

This document provides late-breaking information about the Altera® Quartus® II software version 13.0.

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For information about operating system support, refer to the **readme.txt** file in your **altera/<version number>/quartus** directory. For the latest information about the MegaCore® IP Library, refer to the *MegaCore IP Library Release Notes and Errata*.

New Features & Enhancements

The Quartus II software version 13.0 includes the following new features and enhancements:

- Enhanced device support:
 - Full device support for the following Arria[®] V devices: 5AGXA1, 5AGXA3, and 5AGTC3
 - Full device support for the following Cyclone[®] V devices: Cyclone V: 5CEA2, 5CEA4, 5CEA7, 5CGXC7, 5CGTD7, and 5CGTD9
 - Full device support for the following Stratix[®] V devices: 5SGSD6, and 5SGSD8
 - Advance device support for the following Arria V devices: 5AGXA5, 5AGXA7, and 5AGTC7
 - Advance device support for the following Cyclone V devices: 5CEA5, 5CGXC3, 5CGXC4, and 5CGXC5
- Simplified software and device family installation with a new installer
- An average 25% faster compilation time
- Support for eight-core multiprocessing
- Enhancements to the Qsys system integration tool, including:
 - Support for ARM[®] TrustZone[®] technology plus Advanced Peripheral Bus (APB[™])
 - Support for VHDL bus functional models (BFMs)
- Enhancements to the Tranceiver Toolkit, including:
 - Bit error checking for Stratix V FPGAs
 - Measurement and reporting of the data rates of each active transceiver channel
- Enhancements to the SignalTap[™] II Logic Analyzer, including:
 - Changing basic trigger operations without recompiling.
 - Cross-triggering from an Altera SoC hard processor (HPS) event.
- A new software notification center that:
 - allows you to monitor compilations remotely from a web browser
 - allows you to receive status emails about your Quartus II software compilations
- You can use the Quartus II Help with the following browsers:
 - Local Quartus II Help is fully compatible with Mozilla Firefox 3.6 running on Linux 32-bit systems.
 - Quartus II Web Help (hosted at <http://quartushelp.altera.com/current>) is fully compatible with Google Chrome, Safari 5 Microsoft Internet Explorer 9, and Mozilla Firefox 20.0.
 - Some Help features require that you to disable pop-up blocking.

Memory Recommendations

A full installation of the Quartus II software requires up to 18 GB of available disk space on the drive or partition where you are installing the Altera software.

The Quartus II Stand-Alone Programmer requires a minimum of 1 GB of RAM plus additional memory, based on the size and number of SRAM Object Files (.sof) files and the size and number of devices being configured.

Altera recommends that your system be configured to provide virtual memory equal to the recommended physical RAM that is required to process your design.

The following table lists the memory required to process designs targeted for Altera devices.

Family	Device	Recommended Physical RAM	
		32-bit	64-bit
Arria GX	EP1AGX20	512 MB	512 MB
	EP1AGX35, EP1AGX50, EP1AGX60	1.0 GB	1.5 GB
	EP1AGX90	1.5 GB	2.0 GB
Arria II GX	EP2AGX45	1.0 GB	1.5 GB
	EP2AGX65	1.5 GB	2.0 GB
	EP2AGX95, EP2AGX125, EP2AGX190	3.0 GB	4.0 GB
	EP2AGX260	4.0 GB	6.0 GB
Arria II GZ	EP2AGZ225	3.0 GB	4.0 GB
	EP2AGZ300	4.0 GB	6.0 GB
	EP2AGZ350	Not recommended	8.0 GB
Arria V	5AGXA1	Not recommended	6.0 GB
	5AGTC3, 5AGXA3, 5AGXA5	Not recommended	8.0 GB
	5AGXA7, 5AGTC7	Not recommended	10.0 GB
	5AGXB1, 5AGXB3, 5AGTD3, 5ASTD3, 5ASXB3	Not recommended	12.0 GB
	5AGXB5, 5AGTD7, 5AGXB7, 5ASXB5, 5ASTD5	Not recommended	16.0 GB
Arria V GZ	5AGZE1	Not recommended	8.0 GB
	5AGZE3, 5AGZE5	Not recommended	12.0 GB
	5AGZE7	Not recommended	16.0 GB
Cyclone	All	512 MB	512 MB
Cyclone II	EP2C5, EP2C8, EP2C15, EP2C20	512 MB	512 MB
	EP2C35, EP2C50	1.0 GB	1.5 GB
	EP2C70	1.5 GB	2.0 GB
Cyclone III	EP3C5, EP3C10, EP3C16, EP3C25, EP3C40	512 MB	512 MB
	EP3C55, EP3C80	768 MB	1.0 GB
	EP3C120	1.5 GB	2.0 GB
Cyclone III LS	EP3CLS70, EP3CLS100	1.5 GB	2.0 GB
	EP3CLS150, EP3CLS200	3.0 GB	4.0 GB

Family	Device	Recommended Physical RAM	
		32-bit	64-bit
Cyclone IV E	EP4CE6, EP4CE10, EP4CE15, EP4CE22, EP4CE30, EP4CE40	512 MB	512 MB
	EP4CE55, EP4CE75	768 MB	1.0 GB
	EP4CE115	1.0 GB	1.5 GB
Cyclone IV GX	EP4CGX15, EP4CGX22, EP4CGX30	512 MB	512 MB
	EP4CGX50, EP4CGX75	1.0 GB	1.5 GB
	EP4CGX110, EP4CGX150	1.5 GB	2.0 GB
Cyclone V	5CEA2, 5CGXC3, 5CEA4, 5CGXC4, 5CEA5, 5CGTD5, 5CGXC5, 5CSEA5, 5CSTD5, 5CSXC5, 5CSEA6, 5CSXC6, 5CEA7, 5CGTD7, 5CGXC7, 5CSEA2, 5CSEA4, 5CSXC2, 5CSXC4, 5CSTD6	Not recommended	6.0 GB
	5CEA9, 5CGTD9, 5CGXC9, ,	Not recommended	8.0 GB
HardCopy® II	HC210, HC210W	1.5 GB	2.0 GB
	HC220, HC230, HC240	3.0 GB	4.0 GB
HardCopy III	HC325	Not recommended	8.0 GB
	HC335		12.0 GB
HardCopy IV	HC4E25	Not recommended	8.0 GB
	HC4GX15		12.0 GB
	HC4E35, HC4GX25		16.0 GB
	HC4GX35		20.0 GB
MAX®	All	512 MB	512 MB
MAX II	All	512 MB	512 MB
MAX V	All	512 MB	512 MB
Stratix	EP1S10, EP1S20	512 MB	512 MB
	EP1S25, EP1S30, EP1S40, EP1S60	1.0 GB	1.5 GB
	EP1S80	1.5 GB	2.0 GB
Stratix GX	EP1SGX10	512 MB	512 MB
	EP1SGX25, EP1SGX40	1.0 GB	1.5 GB
Stratix II	EP2S15	512 MB	512 MB
	EP2S30	1.0 GB	1.5 GB
	EP2S60, EP2S90	1.5 GB	2.0 GB
	EP2S130, EP2S180	3.0 GB	4.0 GB
Stratix II GX	EP2SGX30, EP2SGX60	1.0 GB	1.5 GB
	EP2SGX90	1.5 GB	2.0 GB
	EP2SGX130	3.0 GB	4.0 GB
Stratix III	EP3SL50, EP3SE50, EP3SL70	1.0 GB	1.5 GB
	EP3SE80	1.5 GB	2.0 GB
	EP3SL110, EP3SE110, EP3SL150, EP3SL200	3.0 GB	4.0 GB
	EP3SE260, EP3SL340	4.0 GB	6.0 GB

Family	Device	Recommended Physical RAM	
		32-bit	64-bit
Stratix IV	EP4SGX70	1.5 GB	2.0 GB
	EP4SE230 EP4SGX110, EP4SGX230, EP4S40G2, EP4S100G2	3.0 GB	4.0 GB
	EP4SGX290	4.0 GB	6.0 GB
	EP4SE360 EP4SGX360, EP4S100G3, EP4S100G4	Not recommended	8.0 GB
	EP4SGX530, EP4SE530, EP4SE820, EP4S40G5, EP4S100G5	Not recommended	12.0 GB
Stratix V	5SGSD3	Not recommended	8.0 GB
	5SGXA3, 5SGSD4, 5SGXA4, 5SGTC5	Not recommended	12.0 GB
	5SGSD5, 5SGXA5, 5SGXB5, 5SGSD6, 5SGXB6	Not recommended	16.0 GB
	5SGTC7, 5SGXA7, 5SGSD8	Not recommended	20.0 GB
	5SGXA9, 5SEE9	Not recommended	24.0 GB
	5SEEB, 5SGXAB, 5SGXB9, 5SGXBB	Not recommended	28.0 GB

Changes in Device Support

The following section is divided into device support changes according to whether the change is a notification, and whether the change has been fixed or not fixed.

Description	Workaround
Change Notifications	
Device Support Not Fixed	
<p style="text-align: center;">VCS Internal Errors</p> <p>PCIe regtests may fail randomly due to VCS internal errors.</p>	You must re-run VCS in the event of a failed PCIe regtest.
<p>Quartus II does not automatically detect and update PCIe IP core</p> <p>When creating a design with a PCI express (PCIe) intellectual property (IP) core in Qsys prior to version 12.1, the Regenerate IP Component feature in the Quartus II software cannot automatically detect and update the PCIe IP core to the current version. Qsys systems must be upgraded manually because compilation errors might occur with outdated PCIe IP cores.</p>	<p>Prior to compilation, you must regenerate the Qsys system. With your project opened in the Quartus II software:</p> <ol style="list-style-type: none"> 1. Click Tools > Qsys to open the Qsys window. 2. Click the Generation tab. 3. Click the Generate button.

Description	Workaround
Device Support Fixed	
<p>Arria V timing models have changed</p> <p>Arria V timing models have changed. Some of these changes affect devices which had been at "Final" timing status.</p>	<p>Updates were made to the final timing models. Refer to solution number rd04252013_701 in the Altera Knowledge Base.</p>
<p>Stratix V timing models changed in the Quartus II software version 12.1 SP1</p> <p>Stratix V timing models changed in the Quartus II software version 12.1 SP1. Some of these changes affect devices that had been at "Final" timing status.</p>	<p>Updates were made to the final timing models. Refer to solution number rd11162012_922 in the Altera Knowledge Base.</p>
<p>Stratix V timing model change: clr input of M20K blocks</p> <p>The <code>clr</code> input of M20K memories, when driven directly by a global, regional, or periphery clock buffer is not analyzed by the TimeQuest timing analyzer in the Quartus II software version 12.1 SP1 and earlier. This change affects devices that had been at "Final" timing status.</p>	<p>Updates were made to the final timing models. Refer to solution number rd02202013_401 in the Altera Knowledge Base.</p>
<p>Stratix V timing model change: Logic and routing delays</p> <p>A software error in the Quartus II software version 12.1 SP1 and earlier caused minor timing modeling errors for some logic and routing delays (typically < 20 ps). This change affects devices that had been at "Final" timing status.</p>	<p>Updates were made to the final timing models. Refer to solution number rd02202013_401 in the Altera Knowledge Base.</p>
<p>VCCRSTCLK_HPS pin labelled incorrectly</p> <p>The <code>VCCRSTCLK_HPS</code> pin was incorrectly labelled as "vcc_hps." Applies to some Cyclone V SoC devices.</p>	<p>Refer to the updated pinout table to identify both <code>VCCRSTCLK_HPS</code> pins.</p>
<p>Ordering Part Number (OPN) change for Cyclone V E50 devices.</p> <p>Some OPNs have been identified as incorrect.</p>	<p>5CEFA2 devices become 5CEBA2 devices 5CEFA4 devices become 5CEBA4 devices</p>
<p>Quartus II software restricting ATX PLL range issue</p> <p>The Quartus II software does not restrict the ATX PLL range to the current performance specifications, which are documented in the current errata sheet for Stratix V devices on the Altera website. The Quartus II software assumes that all the ATX PLLs have exactly the same data rate performance. Therefore it is possible for the Fitter to implement an ATX PLL with settings outside the performance specifications of your selected device and assigned ATX PLL location.</p> <p>Applies to Stratix V devices.</p>	<p>Ensure that your design compiles with the specifications in the errata sheet. You may need to manually assign ATX PLLs in your design to specific locations.</p>
<p>No pipe_pclk output issue</p> <p>The <code>pipe_pclk</code> clock cannot be activated on a non-global clock.</p>	<p>The <code>pipe_pclk</code> clock must be on a global clock signal to function properly.</p>
<p>CPRI placement on restricted triplet issue</p> <p>Previous restrictions on Ch0, Ch1, and Ch2 in <code>GXB_LO</code> and <code>GXB_RO</code> is updated in the Quartus II software 12.1. Ch0 in both <code>GXB_LO</code> and <code>GXB_RO</code> is now available for deterministic latency protocols.</p> <p>Applies to Arria V devices</p>	<p>—</p>

Description	Workaround
<p>Stratix V ATX PLL loses lock</p> <p>In versions of the Quartus II software prior to version 13.0, re-calibration of an unlocked ATX PLL on the same side of a Stratix V device as a locked ATX PLL might cause the locked ATX PLL to lose its lock.</p>	<p>Use the Quartus II software version 13.0</p>
<p>Stratix V ATX PLL stuck in nonoptimal gear</p> <p>In versions of the Quartus II software prior to version 13.0, Stratix V ATX PLLs might get stuck in a nonoptimal gear after an unsuccessful calibration. An unsuccessful calibration might occur if your system does not provide a stable REFCLK for calibration or if your design keeps an ATX PLL under reset during calibration.</p>	<p>Use the Quartus II software version 13.0</p>
<p>Incorrect VCCT/R_GXB recommendation in a Quartus II-generated .pin file when using Stratix V ATX PLL</p> <p>In Stratix V devices, the VCCT/R_GXB power supply requires 1.0 V nominal whenever an ATX PLL is used, regardless of data rates. In versions of the Quartus II software prior to version 13.0, the .pin file generated for data rates up to 6.5 Gbps incorrectly included 0.85 V/0.9 V instead of 1.0 V.</p>	<p>Use the Quartus II software version 13.0</p>

Changes to Software Behavior

This section documents instances in which the behavior and default settings of the Quartus II software have been changed from earlier releases of the software.

Refer to the Quartus II Default Settings File (.qdf),

<Quartus II installation directory>/**quartus/bin/assignment_defaults.qdf**, for a list of all the default assignment settings for the latest version of the Quartus II software.

Items listed in the following table represent cases in which the behavior of the current release of the Quartus II software is different from a previous version.

Description	Workaround
The Rapid Recompile feature is disabled in this release.	There is no workaround.
SOPC Builder is not provided with the Quartus II software and will not be provided in future versions.	Use Qsys. For guidelines to migrate your design from SOPC Builder to Qsys, refer to SOPC Builder to Qsys Migration Guidelines .

Device Support and Pin-Out Status

This section contains information about the device support status in the Quartus II software version 13.0.

Full Device Support

Full compilation, simulation, timing analysis, and programming support is now available for the new devices listed in the following table.

Device Family	Devices	
Arria V	5AGXA1	5AGXA3
	5AGXA5	5AGXA7
	5AGXB1	5AGXB3
	5AGXB5	5AGXB7
	5AGTC3	5AGTC7
	5AGTD3	5AGTD7
Arria V GZ	5AGZE1	5AGZE3
	5AGZE5	5AGZE7
Cyclone V	5CEA2	5CEA4
	5CEA5	5CEA7
	5CEA9	5CGXC3
	5CGXC4	5CGXC5
	5CGXC7	5CGXC9
	5CGTD5	5CGTD7
	5CGTD9	5CGXC7ES
	5CEA7ES	5CSEA6ES
	5CSXC6ES	—
Stratix V	5SEE9	5SEEB
	5SGXA9	5SGXAB
	5SGXB5	5SGXB6
	5SGXB9	5SGXBB
	5SGSD6	5SGSD8

Advance Device Support

Compilation, simulation, and timing analysis support is provided for the devices listed in [Table 1](#) that will be released in the near future. The Compiler generates pin-out information for these devices in this release, but does not generate programming files.

Table 1. Devices with Advance Support

Device Family	Devices	
Arria V	5AGXA5	5AGXA7
	5AGTC7	5ASXB3
	5ASXB5	5ASTD3
	5ASTD5	—
Cyclone V	5CSEA5	5CSEA6
	5CSXC5	5CSXC6
	5CSTD5	5CSTD6

Initial Information Device Support

Compilation, simulation, and timing analysis support is provided for the devices listed in Table 2 that will be released in upcoming versions of the Quartus II software. Programming files and pin-out information are not generated for these devices in this release.

Table 2. Devices with Initial Information Support

Device Family	Devices	
None	—	—

Timing and Power Models

Table 3 lists a summary of timing and power model status in the current version of the Quartus II software.

Table 3. Devices with Timing and Power Models

Device Family	Device	Timing Model Status	Power Model Status
Arria II GX	All	Correlated – 10.0 SP1	Final – 10.0
Arria II GZ	All	Final – 10.1	Final – 10.1
Arria V	5AGXB5	Final – 12.1 SP1 (3)	Preliminary
	5AGXB7	Final – 12.1 SP1 (3)	Preliminary
	5AGTD7	Final – 12.1 SP1 (3)	Preliminary
	5AGXA1	Preliminary	Preliminary
	5AGXA3	Preliminary	Preliminary
	5AGXA5	Preliminary	Preliminary
	5AGXA7	Preliminary	Preliminary
	5AGXB1	Final 13.0	Preliminary
	5AGXB3	Final 13.0	Preliminary
	5AGTD3	Final 13.0	Preliminary
Arria V GZ	All	Final – 12.1 SP1 (3)	Final 13.0
Cyclone III LS	All	Final – 10.0	Final – 10.0 SP1
Cyclone IV E	All	Final – 10.0 SP1	Final – 10.0 SP1
Cyclone IV GX	EP4CGX15	Final – 10.1	Final – 11.0
	EP4CGX22	Final – 11.0	
	EP4CGX30		Final – (1)
	EP4CGX50	Final – 11.0	Final –11.1
	EP4CGX75		
	EP4CGX110	Final – 10.1	Final – 11.0
	EP4CGX150		
Cyclone V	All	Preliminary	Preliminary
HardCopy III	All	Correlated – 11.1	Correlated – 12.0
HardCopy IV E	All	Correlated – 11.1	Correlated – 12.0

Table 3. Devices with Timing and Power Models (Continued)

Device Family	Device	Timing Model Status	Power Model Status
HardCopy IV GX	All	Correlated – 11.1	Correlated – 12.0
MAX V	All	Final – 11.0	Final – 11.0
Stratix IV	All	Correlated – 10.0 SP1 (2)	Final – 10.1
Stratix V	5SGXA7, 5SGXA5, 5SGTC5, 5SGTC7	Final – 12.1 (3)	Final 13.0
	5SGSD3, 5SGSD4, 5SGSD5, 5SGXA3, 5SGXA4, 5SGXB5, 5SGXB6, 5SGXAB, 5SGXA9, 5SEE9, 5SEEB, 5SGXB9, 5SGXBB	Final – 12.1 SP1 (3)	Final 13.0
	5SGSD6, 5SGSD8	Preliminary	Final 13.0
Notes to Table 3:			
(1) EP4CGX30BF14 and EP4CGX30CF19 are final in 11.0, EP4CGX30CF23 final in 11.1.			
(2) The timing model is updated for PMA Direct transceiver timing in Quartus II software release 12.0.			
(3) The timing model is updated in Quartus II software version 13.0. Refer to the Device Support Fixed section for details.			

The current version of the Quartus II software also includes final timing and power models for the Arria GX, Arria II GX, Cyclone, Cyclone II, Cyclone III, Cyclone III LS, Cyclone IV E, HardCopy II, MAX, MAX II, MAX IIZ, Stratix, Stratix GX, Stratix II, Stratix II GX, Stratix III, and Stratix IV device families. Timing models for these device families became final in the Quartus II software versions 10.1 or earlier.

EDA Interface Information

The Quartus II software version 13.0 supports the following EDA tools.

Synthesis Tools	Version	NativeLink Support
Mentor Graphics Precision RTL Synthesis	2013a	✓
Synopsys Synplify, Synplify Pro, and Synplify Premier	E-2013.03-SP1	✓
Simulation Tools	Version	NativeLink Support
Aldec Active-HDL	9.2 (Windows only)	✓
Aldec Riviera-PRO	2012.10	✓
Cadence INCISIV Enterprise Simulator	12.10.013 (Linux only)	✓
Mentor Graphics ModelSim®	10.1d	✓
Mentor Graphics ModelSim-Altera	10.1d	✓
Mentor Graphics Questa®	10.1d	✓
Synopsys VCS and VCS MX	2012.09-3	✓
Formal Verification Tools (Equivalence Checking)	Version	NativeLink Support
Cadence Encounter Conformal	8.1	—

Antivirus Verification

The Altera Complete Design Suite version 13.0 has been verified virus free using the following software:

AVG Version: 2013.0.3272

Virus database version: 3162/1

LinkScanner version: 1591

McAfee VirusScan Enterprise + AntiSpyware Enterprise Version: 8.8

Scan Engine Version: 5400.1158

DAT Version: 7042.0000

Software Issues Resolved

The following Customer Service Requests were fixed or otherwise resolved in the Quartus II software version 13.0:

Customer Service Request Numbers Resolved in the Quartus II Software Version 13.0							
10826903	10836354	10836659	10838069	10839633	10840755	10840791	10840905
10841247	10843327	10843529	10844511	10846989	10847001	10847461	10848017
10848719	10849302	10849878	10849935	10851552	10851560	10854054	10854461
10854601	10854894	10855563	10855593	10855735	10856538	10856900	10857446
10857457	10857972	10858157	10858350	10858663	10859341	10859745	10860351
10861193	10861638	10861715	10862004	10862023	10862430	10862814	10863233
10864470	10864817	10864821	10866399	10867325	10867583	10868007	10868656
10868695	10869086	10869866	10870632	10870634	10870672	10870738	10870890
10871110	10871757	10871903	10872095	10872333	10872347	10872441	10872508
10872684	10872860	10872865	10872890	10872920	10873162	10873554	10873763
10873777	10873944	10873949	10874020	10874196	10874596	10874604	10874668
10874822	10875257	10875332	10875702	10875806	10875855	10876139	10876462
10876828	10877087	10877102	10877218	10877386	10877553	10877772	10877825
10878157	10878203	10878330	10879111	10879138	10879190	10879447	10879598
10879734	10879916	10880138	10880232	10880521	10880651	10880654	10880675
10881404	10881797	10881806	10882228	10882327	10882941	10883041	10883081
10883389	10883455	10883820	10883917	10884107	10884395	10884579	10884608
10884796	10884822	10884915	10885007	10885157	10885252	10885331	10885477
10886634	10886651	10886665	10886750	10887004	10887581	10887668	10888014
10888063	10888803	10889107	10889273	10889318	10889334	10889806	10889842
10889849	10890043	10890684	10891322	10891664	10891684	10892125	10892342
10892688	10892905	10893017	10893362	10893581	10894135	10894332	10894643
10895077	10895314	10895493	10895523	10895935	10896144	10896145	10896167
10896400	10896467	10897058	10897089	10897100	10897443	10897575	10897600
10897681	10897989	10898207	10898288	10898369	10898455	10898496	10898656
10898899	10899108	10899290	10899498	10899602	10899949	10900020	10900042
10900058	10900391	10900485	10900555	10901034	10901039	10901089	10901116

Customer Service Request Numbers Resolved in the Quartus II Software Version 13.0							
10901361	10901445	10901641	10901770	10902069	10902155	10902161	10902207
10902338	10902380	10902390	10902566	10902632	10902880	10902917	10903133
10903206	10903219	10903244	10903434	10903621	10903692	10903694	10903731
10904318	10904461	10904491	10904720	10904790	10904793	10904882	10904951
10905082	10905623	10905673	10906340	10906483	10906535	10906995	10907386
10907518	10907545	10907557	10907623	10907737	10907784	10907977	10908107
10908226	10908246	10908248	10908272	10908372	10908666	10908742	10908751
10908831	10908950	10909153	10909279	10909289	10909426	10909485	10909660
10909756	10909829	10909830	10909865	10909878	10909962	10910063	10910084
10910194	10910303	10910530	10910633	10910770	10910774	10910849	10910897
10910979	10911157	10911202	10911282	10911309	10911341	10911361	10911369
10911439	10911537	10911624	10911719	10911918	10911939	10911980	10911989
10912109	10912124	10912166	10912216	10912258	10912598	10912622	10912624
10912818	10912863	10912864	10912979	10913009	10913058	10913373	10913388
10913403	10913479	10913664	10913810	10913901	10913975	10914063	10914139
10914198	10914201	10914216	10914228	10914285	10914377	10914520	10914534
10915070	10915140	10915236	10915529	10915544	10915574	10915588	10915930
10916058	10916197	10916233	10916407	10916439	10916557	10916606	10916901
10916914	10916932	10916985	10917050	10917113	10917385	10917604	10917610
10917682	10917872	10917873	10917925	10917960	10918361	10918364	10918428
10918492	10918495	10918533	10918580	10918606	10918861	10918866	10919092
10919116	10919328	10919476	10919566	10919635	10919703	10919827	10919838
10919961	10920068	10920094	10920131	10920143	10920196	10920242	10920271
10920378	10920414	10920651	10920805	10920902	10920971	10920993	10921077
10921191	10921322	10921560	10921914	10921941	10922149	10922196	10922212
10922290	10922431	10922446	10922718	10922744	10922806	10922848	10923264
10923312	10923484	10923489	10923668	10923681	10923781	10923806	10923872
10923904	10923934	10923960	10923979	10924001	10924026	10924065	10924124
10924405	10924419	10924748	10924789	10924902	10925116	10925194	10925201
10925519	10925846	10925852	10925882	10926233	10926261	10926465	10926503
10926540	10926582	10926778	10926833	10927309	10927323	10927398	10927550
10927600	10927670	10927750	10927807	10927907	10928049	10928177	10928211
10928368	10928377	10928416	10928763	10928808	10929394	10929415	10929439
10929949	10929970	10929973	10930159	10930354	10930444	10930648	10930658
10931015	10931101	10931220	10931481	10931610	10931701	10931709	10931919
10931930	10932082	10932655	10932719	10932748	10932769	10932889	10933053
10933121	10933131	10933344	10933527	10933567	10933834	10934477	10934516
10934667	10935161	10935251	10935503	10935615	10935751	10936248	10936424
10936948	10937202	10937206	10937244	10937359	10937371	10937539	10937637

Customer Service Request Numbers Resolved in the Quartus II Software Version 13.0							
10939250	10939448	10939574	10940752	10940753	10941962	10943076	10943791
10943875	—	—	—	—	—	—	—

Software Patches Included in this Release

The Quartus II software version 13.0 includes the following patches released for previous versions of the Quartus II software:

Quartus II Software Version	Patch	Customer Service Request Number	Quartus II Software Version	Patch	Customer Service Request Number
13.0cb	0.01b	10923349	12.1	0.dp5h	10916932
12.1sp1	1.dp6j	10916932	12.1	0.dp5a	10900645
12.1sp1	1.dp6f	10929908	12.1	0.dp3a	10870694
12.1sp1	1.dp6e	—	12.1	0.40	10908723
12.1sp1	1.dp6b	10887004	12.1	0.39	10936047
12.1sp1	1.dp6a	—	12.1	0.38	10917934
12.1sp1	1.dp5a	—	12.1	0.36	10914063
12.1sp1	1.48	10935046	12.1	0.35	10928368
12.1sp1	1.47	10921445	12.1	0.33	10923934
12.1sp1	1.38	10924124	12.1	0.32	10913975
12.1sp1	1.36	—	12.1	0.29	10917604
12.1sp1	1.34	10934334	12.1	0.27	10915930
12.1sp1	1.33	10929519	12.1	0.25	10914719
12.1sp1	1.30	10930576	12.1	0.24	10907784
12.1sp1	1.28	—	12.1	0.14	10907784
12.1sp1	1.27	10928808	12.1	0.13	10886490
12.1sp1	1.25	10903692	12.1	0.12	10888014
12.1sp1	1.23	10931343	12.1	0.10	10907784
12.1sp1	1.19	—	12.0sp2	2.dp9c	10896162
12.1sp1	1.15	10921167	12.0sp2	2.dp9b	10896162
12.1sp1	1.14	10913975	12.0sp2	2.dp10j	—
12.1sp1	1.11	10917940	12.0sp2	2.47	10924124
12.1sp1	1.08	10919703	12.0sp2	2.46	10914192
12.1sp1	1.05	10904882	12.0sp2	2.04	10870890

Quartus II Software Version	Patch	Customer Service Request Number	Quartus II Software Version	Patch	Customer Service Request Number
12.1sp1	1.03	—	12.0sp2	1.14	10870890
12.1sp1	1.01	—	10.1sp1	1.112	10913975

Latest Known Quartus II Software Issues

For more information about known software issues, look for information on the **Quartus II Software Support** page at the following URL:

<http://www.altera.com/support/software/sof-quartus.html>

You can find known issue information for previous versions of the Quartus II software on the Knowledge Database page at the following URL:

<http://www.altera.com/support/kdb/kdb-index.jsp>

Document Revision History

The following table shows the revision history for this document.

Document Revision History

Date	Version	Changes
May 2013	13.0.0	Initial release