
ZL70251 Application Development Kit (ADK) Release Notes



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Release 1.0.0 (2013-08-06)

Known Bugs and Issues in 1.0.0

No known bugs and issues for this release are noted here, but if this isn't the latest release, see also the *Bugs Fixed* in later releases, and the *Known Bugs and Issues* for the latest release, because those bugs and issues might also apply to this release.

Boards Included in 1.0.0

The boards included in ADK release 1.0.0 are shown below:

- ADP Boards: Model ADP100A, Rev A
- Base Station Board: Model BASE251, Rev B
- Remote Device Board: Model REMOTE251, Rev A

All BASE251 and REMOTE251 boards had the following firmware version:

ZL70251 ADK 1.0.0 (Build 0100.0000.0000)

All ADP100A boards had the following firmware version:

AppDevPlat 2.1.4

Note the firmware version for the ADP boards is independent of the firmware version for the other boards because ADP boards are associated with the Application Development Platform (*AppDevPlat*), whereas the other boards are associated with the ZL70251 Application Development Kit (*ZL70251 ADK*).

Release 1.1.0 (2013-10-24)

Bugs Fixed in 1.1.0

- ▶ BF2013081501: Fixed the BER test so it reports the correct *Eff. Data Rate* and *Overhead %* if the test takes longer than 64 seconds (see the *Test* tab in the ADK GUI). In previous releases, if a BER test took longer than approximately 64 seconds, these fields would report invalid results.
- ▶ BF2013082301: In previous ADK releases, some errors reported by the firmware on the base station and implant did not include details, and as a result, the corresponding error messages displayed by the GUI were missing those details. This occurred because the MSP430 compiler's *printf_support* option was set to minimal. This has been fixed by changing the *printf_support* option to *nofloat*.
- ▶ BF2013101401: In previous ADK releases, if the channel was changed while the *RX Test* was enabled on the *Test* tab, the GUI did not restore the SYNTH_CTL register to the RX mode after the calibrations were performed for the new channel. As a result, the *RX Test* mode no longer worked properly until it was stopped and restarted. This has been fixed.
- ▶ BF2013101402: Before the VCO TXPAON calibration is run, the trim results from the VCO TXPAOFF calibrations are now written to the VCO TXPAON trim registers as a starting point. This helps to shorten the VCO TXPAON calibration time as well as prevent spurious emissions in other frequency bands during the VCO TXPAON calibration.

Features Added in 1.1.0

- ▶ FA2013082701: Added support for preamble detection in receive mode. Preamble detection mode will bypass the RSSI threshold and look for a valid preamble pattern for packet detection.
- ▶ FA2013082702: Added a *Pkts w/ Bit Errors* field in the *BER Test* section on the *Test* tab. This displays how many packets of the BER test had bit errors in them.
- ▶ FA2013101401: Added the *RSSI Threshold Trim* calibration to the *CCA & Cal* tab. This trim performs a manual RSSI on the selected channel and then adds 4 counts above the average result of the RSSI measurement.
- ▶ FA2013101402: Added ability to set the PA power on the *ZL70251 Setup* tab.
- ▶ FA2013101403: An algorithm has been implemented in the GUI to select the best approximate VCO frequency range (*vco_freq[13:11]* and *half_band* bits) as a starting point for each channel. The GUI sends this information to the firmware on the base station or remote device, and whenever the channel is changed, the firmware starts with these settings and performs all of the calibrations that are affected by frequency or temperature, including the VCO trims. If the VCO trim results are too close to the band edge, the firmware adjusts the frequency range for the channel by half of a band utilizing the *vco_freq[13:11]* and *half_band* bits. For more information, see the source code.
- ▶ FA2013101404: In previous ADK releases, only the VCO trims were performed when the channel was changed from the GUI. Now, all calibrations that are affected by frequency or temperature are performed, including the VCO calibrations (PA Off, PA On, Rx, and Amplitude), Peak Detector, Antenna, and LNA load.

- ▶ FA2013101405: Added an indication for the half-band setting in the *VCO Range* shown in the *Link Status* section.

Other Changes in 1.1.0

- ▶ OC2013101401: Removed the IREF and FM detector trims from the *CCA & Cal* tab since these trims are not affected by temperature or frequency, and therefore only need to be done once.
- ▶ OC2013102401: A number of other changes were made in 1.1.0 for aesthetic reasons. These changes do not affect functionality.

Known Bugs and Issues in 1.1.0

No known bugs and issues for this release are noted here, but if this isn't the latest release, see also the *Bugs Fixed* in later releases, and the *Known Bugs and Issues* for the latest release, because those bugs and issues might also apply to this release.

Boards Included in 1.1.0

The boards included in ADK release 1.1.0 are shown below:

- ADP Boards: Model ADP100A, Rev A
- Base Station Board: Model BASE251, Rev B
- Remote Device Board: Model REMOTE251, Rev A

All BASE251 and REMOTE251 boards had the following firmware version:

ZL70251 ADK 1.1.0 (Build 0100.0100.0000)

All ADP100A boards had the following firmware version:

AppDevPlat 2.1.5

Note the firmware version for the ADP boards is independent of the firmware version for the other boards because ADP boards are associated with the Application Development Platform (*AppDevPlat*), whereas the other boards are associated with the ZL70251 Application Development Kit (*ZL70251 ADK*).

Release 1.1.1 (2014-03-11)

Bugs Fixed in 1.1.1

- ▶ BF2014022701: Changed VCO Frequency Tune TXPAON Mode calibration by manually turning on the VCO buffer and power amplifier instead of using the global enable in the RF_EN1 register. This was necessary because by using the global enable, the VCO would operate at the frequency deviation below the center of the channel.

Features Added in 1.1.1

No features were added in 1.1.1.

Hardware Changes in 1.1.1

- ▶ HC2014022701: Replaced obsolete external LNA on the BASE251.

Other Changes in 1.1.1

- ▶ OC2014022701: Changed the ZL70251 LNA gain setting on the base station from h'03 (~24 dB) to h'0F (~30 dB). This was changed to compensate for the decreased gain of the external LNA that resulted from the BASE251 hardware change described in "Hardware Changes in 1.1.1".
- ▶ OC2014031101: Added the ZL70251 Data Sheet (revision 2) and the ZL70251 Programmer User's Guide (revision 2) to the installed documentation.
- ▶ OC2014031102: Updated the register descriptions displayed by the GUI so they match the descriptions in the ZL70251 Programmer User's Guide (revision 2).

Known Bugs and Issues in 1.1.1

No known bugs and issues for this release are noted here, but if this isn't the latest release, see also the *Bugs Fixed* in later releases, and the *Known Bugs and Issues* for the latest release, because those bugs and issues might also apply to this release.

Boards Included in 1.1.1

The boards included in ADK release 1.1.1 are shown below:

- ADP Boards: Model ADP100A, Rev A
- Base Station Board: Model BASE251, Rev E
- Remote Device Board: Model REMOTE251, Rev A

All BASE251 and REMOTE251 boards had the following firmware version:

ZL70251 ADK 1.1.1 (Build 0100.0100.0100)

All ADP100A boards had the following firmware version:

AppDevPlat 2.1.5

Note the firmware version for the ADP boards is independent of the firmware version for the other boards because ADP boards are associated with the Application Development Platform (*AppDevPlat*), whereas the other boards are associated with the ZL70251 Application Development Kit (*ZL70251 ADK*).

Release 1.1.2 (2014-08-13)

Bugs Fixed in 1.1.2

No bugs were fixed in 1.1.2.

Features Added in 1.1.2

- ▶ FA2014081301: The firmware was changed on the base station and remote device so when calibrations that affect the LNA gain are performed, the previous LNA gain is restored afterwards. In previous releases, the LNA gain was always restored to its maximum value (h'0F).

Hardware Changes in 1.1.2

- ▶ HC2014081301: Due to a layout issue on the BASE251 Rev G PCB, a 100 pF capacitor is added as rework between U6.1 and the ground side of C14. This provides an improved RF ground reference for the external LNA. Note that this capacitor is not needed in the revision H PCB because the layout was improved by adding additional ground vias to R9, C23, and C33. Please use the revision H board as a reference for the recommended layout.

Other Changes in 1.1.2

- ▶ OC2014081301: Changed the ZL70251 LNA gain setting on the base station from h'0F (~30 dB) to h'03 (~24 dB). This was changed to compensate for the increased gain of the external LNA (approximately 8 to 16 dB) that resulted from the BASE251 hardware change described in "Hardware Changes in 1.1.2".

Known Bugs and Issues in 1.1.2

Note the known bugs and issues for this release are listed here, but if this isn't the latest release, see also the *Bugs Fixed* in later releases, and the *Known Bugs and Issues* for the latest release, because those bugs and issues might also apply to this release.

The known bugs and issues in this release are as follows:

- ▶ KB2014081301: Due to a layout issue on the BASE251 Rev G PCB, please use the revision H board as a reference for the recommended layout. For more information, see "Hardware Changes in 1.1.2".

Boards Included in 1.1.2

The boards included in ADK release 1.1.2 are shown below:

- ADP Boards: Model ADP100A, Rev A
- Base Station Board: Model BASE251, Rev G with rework (see "Hardware Changes in 1.1.2") or Rev H
- Remote Device Board: Model REMOTE251, Rev B

All BASE251 and REMOTE251 boards had the following firmware version:

ZL70251 ADK 1.1.2 (Build 0100.0100.0200)

All ADP100A boards had the following firmware version:

AppDevPlat 2.1.6

Note the firmware version for the ADP boards is independent of the firmware version for the other boards because ADP boards are associated with the Application Development Platform (*AppDevPlat*), whereas the other boards are associated with the ZL70251 Application Development Kit (*ZL70251 ADK*).

Appendix A: Compatibility between Software Components

Each ADK release number contains a major, minor, and patch version ([major].[minor].[patch]).

If a release only includes small changes and bug fixes that do not affect compatibility with previous releases, the patch version is incremented. Different patch versions of the firmware, API (DLL), and GUI will be fully compatible. For example, the 1.0.2 firmware will be fully compatible with the 1.0.1 API, etc.

If a release includes new functionality and interfaces, but is backwards compatible with all previous interfaces, the minor version is incremented. In this case, newer versions of the firmware on the boards will be compatible with previous versions of the API, and newer versions of the API will be compatible with previous versions of the GUI, but not the other way around. For example, the 1.2.X firmware will be compatible with the 1.1.X API, and the 1.1.X API will be compatible with the 1.0.X GUI, but not vice-versa.

If a release includes significant changes that make it incompatible with previous releases, the major version is incremented. In this case, different versions of the firmware, API, and GUI will not be compatible.

Note that multiple versions of the ADK software can be installed on a PC without conflict, so when you install a newer version, you do not have to remove previous versions (though you may if you no longer need them).

Appendix B: Change Identification Code Format

Where an identification code is assigned to a change, its format is CCYYYYMMDDNN, where CC identifies the change category (e.g., BF for Bug Fix), YYYYMMDD is the date the change was entered (year, month, and day), and NN is the number of the change entered in that category on that date (e.g., 01 for the first change in that category on that date, 02 for the second change, etc.).

Appendix C: List of Changes in Document

The following table lists substantive changes that were made in the ZL70251 Application Development Kit (ADK) Release Notes.

Revision	Change	Page
Revision 1 (August 2013)	Initial release at ZL70251 ADK version 1.0.0.	–
Revision 2 (October 2013)	Added release notes for ZL70251 ADK version 1.1.0.	–
Revision 3 (March 2014)	Added release notes for ZL70251 ADK version 1.1.1.	–
Revision 4 (August 2014)	Added release notes for ZL70251 ADK version 1.1.2.	–

Appendix D: Product Support

Microsemi CMPG backs its products with various support services, including customer service, a website, electronic mail, and worldwide sales offices. This appendix contains information about contacting Microsemi CMPG and using these support services.

Customer Service

Contact Customer Service for nontechnical product support, such as product pricing, product upgrades, update information, order status, and authorization.

From North America, call 800.432.4009

From the rest of the world, call 512.228.5400

Via e-mail, write to sales.support@microsemi.com

Website

For more information, log on to MyCMPG at www.microsemi.com/cmpg, where you can browse a variety of technical and nontechnical information. Many answers available on the searchable web resource include diagrams, illustrations, and links to other resources on the website.

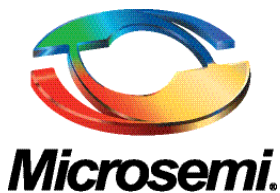
MyCMPG

Microsemi CMPG customers may submit and track technical cases online by logging in to [MyCMPG](#).

Outside the U.S.

Customers needing assistance outside the US time zones can also contact technical support via their regional sales office.

Sales office listings can be found on our website under [Contact Sales > Medical Products](#).



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