

SiRF StarIV ROM Patching Application Note

80000NT10098A Rev.1 – 2013-09-13



APPLICABILITY TABLE

PRODUCT
GE865-QUAD
GL865-QUAD
GL865-DUAL
GL865-DUAL V3
GL865-QUAD V3
GE910-QUAD
GE910-QUAD V3
GC864-QUAD V2



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Notice

While reasonable efforts have been made to assure the accuracy of this document, Telit assumes no liability resulting from any inaccuracies or omissions in this document, or from use of the information obtained herein. The information in this document has been carefully checked and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies or omissions. Telit reserves the right to make changes to any products described herein and reserves the right to revise this document and to make changes from time to time in content hereof with no obligation to notify any person of revisions or changes. Telit does not assume any liability arising out of the application or use of any product, software, or circuit described herein; neither does it convey license under its patent rights or the rights of others.

It is possible that this publication may contain references to, or information about Telit products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that Telit intends to announce such Telit products, programming, or services in your country.

Copyrights

This instruction manual and the Telit products described in this instruction manual may be, include or describe copyrighted Telit material, such as computer programs stored in semiconductor memories or other media. Laws in the Italy and other countries preserve for Telit and its licensors certain exclusive rights for copyrighted material, including the exclusive right to copy, reproduce in any form, distribute and make derivative works of the copyrighted material. Accordingly, any copyrighted material of Telit and its licensors contained herein or in the Telit products described in this instruction manual may not be copied, reproduced, distributed, merged or modified in any manner without the express written permission of Telit. Furthermore, the purchase of Telit products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license under the copyrights, patents or patent applications of Telit, as arises by operation of law in the sale of a product.

Computer Software Copyrights

The Telit and 3rd Party supplied Software (SW) products described in this instruction manual may include copyrighted Telit and other 3rd Party supplied computer programs stored in semiconductor memories or other media. Laws in the Italy and other countries preserve for Telit and other 3rd Party supplied SW certain exclusive rights for copyrighted computer programs, including the exclusive right to copy or reproduce in any form the copyrighted computer program. Accordingly, any copyrighted Telit or other 3rd Party supplied SW computer programs contained in the Telit products described in this instruction manual may not be copied (reverse engineered) or reproduced in any manner without the express written permission of Telit or the 3rd Party SW supplier. Furthermore, the purchase of Telit products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license under the copyrights, patents or patent applications of Telit or other 3rd Party supplied SW, except for the normal non-exclusive, royalty free license to use that arises by operation of law in the sale of a product.



Usage and Disclosure Restrictions

License Agreements

The software described in this document is the property of Telit and its licensors. It is furnished by express license agreement only and may be used only in accordance with the terms of such an agreement.

Copyrighted Materials

Software and documentation are copyrighted materials. Making unauthorized copies is prohibited by law. No part of the software or documentation may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, without prior written permission of Telit

High Risk Materials

Components, units, or third-party products used in the product described herein are NOT fault-tolerant and are NOT designed, manufactured, or intended for use as on-line control equipment in the following hazardous environments requiring fail-safe controls: the operation of Nuclear Facilities, Aircraft Navigation or Aircraft Communication Systems, Air Traffic Control, Life Support, or Weapons Systems (High Risk Activities"). Telit and its supplier(s) specifically disclaim any expressed or implied warranty of fitness for such High Risk Activities.

Trademarks

TELIT and the Stylized T Logo are registered in Trademark Office. All other product or service names are the property of their respective owners.

Copyright © Telit Communications S.p.A.



Contents

1. Introduction	6
1.1. Scope.....	6
1.2. Audience.....	6
1.3. Contact Information, Support	6
1.4. Document Organization	7
1.5. Text Conventions.....	7
1.6. Related Documents	7
2. SiRF StarIV ROM Patching Overview.....	8
3. Patching JF2-ROM, JN3-ROM and SE880	9
4. Document History	13



3. Patching JF2-ROM, JN3-ROM and SE880

This chapter describes how to patch a SiRF StarIV-ROM-based GPS receiver (JF2-ROM, JN3-ROM and SE880). For further details on the AT commands used below, see [1].

The following steps must be performed to successfully apply a patch:

1. Select the specific GPS receiver that has to be used by specifying the device type and sub-device type through the **AT\$GPSD** command, e.g. **AT\$GPSD=2,1** (JF2-ROM).
2. Configure the specific GSM GPIOs to be used to drive the GPS receiver through the **AT\$GPSGPIO** command, e.g. **AT\$GPSGPIO=4,5,6,7**.
3. Save the current AT configuration for the GPS receiver through the **AT\$GPSSAV** command and reboot the GSM module.
4. Power up the GPS receiver by issuing the **AT\$GPSP** command, i.e. **AT\$GPSP=1**.
5. Download the Patch file into the GSM NVM through the **AT\$WPATCH** command:
 - a) Since the maximum number of characters, for the patch file name, accepted by the **AT\$WPATCH** command is 16, the original patch file name (GSD4e_X.X.X-P1_RPATCH.YY.pd2) should be renamed, e.g. into patch.pd2
 - b) Issue the **AT\$WPATCH**, e.g. **AT\$WPATCH=patch.pd2,5472**, and wait for the “>>>” symbol as shown below:





- c) Send the patch file with the terminal “Send Text File” command.
6. Once the patch has been successfully sent, it can be applied through the **AT\$EPATCH** command, e.g. **AT\$EPATCH=patch.pd2**.
As soon as the patch has been successfully applied (few seconds are required) the “*Patch Manager: Patched*” unsolicited result code is relayed by the GSM module. After few seconds, the GPS firmware version, reported by the **AT\$GPSSW** command, is updated accordingly.
7. Issue the **AT\$GPSSAV** command if the patch has to be automatically applied at every startup of the GSM module and after a loss of backup battery power.

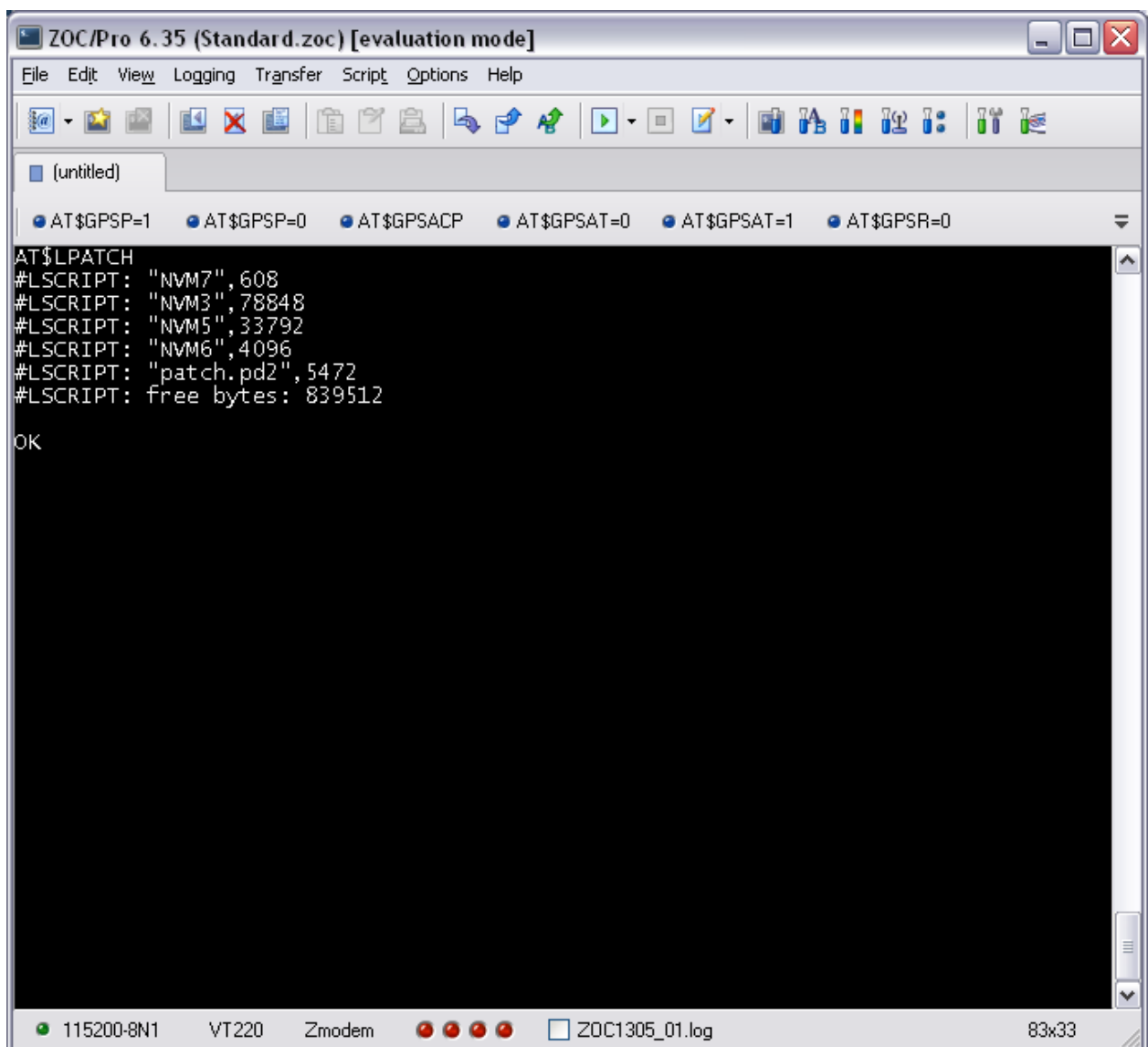
It is possible to disable the automatic patch application, at the startup of the GSM module, by issuing the following commands:



- a. **ATSEPATCH=**
- b. **AT\$GPSSAV**

In order to delete the current applied patch, stored in RAM memory, remove power supply (also remove Vbatt) or send a Factory Reset.

The patch files, currently stored onto the GSM NVM, can be listed by issuing the **AT\$LPATCH** command as shown below:



Also, it is possible to delete a specific patch file, currently stored onto the GSM NVM, by issuing the **AT\$DPATCH** command, e.g. **AT\$DPATCH=patch.pd2**.



WARNING:

The **AT\$LPATCH** command lists the currently stored patch files along with the NVMX files used by the SiRF InstantFIX whenever a SiRF StarIV-ROM-based GPS receiver is being used.

The NVMX files must not be erased or overwritten through the AT\$DPATCH or AT\$WPATCH commands.



4. Document History

Revision	Date	Changes
0	2013-05-13	First issue
1	2013-09-13	Changes in section 3

