PENTAX

TI Asahi Co., Ltd.
Service Group

SERVICE INFORMATION

No. 2015001 Date of issue: FEB., 2015

INFORMATION TYPE	MODIFICATION
PRODUCT	G3100-R1 & SMT888-3G
SUBJECT	GNSS Firmware Upgrade for the receiver board (AsteRx2e) 3.3.0
REASON	Improvement of RTK operation
MODIFICATION DATE	2nd of February, 2015

Contents:

GNSS Firmware Upgrade for G3100-R1 & SMT888-3G (AsteRx2e) to Ver. 3.3.0

Description:

Version 3.x of the firmware for AsteRx2e receivers introduce a new and improved RTK engine That uses both GPS and GLONASS satellites to compute a Fixed RTK solution. Compared to 2.x versions of the firmware, 3.x versions provide a shorter time-to-Fixed RTK, as well as more robust RTK operation in difficult environments. Compare to the version 3.2.0, the tracking sensitivity of the receiver has been improved, allowing the receiver to track and use weaker satellite signals, increasing the availability of a good position solution in challenging environments. The position update rate is currently limited to 10 Hz and moving base is not yet supported. A firmware version including moving base and supporting higher update rates will be introduced later on, until which time users requiring update rates higher than 10 Hz or moving base should use versions 2.x of the firmware.

Interchangeability

Version 3.3.0 of the SSRC1 firmware is for exclusive use of the GNSS with “AsteRx2e OEM receiver board (G3100-R1 and STM888-3G)

Note: The 3.3.0 of the SSRC1 firmware is not applied to G3100-R2 and SMT888-3G V3(SSRC3).

Update procedure

1. **Introduction**

This manual is for upgrade of G3100-R1 or STM888-G3 to 3.3 Firmware.

Figure 1: AsteRx Board Type

1.1. Requirements

The Firmware upgrade process needs the followings

- GC15 Communication cable to connect to G3100-R1 or SMT888-3G Serial 1 port
- G3100-R1 or SMT888-3G with AsteRx2e on fully charged batteries
- Firmware 3.3.0 package (downloaded from the TIA website)
- RxTools 1_9_2 installer or later version (downloaded from the TIA website)
- PC with RxControl version 4.10.1 (from RxTools 1.9.2 installer)

1.2. Overview

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

- Install 3.3.0 firmware
- Load appropriate G3100-R1 or SMT888-3G default configuration script file.
  - PENTAX_G3100_Default_Config_V3.3
  - PENTAX_SMT888_Default_Config_V3.3

2. Setup

2.1.1. Connect the UHF antenna to G3100-R1 or SMT888-3G

2.1.2. Power on the G3100-R1 or SMT888-3G

2.1.3. Connect the GC15 communication cable to G3100-R1 or SMT888-3G and PC

2.1.4. Start RxControl and connect to G3100-R1 or SMT888-3G on the appropriate COM port

3. Procedure

3.1 Bootloader Upgrade

Ensure the G3100-R1 or SMT888-3G has fully charged batteries or is powered by a reliable external power source.

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

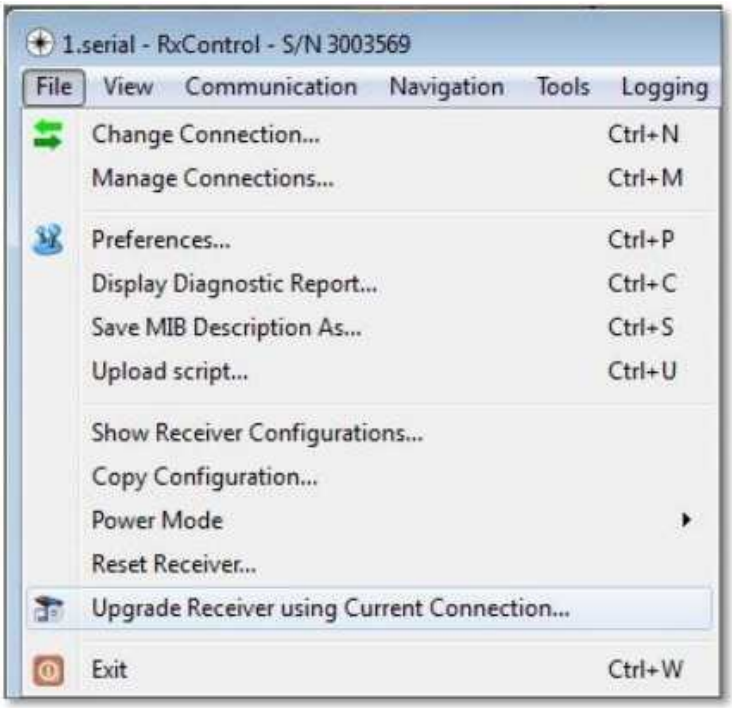

Figure 2: File--> Upgrade

Figure 3: Click 'OK'

3.1.3. Click ‘Next” on the Introduction pop-up window.

Figure 4: Click Next

3.1.4. Select ‘Browse’ on the Select Septentrio Upgrade File Window.

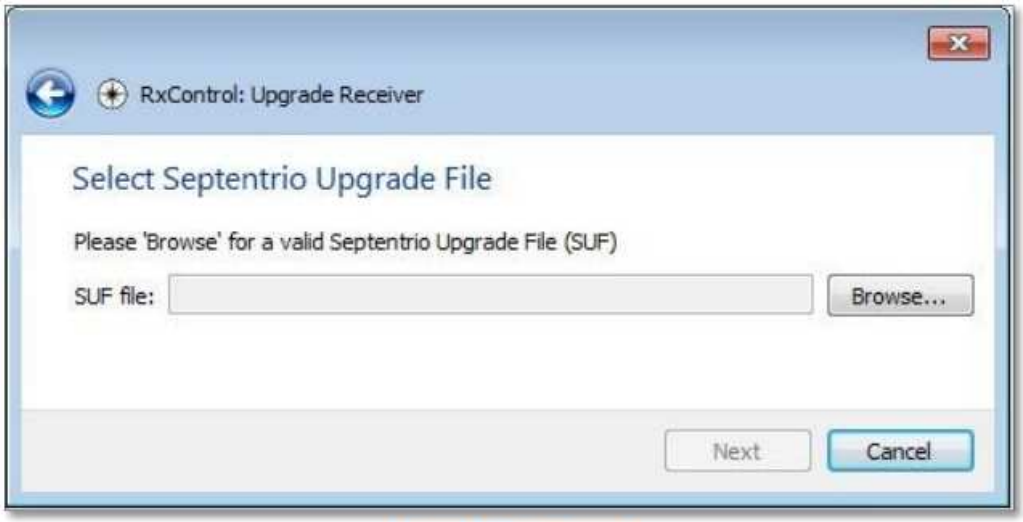

Figure 5: Select Browse

3.1.5. Browse to the appropriate bootloader .suf file:

AsteRx2e : Select ssrc1-1.0.3_upgrade_all.suf.

Figure 6: Bootloader '.suf' File

3.1.6. Click 'Next'

Figure 7: Click Next

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

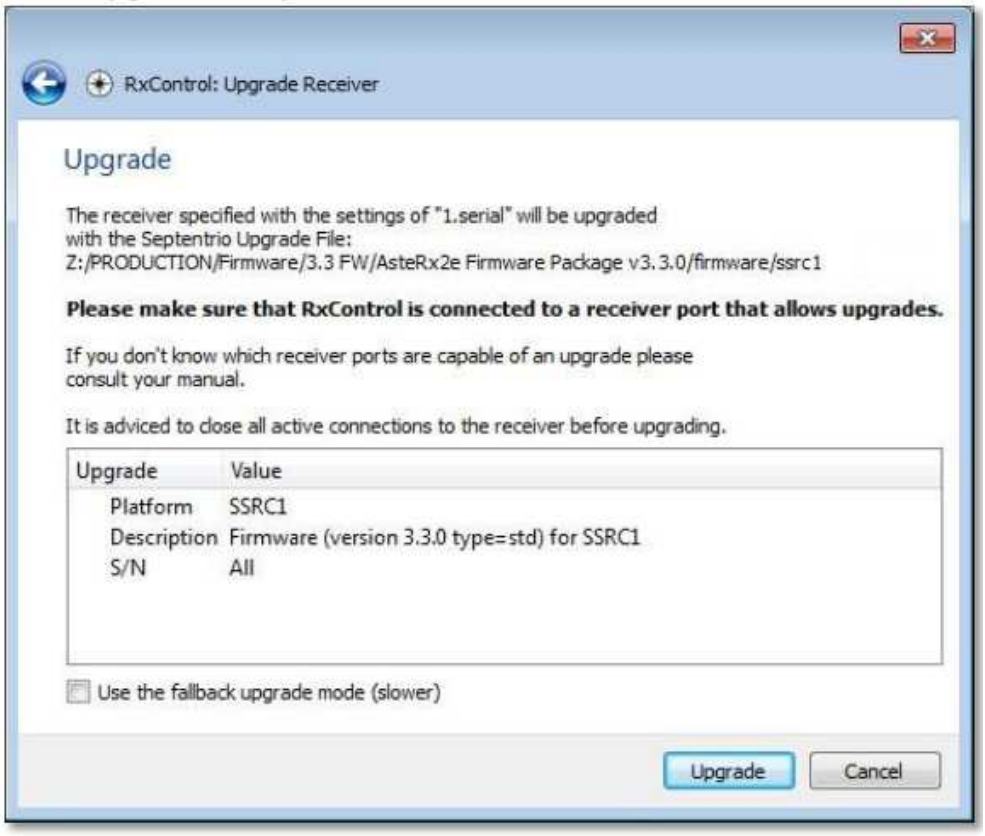

Figure 8: Click 'Upgrade'

3.1.8. Let the process complete.

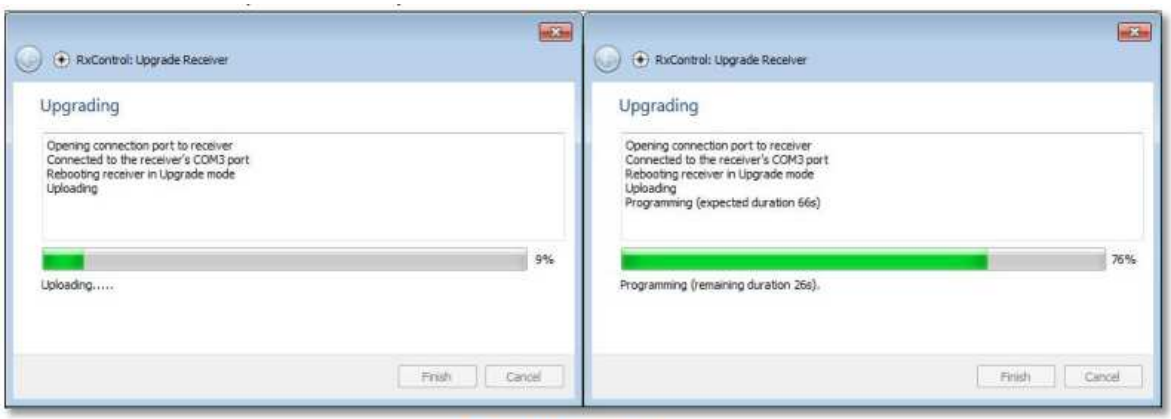

Figure 9: Upgrading...

3.1.9. Bootloader firmware upgrade complete.

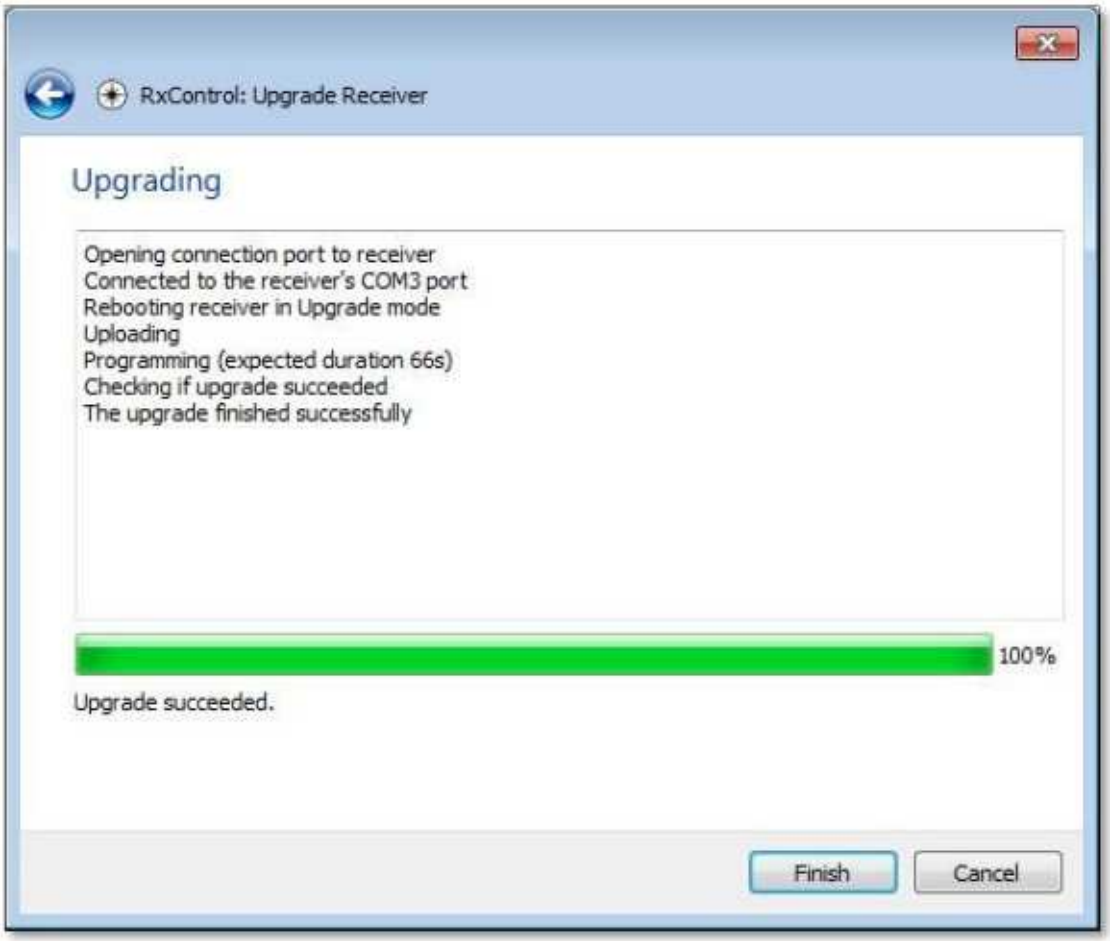

Figure 10: Bootloader Firmware Upgrade Complete

3.2. Firmware Upgrade

3.2.1. Reconnect to RxControl using the last connection.

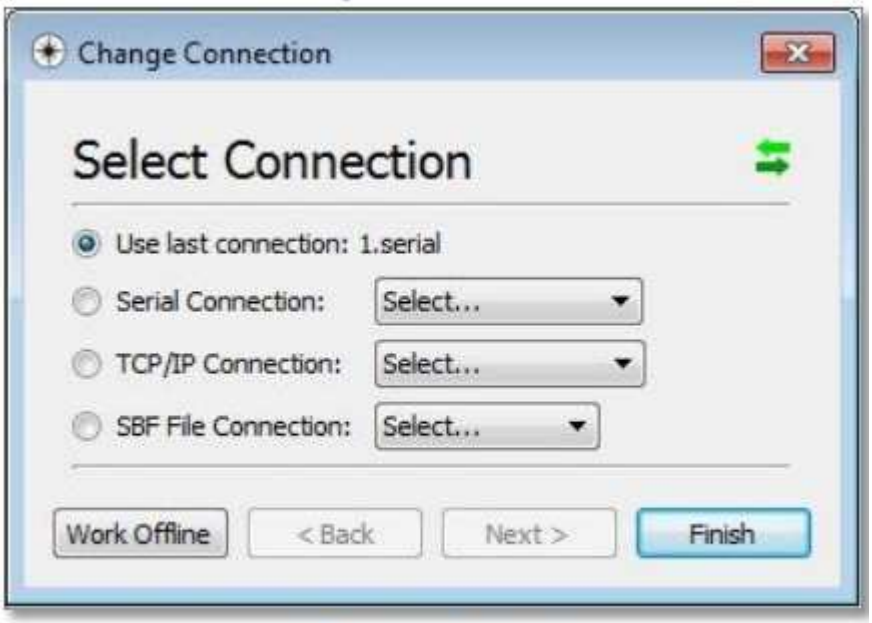

Figure 11: RxControl

3.2.2. Click on the File Menu→'Upgrade receiver using Current Connection'

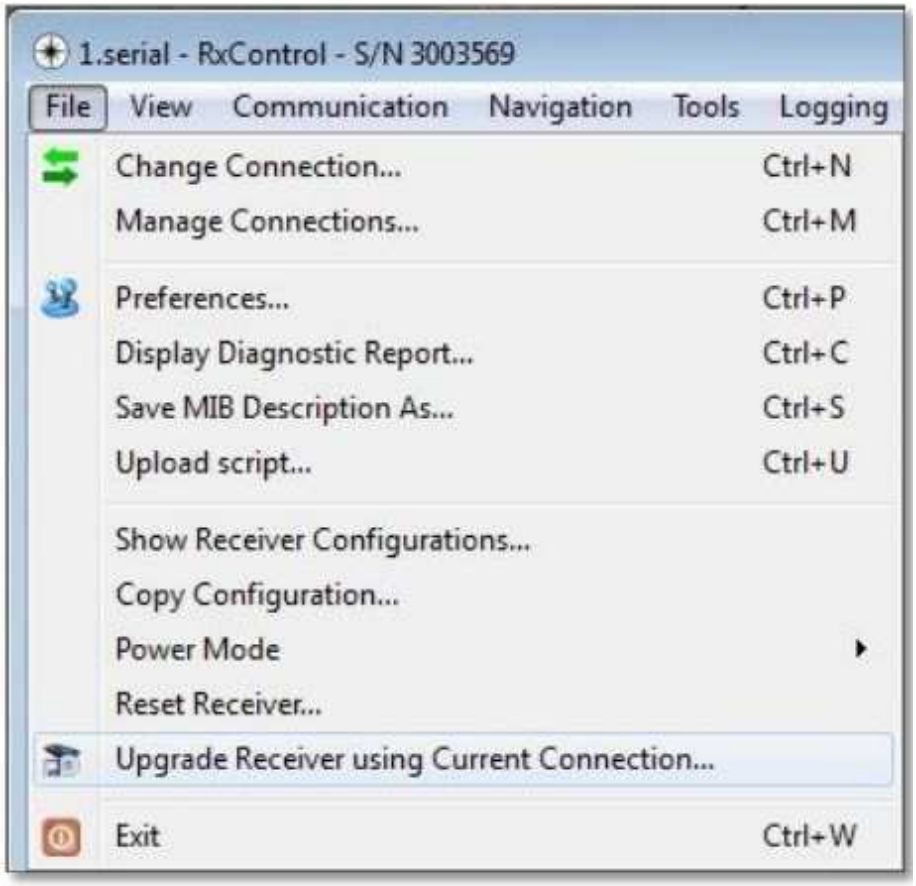

Figure 12: File -->Upgrade

3.2.3. Click ‘OK’ on the next pop-up window.

Figure 13: Click 'OK'

3.2.4. Click ‘Next’ on the Introduction pop-up window.

Figure 14: Click Next

3.2.5. Select ‘Browse’ on the Select Septentrio Upgrade File window.

Figure 15: Select Browse

3.2.6. Browse to the appropriate firmware .suf file:

AsteRx2e: Select ssrc1-3.3.suf

Figure 16: Upgrade '.suf' File

3.2.7. Click Next

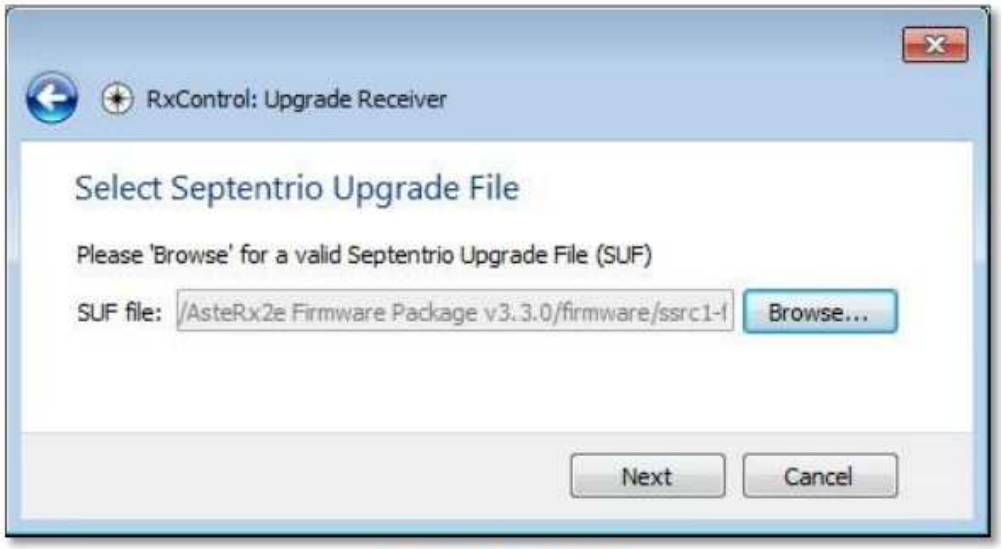

Figure 17: Click 'Next'

3.2.8. Click Upgrade

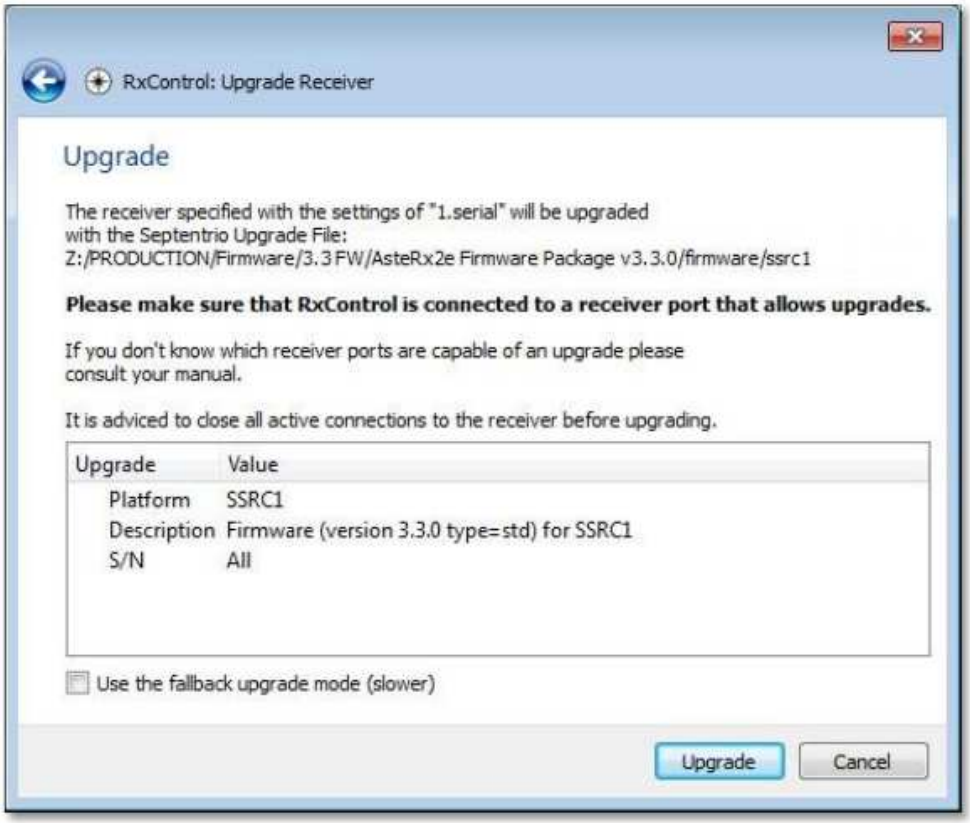

Figure 18: Click 'Upgrade'

3.2.9. Let the process complete: It will take about 10 minutes.

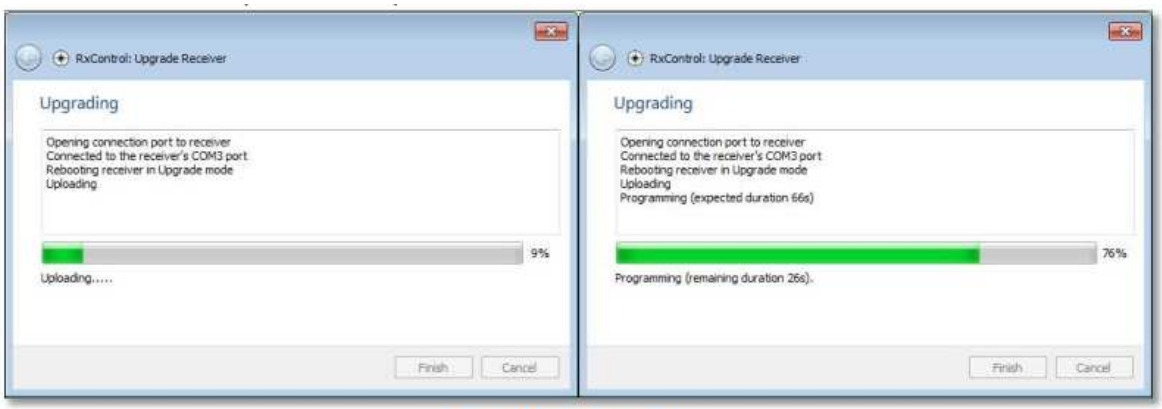

Figure 19: Upgrading...

3.2.10. Firmware upgrade is completed when the progress bar is at 100% and the status says ‘Upgrade succeeded’.

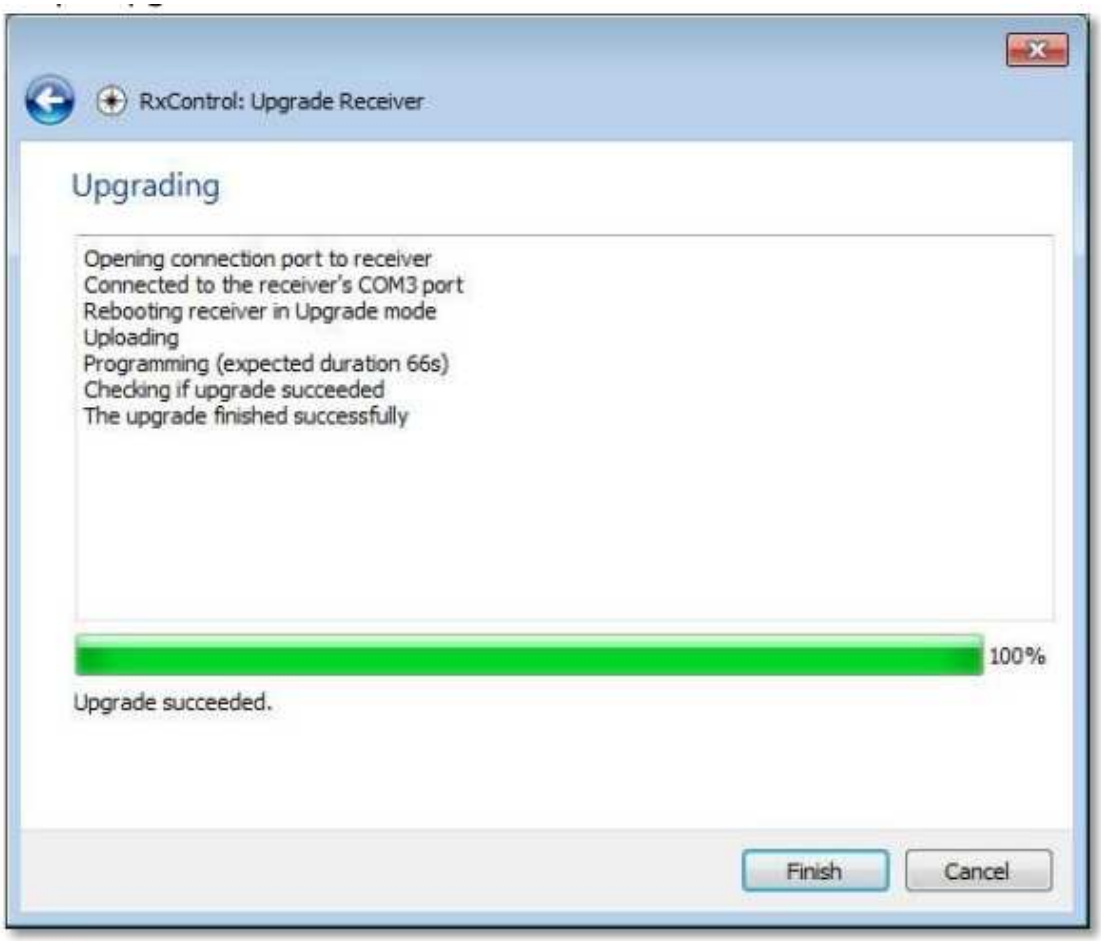

Figure 20: Upgrade Succeeded

3.3. G3100-R1 and SMT888-3G Default Configuration Upload.

3.3.1. After the firmware upgrade is done, the GNSS receiver must be configured for operation within the G3100-R1 or SMT888-3G. The configuration is done with a script file of the commands. The final item is to upload the G3100-R1 or SMT888-3G default configuration file.

3.3.2. Open RxControl to the last connection.

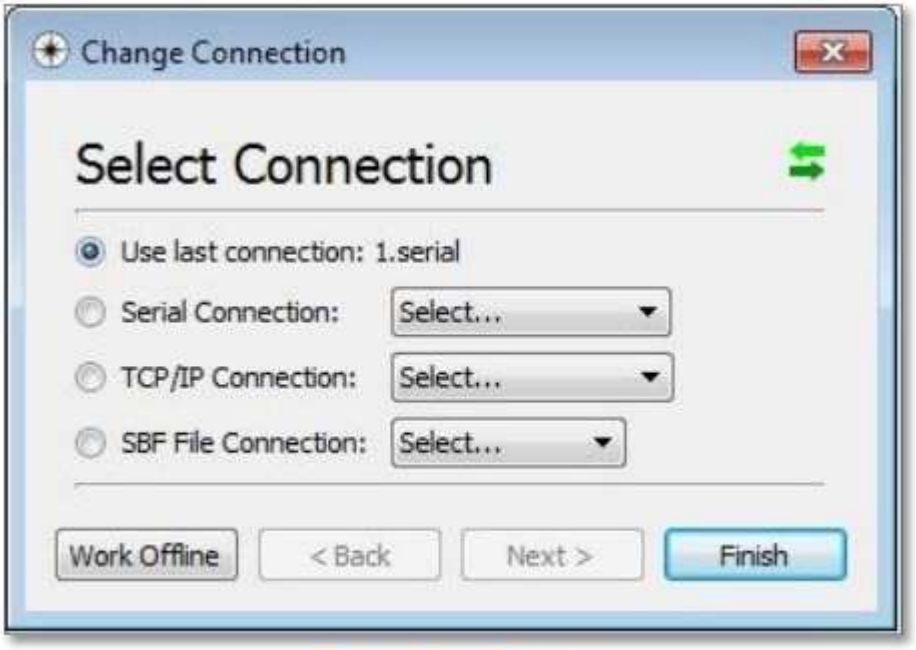

Figure 21: RxControl

3.3.3. Select File → Update Script.

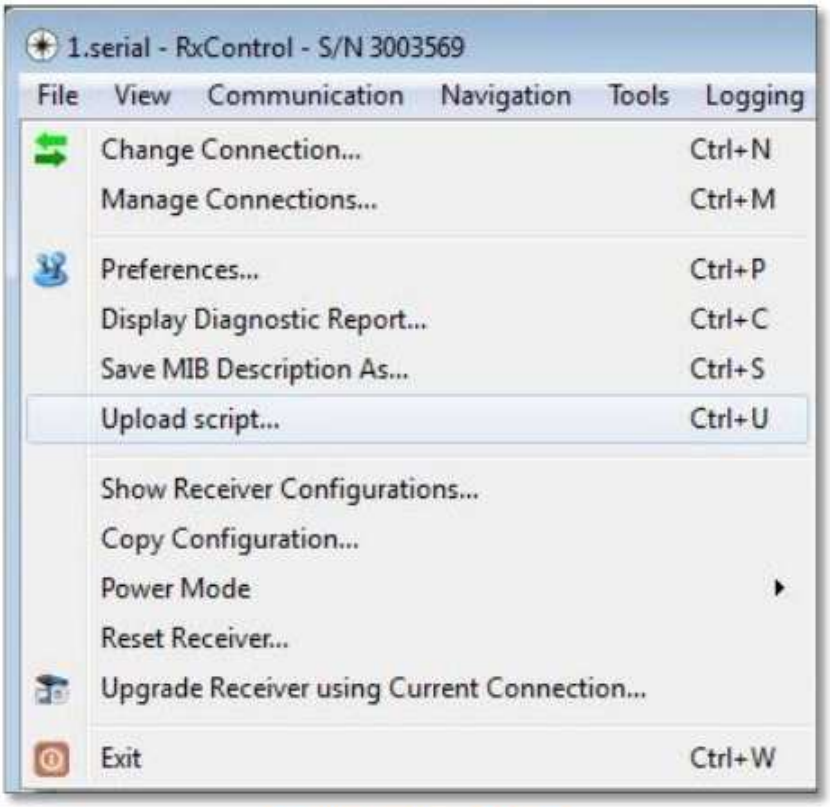

Figure 22: Upload Script

3.3.4. Select appropriate file:

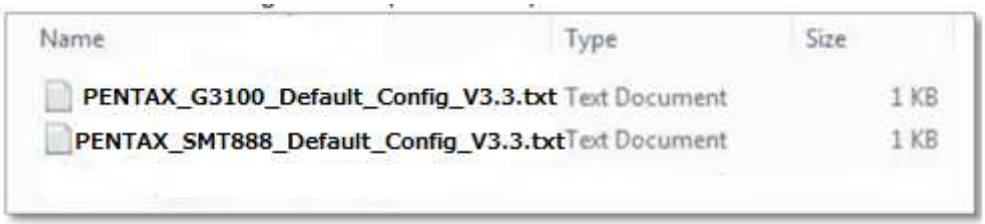

Figure 23: Select Appropriate Script

3.3.5. Click ‘Yes’

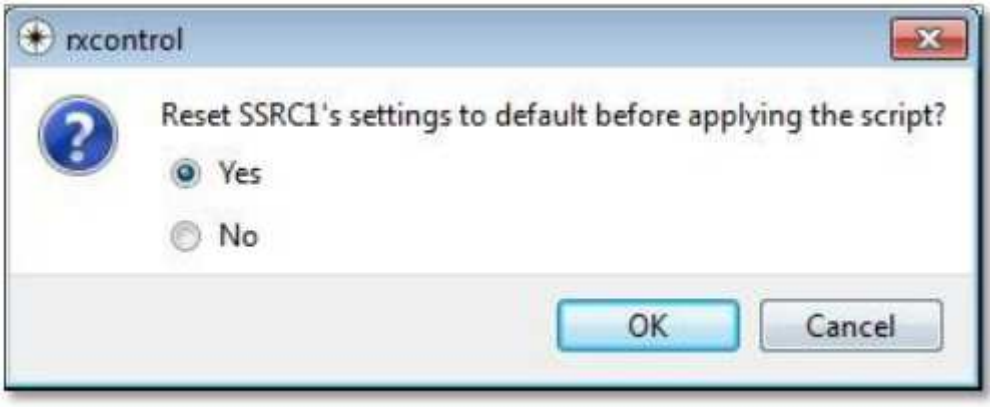

Figure 24: Click 'Yes'

3.3.6. The process will complete in～15 seconds.

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

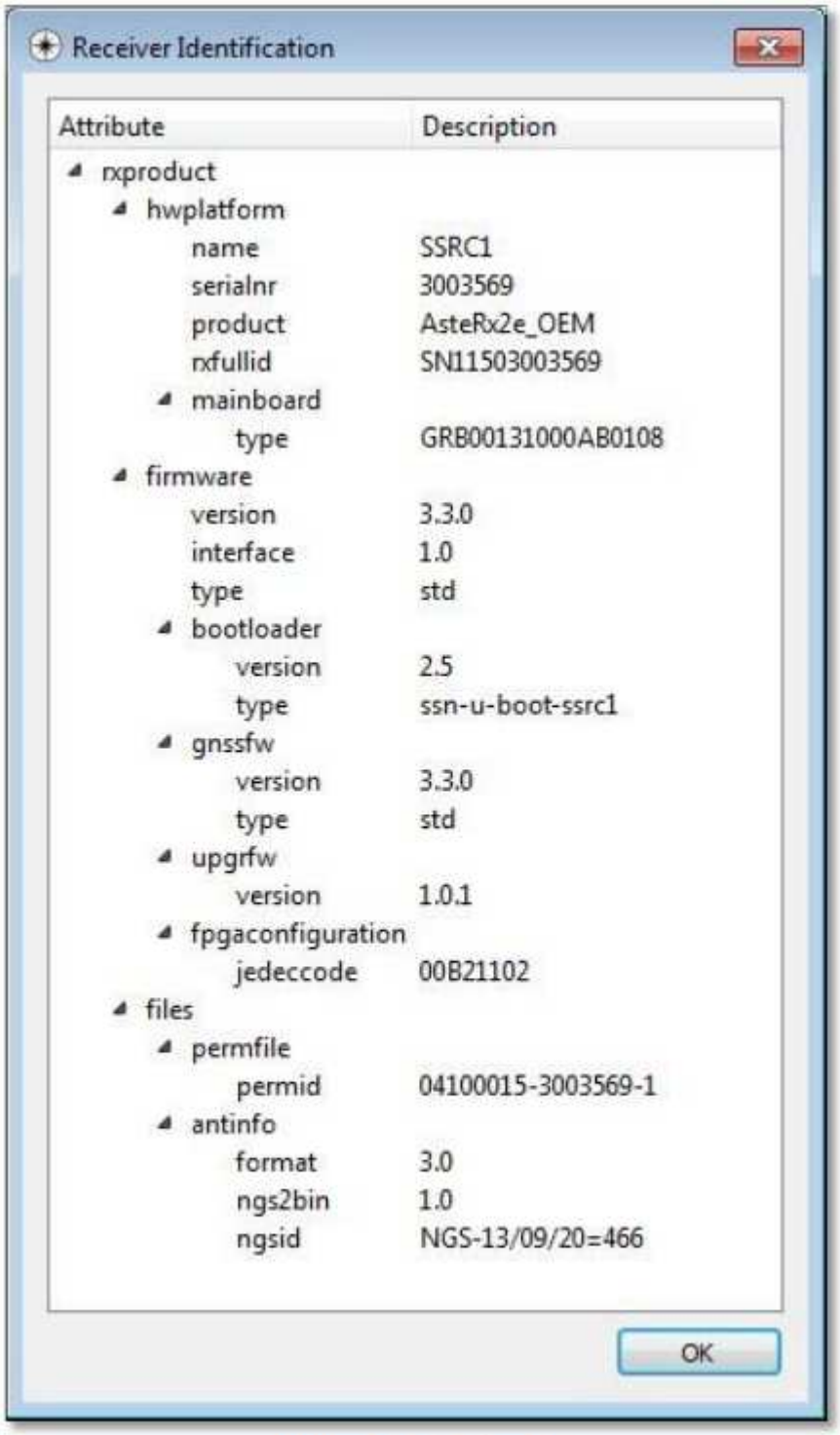

Figure 25: Receiver ID

3.3.8. Upgrade complete. Disconnect GC15 communication cable from G3100-R3 or STM888-3G to enable Bluetooth communication.

**Note the antenna file in version 3.3.0 has the full NGS listing for 09/20/2013. Application software must ensure the correct antenna model is set.*