



Intel® RealSense™ D400 Series

Specification Update

Revision 002

March 2018

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Revision History

Document Number	Revision Number	Description	Revision Date
337125	001	Firmware 5.8.15 Release	February 2018
	002	Firmware 5.9.2 Release	March 2018

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1 Preface

This document is an update to the specification contained in the [Affected Documents](#) table below. This document is a compilation of device and documentation errata, specification clarifications and changes. It is intended for hardware systems manufactures and software developers of applications, systems or tools.

Information types defined in Nomenclature are consolidated into the specification updates and are no longer published in other documents.

This document may also contain information that was not previously published.

1.1 Affected Documents

Document Title	Location
Intel® RealSense™ D400 Series Product Family Datasheet	https://www.intel.com/content/www/us/en/support/articles/000026827.html

1.2 Nomenclature

Errata are design defects or errors. These may cause behavior to deviate from published specifications. Hardware and software designed to be used with any given stepping must assume that all errata documented for that stepping are present on all devices.

Specification Changes are modifications to the current published specifications. These changes will be incorporated in any new release of the specifications.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in any new release of the specification.

Documentation Changes include typos, errors, or omissions from the current published specifications. These will be incorporated in any new release of the specification.

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2 Summary Table of Changes

The following tables indicate the errata, specification changes, specification clarifications, or documentation changes which apply to the Product Name product. Intel may fix some of the errata in a future stepping of the component and account for the other outstanding issues through documentation or specification changes as noted.

2.1 Codes Used in Summary Tables

Status

Doc:	Document change or update will be implemented
Plan Fix:	This erratum may be fixed in a future firm of the product
Fixed:	This erratum has been previously fixed
No Fix:	There are no plans to fix this erratum

Table 2-1. Errata Summary Table

Number	Status	Errata
DSO-6804	Plan Fix	D400 Series cameras intermittently enumerated as USB2 device on unplug/plug
DSO-7194	No Fix (Requires Microsoft* fix)	Windows driver [mskssrv.sys] may crash with D400 series cameras in stress test condition
DSO-7755	Plan Fix	Temporary stream hang observed on disabling Auto Exposure (AE) at 1280X720 resolution after any previous 90 FPS stream
DSO-7798	Fixed in Firmware 5.9.2	RGB at 60 FPS may not have the right exposure set when exposure is equal/less than -2
DSO-7849	Plan Fix	ROI based depth streaming immediately after change of IR projector power may result in a stream hang
DSO-7854	Plan Fix	Depth Stream hang when system resumes from Sleep (S3)
DSO-7976	Fixed in Firmware 5.9.2	D400 Series camera is not recognized after reboot on Linux
DSO-8007	No Fix	Firmware updates via DFU fails when firmware update limit is reached
DSO-8461	No Fix (Requires Chrome* fix)	D400 Series Windows UWP driver does not work with Chrome browser
DSO-8467	Plan Fix	Left Imager UYVY format displays green image
DSO-8565	No Fix	Infrared speckles on color image from D415 and D435 cameras
DSO-8665	Plan Fix	Camera "Frames did not arrive error" after improper camera shutdown

Summary Table of Changes

Table 2-2. Specification Changes

Number	Specification Changes
	None for this revision of this specification update.

Table 2-3. Specification Clarifications

No.	Specification Clarifications
	None for this revision of this specification update.

Table 2-4. Documentation Changes

No.	Documentation Changes
	None for this revision of this specification update.

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3 Errata

DSO-6804	D400 Series camera intermittently enumerated as USB2 device on unplug/plug
Problem:	D400 Series camera intermittently enumerates as a USB 2.0 high speed device when the camera is plugged to a USB 3.1 Gen1 port.
Implication:	The issue is seen on Windows* and Linux*
Workaround:	Plug in to Host (USB-A) after camera connection (Type-C) or alternately physical unplug-plug a camera with different insertion speeds. Issue more likely to occur on slow plug insertion into USB 3.1 Gen1 port
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7194	Windows driver [mskssrv.sys] may crash with D400 Series camera in stress testing
Problem:	Windows driver crashes in start- stop streaming iterations. It may take hundreds of start – stop streaming iterations for failure to occur.
Implication:	D400 Series camera fails to be recognized in Windows Device Manager
Workaround:	None. To be fixed in a future Microsoft* Windows 10* release
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7755	Temporary stream hang observed on disabling Auto Exposure (AE) at 1280X720 resolution after any previous 90 FPS stream.
Problem:	Play any 90 FPS depth or left or right imager stream -> stop -> play 1280x720 resolution -> disable Auto Exposure (AE) -> the stream gets stuck for few seconds.
Implication:	Depth or left and right Imager streams are stuck for a few seconds
Workaround:	None
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7798	RGB at 60 FPS may not have the right exposure set when exposure is equal/less than -2
Problem:	Manual exposure with value equal or less than -2 may not result in right exposure.
Implication:	Depth module D415 and Depth cameras D415 and D435 with RGB sensor are affected by this issue
Workaround:	None
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7849	ROI based depth streaming immediately after change of IR projector power may result in a stream hang
Problem:	Frames do not arrive after ROI (Region of Interest) is selected to start streaming immediately after a change is made to the IR projector power.
Implication:	No depth streaming
Workaround:	Stop and Start stream again will resolve issue.
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7854	Depth Stream hang when system resumes from Sleep (S3)
Problem:	System resume from S3 does not resume depth streaming and requires application restart.
Implication:	Currently seen on Windows* only.
Workaround:	None
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-7976	D400 series camera is not recognized after reboot on Linux
Problem:	Device does not appear in the device manager (Isusb)
Implication:	The frequency of the problem occurrence depends on specific Kernel version. It occurs more frequently on 4.4.0.x kernel versions and less frequently with 4.10.x kernel versions. Not seen on Windows*
Workaround:	physical unplug-plug a camera
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-8007	Firmware updates via DFU Service fails when firmware update limit is reached
Problem:	D400 series firmware update engine will allow a return to a previous version or baseline version of firmware up to 20 times unless a higher version of firmware. DFU service as part of Windows Driver package updates camera firmware when camera connected has a firmware version different than expected. The DFU service fails to function when firmware update limit of 20 is reached.
Implication:	When the firmware update limit is reached, firmware update fails even if higher firmware version. DFU service is in Windows driver package only.
Workaround:	Ensure firmware is updated to higher version before firmware update limit or avoid reaching firmware update limit
Status:	Refer the <i>Summary Tables of Changes</i>

Errata

DSO-8461	D400 Series Windows driver does not work with Chrome browser
Problem:	When Windows driver is installed on a Windows*10 system, chrome browser does not recognize D400 Series camera in chrome://settings/content/camera
Implication:	D400 series camera is recognized without Windows driver installed.
Workaround:	None
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-8467	Left Imager UYVY format displays green image
Problem:	Streaming color out of left imager in UYVY format displays a green image
Implication:	RealSense Viewer displays a green image when UYVY format is selected for left imager stream
Workaround:	Select alternate format
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-8565	Infrared speckles on color image from D415 and D435 cameras
Problem:	Infrared speckles are seen on color image from D415 and D435 cameras when laser power is at maximum or closer to maximum value
Implication:	Infrared speckles reduces with distance and ambient lighting
Workaround:	Lower laser power to a value that satisfies usage.
Status:	Refer the <i>Summary Tables of Changes</i>

DSO-8665	Camera "Frames did not arrive error" after improper camera shutdown
Problem:	If the camera is improperly shutdown while streaming like in power failure or computer reset, trying to re-start camera again after power up shows "Frames did not arrive error"
Implication:	Camera cannot be restored without a physical unplug-plug or a camera hardware reset
Workaround:	Camera hardware reset to restore camera after power up
Status:	Refer the <i>Summary Tables of Changes</i>

