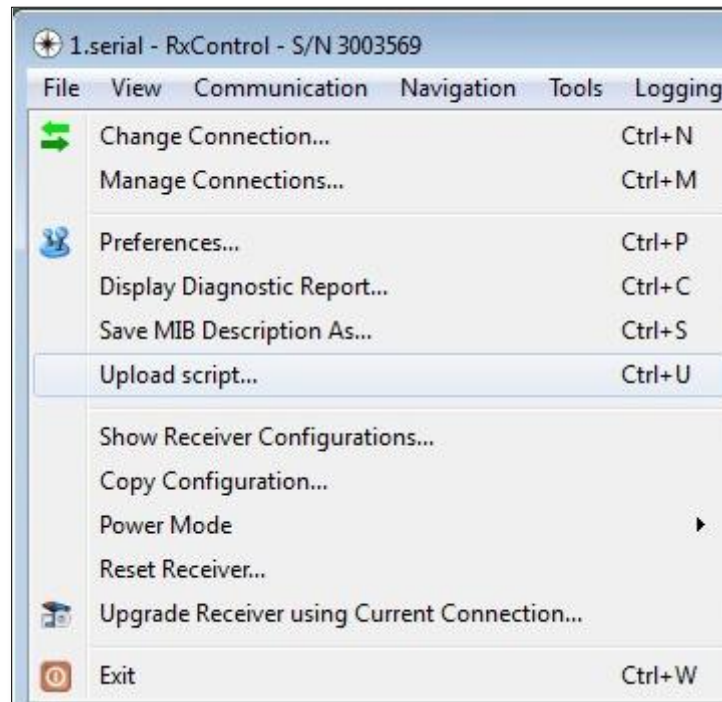


Figure 13: Upload Script

3. Select the appropriate configuration file.

The default configuration file can be found in the folder

APS-3 :        \GNSS\3.4.0 Firmware\APS-3\4\_Default Scripts

APS-3-G:        \GNSS\3.4.0 Firmware\APS-3G\4\_Default Scripts

APS-3L APS-T: \GNSS\3.4.0 Firmware\APS-3L APS-T \4\_Default Scripts

For the APS-3 there are two different configuration files:

*20150128\_APS-3\_Default\_Config.txt* and *20150128\_APS-3\_V2\_Default\_Config.txt*.

For APS-3's with a serial numbers starting with '1',

*20150128\_APS-3\_Default\_Config.txt* is to be used.

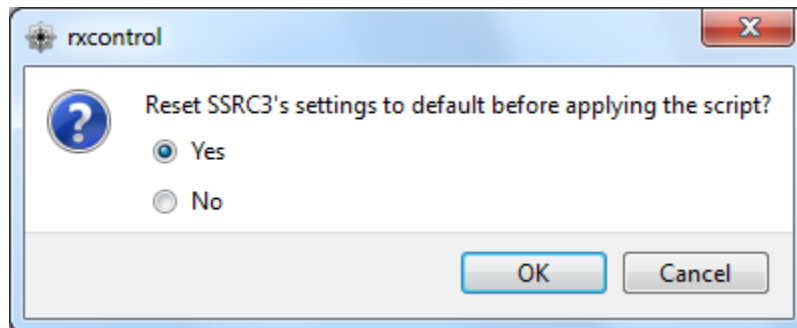
For APS-3's with a serial numbers starting with '2',

*20150128\_APS-3\_V2\_Default\_Config.txt* is to be used.

The 'V2' devices need flow control to be activated to allow communication with the GSM modem.



4. Click 'Yes'.



*Figure 14: Click 'Yes'*

5. The process will complete in ~15 seconds.



6. Click on Help→Receiver ID to verify all settings are correct.

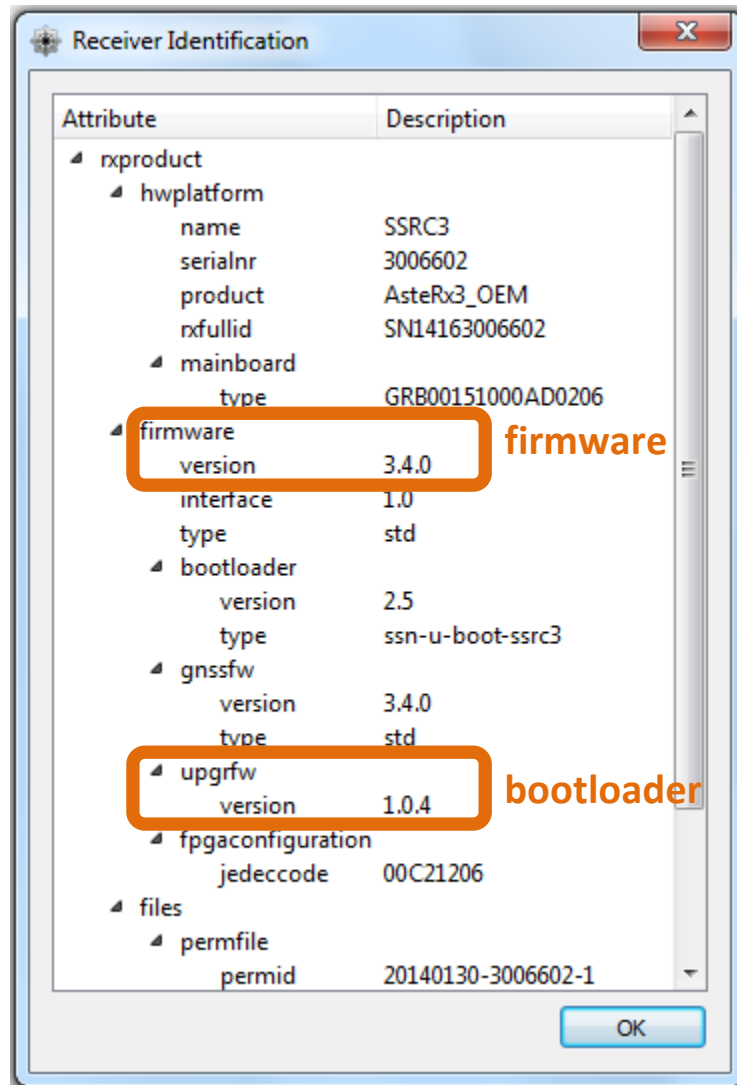


Figure 15: Receiver ID

7. Upgrade Complete. Disconnect the 10029 cable from the APS-3 to enable Bluetooth communication.



## 4 ARP versus APC

### 4.1 Firmware applies APC to ARP offset

- The ARP is the Antenna Reference Point and is the 5/8" mount on the bottom of the APS-3.
- The APC is the Antenna Phase Center is not a physical location in the product but an electrical property of the product determined during the NGS calibration.
- If the antenna 'UNKNOWN' is selected in the APS-3(G) the position reported by the receiver is the position of the APC.
- If the correct antenna is selected as described in the table below, the position reported by the receiver is the position of the ARP.
- The APC-ARP value is an absolute offset as described in the NGS calibration data:  
<http://www.ngs.noaa.gov/ANTCAL/Antennas.jsp?manu=ALTUS>

Altus Product	Antenna name	APC-ARP
APS-3	APSAPS-3	0.0906m
APS-3G/L APS-T	APSAPS-3L	0.0936m

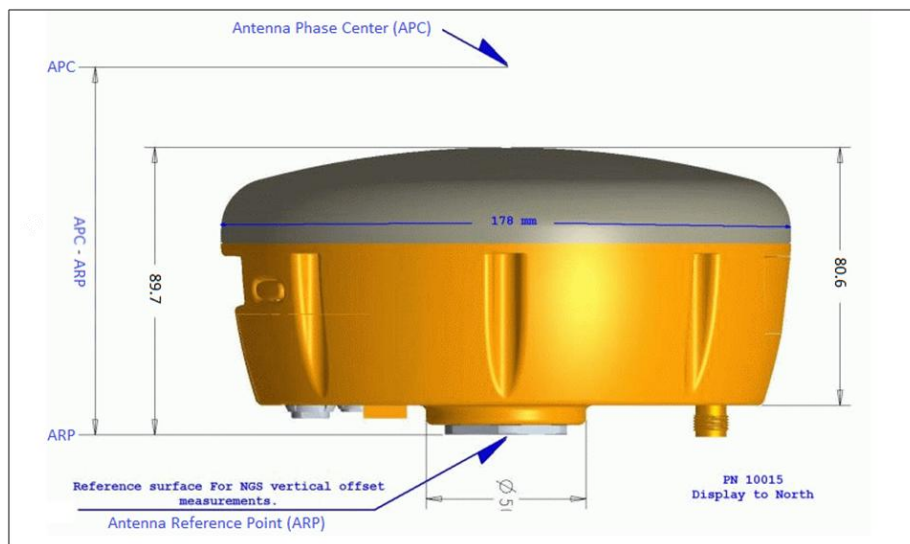


Figure 16: APS-3 GNSS Receiver

### 4.2 Application software applies APC to ARP offset

If the user selects the correct antenna while setting up SurvCE or FieldGenius, SurvCE (version 3.01.09 and higher) and FieldGenius (Version 6.06.6 and higher) include logic to use the proper offset value.



## 5 Technical Support

Contact your ALTUS dealer for first-line support. For further information, please see the Altus support website for documentation and firmware upgrades, or contact ALTUS Technical Support:

### North and South America:

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