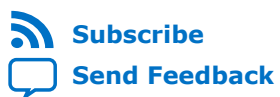




Intel[®] Quartus[®] Prime Pro Edition

Version 21.1 Software and Device Support Release Notes

Updated for Intel[®] Quartus[®] Prime Design Suite: **21.1**



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1. Intel® Quartus® Prime Pro Edition Version 21.1 Software and Device Support Release Notes

This document provides late-breaking information about Intel® Quartus® Prime Pro Edition Version 21.1.

For additional information about this software release, refer to the Intel Quartus Prime Pro Edition README file in the following location: `<installation directory>/quartus/readme.txt`

For information about operating system support, refer to the following web page: [Intel FPGA Operating System Support](#).

Related Information

[Intel Quartus Prime Standard Edition Software and Device Support Release Notes](#)

1.1. New Features and Enhancements

Intel Quartus Prime Pro Edition Software Version 21.1 includes functional and security updates. Keep your software up-to-date and follow the [technical recommendations](#) that help improve the security of your Intel Quartus Prime installation.

Intel Quartus Prime Pro Edition Software Version 21.1 includes the following new features and enhancements:

- Added Snapshot Viewer for Finalized stage of compilation.
- Added the ability to create database-only archives of your Quartus project.
- Added support for resuming a Quartus compilation flow from the command line, in addition to the existing compilation flow resume feature in the Quartus Compilation Dashboard.
- Added options to enable immediate assertions in the Compiler for information, warning, and error messages for SystemVerilog and VHDL designs.
- Added **Open Source File** menu item when you right-click a file in the Synthesis Source Files Read report.
- Added **Locate Node > Locate in Design File** menu item when you right-click a file in the Source Assignments report.
- Enhanced the `*.syn.rpt` and `*.sta.rpt` text-based report files to show the source location of HDL-embedded SDC or timing constraints.
- Added the ability to promote **Critical Warning** messages to **Error** messages. Messages that are promoted to Error messages cause compilation to be unsuccessful.
- Enhanced Compilation Report to show number of failing endpoints per domain that contribute to total negative slack (TNS) for a clock.

- For Intel Agilex™ devices, the Power and Thermal Calculator is enhanced as follows:
 - Thermal Report shows all sensor values that match IP Sense values that you use.
 - Thermal Report shows temperature Margin, Power Margin and Temperature sensor data for each die
 - Removed the +/-5 °C junction temperature (TJ) variation from Thermal report.
 - Added ability to designate pins to desired I/O banks.
- For Intel Agilex and Intel Stratix® 10 devices, added support for double bit/multibit injection to the Fault Injection Debugger.
- Enhanced the Programming File Generator to support Remote System Update (RSU) single Application image generation (.rpd) with relative addressing mode.
- Enhanced the following Timing Analyzer reports to provide more information:
 - **Design Metrics > Report Logic Depth**
 - **Design Metrics > Report Neighbor Paths**
 - **Design Metrics > Report Pipelining Information**
- Added the following reports to Timing Analyzer:
 - **Custom Reports > Report Asynchronous CDC**
 - **Design Metrics > Report Reset Statistics**
- Enhanced Design Assistant GUI to enable waiving rule violations and previewing the effects of new rule waivers on the existing set of violations without rerunning Design Assistant. You can also delete waivers if the waiver no longer applies.
- Added new Design Assistant rules and refined existing rules for timing closure, SDCs, and cross clock transfers.
- Enhanced Design Assistant rule classification with the ability to tag rules and filter rules by tags.
- Enhanced Design Assistant rule parameter editing so that rules that share a parameter can have the new parameter value applied to all or a subset of rules that share the parameter.

Intel Quartus Prime Pro Edition Software Version 21.1 also includes bug fixes. Review [Software Issues Resolved](#) on page 14 and [Software Patches Included in this Release](#) on page 15 to see if this version contains fixes for or otherwise resolves any of your customer service requests.

1.2. Changes to Software Behavior

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

- You can now choose the simulators that Intel Quartus Prime Pro Edition software generate simulation files for. If you do not choose any simulators, Intel Quartus Prime Pro Edition software generates simulation files for all supported simulators.

In previous versions, you could not select the simulators. Intel Quartus Prime Pro Edition software always generated simulation files for all supported simulators.

- The Analysis & Elaboration stage of Analysis & Synthesis now continues to completion after encountering an undefined entity. If an undefined entity is encountered, compilation flow stops before the Fitter stage. All undefined entities encountered during the Analysis & Elaboration stage are listed in a new Undefined Entities report.

In previous versions, the compilation flow would stop at the first encountered undefined entity.

- For Intel Agilex devices, SRAM object files (.sof) generated by Intel Quartus Prime Pro Edition Version 20.3 or earlier cannot be used in Version 21.1 to generate configuration bitstream files (.rbf/.jic/.rpd/.pof). You must recompile your design in Version 21.1 to generate .sof files that can be used to generate configuration bitstreams.

Intel Quartus Prime Pro Edition Versions 21.1 and later reject .sof files generated with Versions 20.3 or earlier.

- Compiling a design with an illegal LVDS OE now generates an error. In previous versions, no error was generated and your design compiled successfully, but was functionally incorrect.

For more details, refer to [Error\(21961\): Input port OE of a "LVDS" I/O output buffer "" is not supported.](#) in the Intel FPGA Knowledge Base.

- For Intel Agilex devices, the Thermal Page of the Power and Thermal Calculator, the **Calculation mode** option **Find maximum junction temperature for cooling solution** is renamed to **Find available thermal margin for cooling solution**.
- Avalon Interconnect terminology is changing. Avalon master interfaces are now Avalon *host* interfaces, and Avalon slave interfaces are now Avalon *agent* interfaces. This terminology change affects the Intel Quartus Prime Pro Edition software as follows:
 - For Avalon memory-mapped interfaces, Platform Designer updated interface descriptions and related GUI elements to use the new terminology.
- Intel Quartus Prime Pro Edition software now requires processors with one of the following microarchitectures:
 - Intel Nehalem (2008) or later
 - AMD Bulldozer (2011) or laterProcessors must support SSE4.2 or later.

- Starting with the Intel Agilex device family, the EDA netlist writer does not support IBIS model generation. The EDA netlist writer continues to support IBIS model generation for earlier device families.

You can download IBIS models for all device families from the following web page: [IBIS Models for Intel Devices](#). This page is updated as IBIS models for devices become available.

- Intel FPGA IP cores are transitioning to a new version number scheme. Previously, IP core version numbers aligned with Intel Quartus Prime version numbers.

Under the new scheme, IP core version numbers move to a three-part version numbering scheme (X.Y.Z) that is independent of Intel Quartus Prime version numbers. Changes in the parts of an IP core version number indicate different things and might require actions on your part:

- X:** A change in X indicates a major revision of the IP. You must regenerate the IP.
- Y:** A change in Y indicates that the IP includes new features, but retains backwards compatible behavior, ports, and parameters with all X level IP cores. Regenerate the IP to include these new features.
- Z:** A change in Z indicates that the IP includes bug fixes and minor improvements, but retains backwards compatible behavior, ports, and parameters with all X level IP cores. Regenerate the IP to include the fixes and improvements.

In addition, new IP cores start their version numbering at 1.0.0. Existing IP cores adopt the new numbering scheme but increment the version number from their current version number.

Review your IP core release notes to confirm the versioning scheme for your IP core.

Refer to the Intel Quartus Prime Default Settings File (.qdf), `<Quartus Prime installation directory>/quartus/bin/assignment_defaults.qdf`, for a list of all the default assignment settings for the latest version of the Intel Quartus Prime software.

1.2.1. Deprecated Features and Functions

The functions and features listed in this section have been deprecated but not removed from Intel Quartus Prime Pro Edition Version 21.1 or earlier. Migrate your tools and processes to use the replacement or alternate features and functions before the deprecated features and functions are removed.

Features and Functions Deprecated as of Intel Quartus Prime Pro Edition Version 21.1

No features or functions have been deprecated in Intel Quartus Prime Pro Edition Version 21.1.

Features and Functions Deprecated as of Intel Quartus Prime Pro Edition Version 20.4

No features or functions have been deprecated in Intel Quartus Prime Pro Edition Version 20.4.

Features and Functions Deprecated as of Intel Quartus Prime Pro Edition Version 20.3

The following features and functions are deprecated as of Intel Quartus Prime Pro Edition Version 20.3:

- Support for Cadence* Incisive* Enterprise Simulator (IES).
Use Cadence Xcelium* Parallel Logic Simulation or another supported simulation tool instead. For a list of supported simulation tools, see [EDA Interface Information](#) on page 13.
Starting with Version 21.1, support for Cadence Incisive Enterprise Simulator (IES) is removed.
- Rapid Recompile compile flow
Use ECO compile flow instead.
Starting with Version 21.1, support for Rapid Recompile flow is removed.
- **Report Timing Closure Recommendations** command
Use the **Report DRC** command in Design Assistant instead. The design rule check (DRC) include rules used to report timing closure recommendations.
- Intel Hyperflex™ Retimer Rules (HRR) category in Design Assistant.
The rules in the HRR category have been moved into the Timing Closure Rules (TMC) category and the Reset Rules (RR) category.

1.2.2. Removed Features and Functions

The functions and features listed in this section have been removed from Intel Quartus Prime Pro Edition Version 21.1 or earlier.

Features and Function Removed from Intel Quartus Prime Pro Edition Version 21.1

- Removed support for Cadence Incisive Enterprise Simulator (IES).
- Removed Rapid Recompile flow.
- For Intel Stratix 10 devices, removed support for the following Active Serial configuration clock (AS_CLK) frequencies: 133 MHz, 108 MHz.

Features and Functions Removed from Intel Quartus Prime Pro Edition Version 20.4

No features or functions have been removed from Intel Quartus Prime Pro Edition Version 20.4.

Features and Functions Removed from Intel Quartus Prime Pro Edition Version 20.3

As of Intel Quartus Prime Version 20.3, the components that comprised the Intel SoC Embedded Development Suite (EDS) are available only through GitHub.

For details, see the Intel Download Center for FPGAs: <https://fpgasoftware.intel.com/soceds/>.

1.3. Operating System Support

Information about operating system support for the Intel Quartus Prime Design Suite is available on the Operating System Support page of the Intel FPGA website.

Operating System Support Changes in Intel Quartus Prime Pro Edition Version 21.1

There are no operating system support changes in Intel Quartus Prime Pro Edition Version 21.1.

Operating System Support Changes in Intel Quartus Prime Pro Edition Version 20.4

There are no operating system support changes in Intel Quartus Prime Pro Edition Version 20.4.

Operating System Support Changes in Intel Quartus Prime Pro Edition Version 20.3

Intel Quartus Prime Pro Edition Version 20.3 added support for the following operating systems:

- CentOS* 8.0
- Red Hat* Enterprise Linux* 8
- SUSE* Linux Enterprise Server 15
- Ubuntu* Linux 20 LTS
- Windows Server* 2019

Intel Quartus Prime Pro Edition Version 20.3 removed support for the following operating systems:

- Red Hat Enterprise Linux 6
- Ubuntu Linux 14 LTS

Related Information

- [Operating System Support](#)
- [Download Center for FPGAs](#)

1.4. Memory Recommendations

A full installation of the Intel Quartus Prime Pro Edition software requires up to 140 GB of available disk space.

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

Note: Peak virtual memory might exceed these recommendations. These recommendations are based on the amount of physical memory required to achieve runtime within 10% of that achieved on hardware with an infinite amount of RAM.

Table 1. Memory Requirements for Processing Designs

These requirements are the same for both Windows and Linux installations.

Family	Device	Recommended Physical RAM
Intel Agilex	AGFA022, AGFB022, AGFA027, AGFB027	72 GB
	AGFA012, AGFB012, AGFA014, AGFA014-R0, AGFB014, AGFB014-R0	64 GB
Intel Arria® 10	10AT115, 10AX115	48 GB
	10AT090, 10AX090	44 GB
	10AS066, 10AX066	32 GB
	10AS057, 10AX057	30 GB
	10AS048, 10AX048	28 GB
	10AS032, 10AX032	24 GB
	10AS027, 10AX027	22 GB
	10AS022, 10AX022	20 GB
	10AS016, 10AX016	18 GB
Intel Cyclone® 10 GX	10CX85, 10CX105, 10CX150, 10CX220	18 GB
Intel Stratix 10	1SD21BP, 1SD280P, 1SG10MH, 1SG210H, 1SG211H, 1SG250H, 1SG250L, 1SG280H, 1SG280L, 1SM21BE, 1SM21BH, 1SM21CH, 1ST210E, 1ST250E, 1ST280E, 1SX210H, 1SX250H, 1SX250L, 1SX280H, 1SX280L	64 GB
	1SG165H, 1SG166H, 1SM16BE, 1SM16BH, 1SM16CH, 1ST165E, 1SX165H	48 GB
	1SD110P, 1SG040H, 1SG065H, 1SG085H, 1SG110H, 1ST040E, 1ST085E, 1ST110E, 1SX065H, 1SX085H, 1SX110H, 1SX040H	32 GB

1.5. Device Support and Pin-Out Status

Table 2. Final Device Support

Final compilation, simulation, timing analysis, and programming support is available for the devices listed in this table. These devices have finalized device models, bitstream, and firmware.

Device Family	Devices
Intel Arria 10	10AS016, 10AS022, 10AS027, 10AS032, 10AS048, 10AS057, 10AS066 10AT090, 10AT115 10AX016, 10AX022, 10AX027, 10AX032, 10AX048, 10AX057, 10AX066, 10AX090, 10AX115
Intel Cyclone 10 GX	10CX085, 10CX105, 10CX150, 10CX220
Intel Stratix 10	1SD110P, 1SD21BP, 1SD280P 1SG040H, 1SG085H, 1SG10MH, 1SG110H, 1SG165H, 1SG166H, 1SG210H, 1SG211H, 1SG250H, 1SG250L, 1SG280H, 1SG280L 1SM16BE, 1SM16BH, 1SM16CH, 1SM21BE, 1SM21BH, 1SM21CH, 1ST040E, 1ST085E, 1ST110E, 1ST165E, 1ST210E, 1ST250E, 1ST280E 1SX040H, 1SX085H, 1SX110H, 1SX165H, 1SX210H, 1SX250H, 1SX250L, 1SX280H, 1SX280L

Table 3. Preliminary Device Support

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

Device Family	Devices
Intel Agilex	AGFA012, AGFA014, AGFA014-R0, AGFA027-R0 AGFB012, AGFB014, AGFB014-R0, AGFB027-R0
Intel Stratix 10	1SD110P-S1 1SG065H, 1SG280H-S3, 1SG280L-S3 1SX065H, 1SX280H-S3, 1SX280L-S3

Table 4. Advance Device Support

Compilation, simulation, and timing analysis support is provided for these devices. The compiler generates pinout information for these devices in this release, but does not generate programming files.

Device Family	Devices
Intel Agilex	AGFA022, AGFA027 AGFB022, AGFB027

Table 5. Initial Device Support

Compilation, simulation, and timing analysis support is provided for these devices. Programming files and pinout information are not generated for these devices in this release.

Device Family	Devices
No devices with this status in Intel Quartus Prime Pro Edition Version 21.1.	

1.5.1. Changes in Device Support

Starting with Intel Quartus Prime Version 20.1, a new device support level was introduced: **Preliminary** device support.

For devices with **Preliminary** device support, Intel Quartus Prime provides full compilation, simulation, timing analysis, and programming support but the device models, bitstreams, and firmware for the devices are not finalized.

Devices with **Final** device support (previously *Full*) have finalized device models, bitstreams, and firmware.

The definitions of **Initial** and **Advance** device support levels are unchanged.

For information about known device issues and workarounds, refer to the following web page: [Intel FPGA Knowledge Base](#).

Changed Device Support

Support for the following devices moves from **Preliminary** device support to **Final** device support:

- 1SG040H
- 1SX040H

Support for the following devices moves from **Advance** device support to **Preliminary** device support:

- 1SG065H
- 1SX065H
- AGFA012
- AGFA014
- AF027-R0
- AGFB012
- AGFB014
- AGFB027-R0

1.6. Timing Model, Power Model, and Device Status

Only devices with a timing model, power model, and device status of **Final** are suitable for production systems.

Table 6. Timing Model, Power Model, and Device Status

Device Family	Device	Timing Model Status	Power Model Status	Device Status
Intel Agilex	AGFA014-R0, AGFB014-R0	Preliminary	Preliminary	Preliminary
	AGFA012, AGFA014, AGFA022, AGFA027, AGFB012, AGFB014, AGFB022, AGFB027	Preliminary	Preliminary	Preliminary
Intel Arria 10	10AX016, 10AS016, 10AX022, 10AS022, 10AX027, 10AS027, 10AX032, 10AS032	Final – 16.1 ⁽¹⁾ (²)	Final – 17.0	Final – 17.0
	10AX048, 10AS048	Final – 16.0.2 ⁽²⁾		
	10AX057, 10AS057, 10AX066, 10AS066, 10AT090, 10AX090	Final – 16.0.1 ⁽²⁾	Final – 16.0.1	Final – 16.0.1
	10AX115, 10AT115	Final – 16.0 ⁽²⁾	Final – 16.0	Final – 16.0
Intel Cyclone 10 GX	10CX085, 10CX105, 10CX150, 10CX220	Final – 17.0	Final – 18.0	Final – 18.0
Intel Stratix 10	1SG280L, 1SX280L, 1SG250L, 1SX250L	Final – 18.0.1	Final – 18.1.1	Final – 18.1.1
	1SG280H, 1SX280H, 1SG250H, 1SX250H, 1SG210H, 1SX210H, 1SG165H, 1SX165H, 1SG110H, 1SX110H, 1SG085H, 1SX085H	Final – 18.1.1	Final – 18.1.1	Final – 18.1.1
	1ST280E, 1ST250E	Final – 18.1.1	Final – 19.4	Final – 19.4
	1SM21BH, 1SM21CH, 1SM16BH, 1SM16CH	Final – 19.1	Final – 19.1	Final – 19.1
	1SG10MH, 1SG166H, 1SG211H	Final – 19.1	Final – 19.3	Final – 19.3
	1ST210E, 1SM21BE, 1ST165E, 1SM16BE	Final – 19.2	Final – 19.4	Final – 19.4
	1SD280P, 1ST040E, 1ST085E, 1ST110E	Final – 20.1	Final – 20.1	Final – 20.1
	1SD110P	Final – 20.2	Final – 20.2	Final – 20.2
	1SD21BP	Final – 20.3	Final – 20.3	Final – 20.3
	1SG040H, 1SX040H	Final – 20.3	Final – 20.3	Final – 21.1
1SG065H, 1SX065H	Preliminary	Preliminary	Preliminary	

Related Information

[System Design with Advance FPGA Timing Models](#)

(1) Devices with a -1 speed grade were finalized in Intel Quartus Prime software version 17.0

(2) All military grade devices were finalized in Intel Quartus Prime software version 18.0.1.

1.7. IBIS Models

Table 7. IBIS Model Status for the Intel Quartus Prime Pro Edition Software Release Version 21.1

Device families have IBIS model statuses that are either Advance, Preliminary, or Final.

Device Family	IBIS Model Status
Intel Agilex	Refer to IBIS Models for Intel Devices .
Intel Arria 10	Final - 16.1.2
Intel Cyclone 10 GX	Final - 17.0
Intel Stratix 10	Final - 18.1

Starting with the Intel Agilex device family, IBIS models are available only online at the following web page: [IBIS Models for Intel Devices](#). This page is updated as IBIS models for devices become available or are updated.

1.8. EDA Interface Information

Table 8. Synthesis Tools Supporting the Intel Quartus Prime Pro Edition Software Release Version 21.1

Synthesis Tools	Version
Mentor Graphics* Precision*	Mentor Graphics Precision versions that support the Intel Quartus Prime software are typically released after the release of the Intel Quartus Prime software. Contact Mentor Graphics for versions of Mentor Graphics* Precision that support Intel Quartus Prime Pro Edition Software Version 21.1.
Synopsys* Synplify*, Synplify Pro*, and Synplify Premier	Synopsys Synplify, Synplify Pro, and Synplify Premier versions that support the Intel Quartus Prime software are typically released after the release of the Intel Quartus Prime software. Contact Synopsys for versions of Synopsys Synplify, Synplify Pro, and Synplify Premier that support Intel Quartus Prime Pro Edition Software Version 21.1.

Table 9. Simulation Tools Supporting the Intel Quartus Prime Pro Edition Software Release Version 21.1

The following simulation tools support RTL and functional gate-level simulation.

Simulation Tools	Version
Aldec* Active-HDL*	11.1 (Windows 32-bit only)
Aldec Riviera-PRO*	2019.10 (64-bit only)
Cadence Xcelium Parallel Logic Simulation	20.09 (64-bit Linux only)
Mentor Graphics ModelSim* PE	2020.4 (Windows 32-bit only)
Mentor Graphics ModelSim SE	2020.4 (64-bit only)
Mentor Graphics ModelSim-Intel FPGA Edition*	2021.1 (32-bit only)
Mentor Graphics Questa* Advanced Simulator	2020.4 (64-bit only)
Synopsys VCS* and VCS MX	Q-2020.03-SP2 (64-bit Linux only)

Mentor Graphics ModelSim-Intel FPGA Edition requires licensing daemon version 11.16.4.0 (or later). You can obtain the licensing daemon from the [Intel FPGA License Daemon Downloads](#) web page.

Operating System Support for Mentor Graphics ModelSim-Intel FPGA Edition version 2020.2 (requires 32-bit libraries)

- Red Hat Enterprise Linux 7 (64-bit)
- Red Hat Enterprise Linux 8 (64-bit)
- SUSE Linux Enterprise Server 12 (64-bit)
- Windows* 10 (64-bit)

1.9. Antivirus Verification

The Intel Quartus Prime software release version 21.1 has been verified virus free with the following software:

Antivirus Verification Software

McAfee VirusScan Command Line for Linux64 Version: 6.1.3.242
 AV Engine version: 6010.8670 for Linux64.
 Dat set version: 9937 created Mar 28 2021

1.10. Software Issues Resolved

The following customer service requests were fixed or otherwise resolved in Intel Quartus Prime Pro Edition Version 21.1:

Table 10. Issues Resolved in the Intel Quartus Prime Pro Edition Version 21.1

Customer Service Request Numbers							
00289153	00456987	00459867	00469284	00486450	00489696	00496796	00497459
00500920	00501691	00504025	00505988	00506314	00508334	00509738	00509979
00511773	00512071	00512080	00512087	00513730	00515855	00516176	00517761
00519774	00520812	00520892	00521462	00522286	00523658	00525469	00525573
00525621	00525746	00526215	00529805	00529816	00532195	00532594	00533671
00533826	00534428	00536132	00536686	00537322	00537417	00537682	00538274
00538302	00538320	00538432	00538514	00538538	00538856	00539610	00539628
00541184	00545866	00549465	00549616	00549690	00550205	00550679	00550737
00551523	00552264	00552614	00553742	00554429	00554854	00555744	00556061
00556182	00556791	00556802	00557514	00557749	00558486	00558503	00559029
00559336	00560350	00567255	00569601	00571983	00572061	00573576	00573634
00573738	00573958	00574287	00574942	00575980	00577716	00578469	00580453
00580855	00581925	00583658	00584117	00585791	00585819	00586241	00586579
00586903	00588065	00588349	00589109	00589564	00590197	00592571	00592767
00592796	00594842	00600345	00600654	04620704	04827103	04844213	04960293

1.11. Software Patches Included in this Release

Intel Quartus Prime Pro Edition Version 21.1 contains the following patches for previous versions of Intel Quartus Prime Pro Edition software:

Table 11. Software Patches included in Intel Quartus Prime Pro Edition Version 21.1

Software Version	Patch	Customer Service Request Number
Intel Quartus Prime Version 20.4	0.25fw	-
Intel Quartus Prime Version 20.4	0.22	00556452
Intel Quartus Prime Version 20.4	0.21	-
Intel Quartus Prime Version 20.4	0.19	00589564
Intel Quartus Prime Version 20.4	0.18	00584117
Intel Quartus Prime Version 20.4	0.15fw	00525573
Intel Quartus Prime Version 20.4	0.11	-
Intel Quartus Prime Version 20.4	0.09	-
Intel Quartus Prime Version 20.4	0.08	00579192
Intel Quartus Prime Version 20.4	0.07	-
Intel Quartus Prime Version 20.4	0.06	-
Intel Quartus Prime Version 20.4	0.02i	00600654
Intel Quartus Prime Version 20.4	0.02	00573576
Intel Quartus Prime Version 20.3	0.50	00592571
Intel Quartus Prime Version 20.3	0.49	00585791
Intel Quartus Prime Version 20.3	0.46	00572061
Intel Quartus Prime Version 20.3	0.45	00550205
Intel Quartus Prime Version 20.3	0.44fw	00526232
Intel Quartus Prime Version 20.3	0.42	-
Intel Quartus Prime Version 20.3	0.39	00557513
Intel Quartus Prime Version 20.3	0.35	00055679
Intel Quartus Prime Version 20.3	0.32	00550794
Intel Quartus Prime Version 20.3	0.27	-
Intel Quartus Prime Version 20.3	0.19	-
Intel Quartus Prime Version 20.3	0.18	-
Intel Quartus Prime Version 20.3	0.17	-
Intel Quartus Prime Version 20.3	0.15	-
Intel Quartus Prime Version 20.3	0.14	00552614
Intel Quartus Prime Version 20.3	0.12	-
Intel Quartus Prime Version 20.3	0.09	-
Intel Quartus Prime Version 20.3	0.07	-

continued...

Software Version	Patch	Customer Service Request Number
Intel Quartus Prime Version 20.3	0.02	-
Intel Quartus Prime Version 20.2	0.55	00589564
Intel Quartus Prime Version 20.2	0.53fw	00526232
Intel Quartus Prime Version 20.2	0.52fw	00525573
Intel Quartus Prime Version 20.2	0.49	00550737
Intel Quartus Prime Version 20.2	0.48	-
Intel Quartus Prime Version 20.2	0.43	00508334, 00512071, 00512087
Intel Quartus Prime Version 20.2	0.40	-
Intel Quartus Prime Version 20.2	0.39	00533408
Intel Quartus Prime Version 20.2	0.37	00541971
Intel Quartus Prime Version 20.2	0.29	-
Intel Quartus Prime Version 20.2	0.07	00525621
Intel Quartus Prime Version 20.1	0.55fw	00525573
Intel Quartus Prime Version 20.1	0.51	00522286
Intel Quartus Prime Version 20.1	0.50	-
Intel Quartus Prime Version 20.1	0.49	-
Intel Quartus Prime Version 20.1	0.48	-
Intel Quartus Prime Version 20.1	0.39	-
Intel Quartus Prime Version 20.1	0.37	00538514
Intel Quartus Prime Version 20.1	0.36	00537682
Intel Quartus Prime Version 20.1	0.35	-
Intel Quartus Prime Version 20.1	0.33	00523162
Intel Quartus Prime Version 19.4	0.40	-
Intel Quartus Prime Version 19.4	0.38	-
Intel Quartus Prime Version 19.4	0.37	00492904
Intel Quartus Prime Version 19.3	0.77fw	-
Intel Quartus Prime Version 19.3	0.73	00559336
Intel Quartus Prime Version 19.3	0.71	00549690
Intel Quartus Prime Version 19.3	0.70	00548799
Intel Quartus Prime Version 19.3	0.68	-
Intel Quartus Prime Version 19.3	0.62	00539404
Intel Quartus Prime Version 19.2	0.29	-
Intel Quartus Prime Version 19.2	0.28	00543139
Intel Quartus Prime Version 19.2	0.23	00538538
Intel Quartus Prime Version 19.2	0.22	00522286
<i>continued...</i>		



Software Version	Patch	Customer Service Request Number
Intel Quartus Prime Version 19.1	0.56	00537322
Intel Quartus Prime Version 19.1	0.13	-
Intel Quartus Prime Version 18.1	0.52	-

1.12. Latest Known Intel Quartus Prime Software Issues

Information about known issues that affect Intel Quartus Prime Pro Edition Version 21.1 is available in the Intel Programmable Solutions Knowledge Base.

Table 12. Important Known Issues Affecting Intel Quartus Prime Pro Edition Version 21.1

Description	Workaround
<p>When you use Synopsys VCS and VCS MX Version Q-2020.03-SP2 to simulate a design that uses altera_syncram IPs, you might see incorrect functionality that can include incorrect data output and incorrect data being written to memory.</p>	<p>Use Synopsys VCS and VCS MX Version P-2019.06 or earlier to simulate designs that use altera_syncram IPs. For more details, refer to Why does my altera_syncram IP functions incorrectly in simulation? in the Intel FPGA Knowledge Base.</p>
<p>For Intel Agilex devices, you might see the following error during the Fitter Retime stage when you have a critical chain on constrained I/Os:</p> <pre data-bbox="228 743 799 837"> Quartus: Fatal Error: Segment Violation: faulting address=(nil), ... Module: quartus_fit </pre>	<p>For details, refer to Quartus: Fatal Error: Segment Violation: faulting address=(nil), ... Module: quartus_fit in the Intel FPGA Knowledge Base.</p>

For other issues that affect Intel Quartus Prime Pro Edition Version 21.1, refer to [What problems do I need to know about in the Intel Quartus Prime Pro Edition software version 21.1?](#) in the Intel FPGA Knowledge Base.

You can find known issue information for previous versions of the Quartus Prime software on the [Intel FPGA Knowledge Base](#) web page.

Information about known software issues that affect previous versions of the Quartus II software is available on the [Intel Quartus Prime and Quartus II Software Support](#) web page.

Information about issues affecting the Intel FPGA IP Library is available in the release notes for each IP. You can find the IP release notes on the [Intel FPGAs and Programmable Devices Release Notes](#) web page.

Related Information

- [Intel FPGA Knowledge Base](#)
- [Intel Quartus Prime and Quartus II Software Support](#)
- [Intel FPGAs and Programmable Devices Release Notes](#)

1.13. Intel Quartus Prime Pro Edition Version 21.1 Software and Device Support Release Notes Archives

Intel Quartus Prime Pro Edition	Publication
20.4	Intel Quartus Prime Pro Edition Version 20.4 Software and Device Support Release Notes
20.3	Intel Quartus Prime Pro Edition Version 20.3 Software and Device Support Release Notes
20.2	Intel Quartus Prime Pro Edition Version 20.2 Software and Device Support Release Notes
20.1	Intel Quartus Prime Pro Edition Version 20.1 Software and Device Support Release Notes
19.4	Intel Quartus Prime Pro Edition Version 19.4 Software and Device Support Release Notes
19.3	Intel Quartus Prime Pro Edition Version 19.3 Software and Device Support Release Notes
19.2	Intel Quartus Prime Pro Edition Version 19.2 Software and Device Support Release Notes
19.1	Intel Quartus Prime Pro Edition Version 19.1 Software and Device Support Release Notes
18.1	Intel Quartus Prime Pro Edition Version 18.1 Software and Device Support Release Notes
18.0	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes
17.1	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes
17.0	Intel Quartus Prime Pro Edition Software and Devices Support Release Notes

1.14. Document Revision History

Table 13. The Intel Quartus Prime Pro Edition Software Release Version 21.1 Document Revision History

Document Version	Intel Quartus Prime Version	Changes
2021.03.29	21.1	<ul style="list-style-type: none"> Initial release.