



RealSense™ Product Family

D500 Series

Specification Update

Revision 004

January 2026

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Revision History

Revision Number	Description	Revision Date	Comment
001	Firmware 7.56.19918.835 Release	May 2025	First D555 FW
002	Firmware 7.56.19919.4144 Release	November 2025	Hot fix
003	Firmware 7.56.37199.1445 Early-Access Release	December 2025	This version is an Early-Access firmware version. It was not fully validated and it's provided as technical preview.
004	Firmware 7.56.37618.4188 Early-Access Release	January 2026	This version is an Early-Access firmware version. It was not fully validated and it's provided as technical preview.

1 Preface

This document lists the firmware versions supporting the RealSense™ Product family D500 Series.

1.1 Terminology

Errata are design defects or errors. These may cause behavior to deviate from published specifications.

Specification Changes are new or modified specifications introduced in published firmware versions.

2 Summary Table of Changes

The following tables indicate the errata and specification changes which apply to the RealSense Products may fix some of the errata in a future release 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




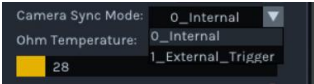
Open:	In engineering assessment
Fixed:	This erratum has been previously fixed
No Fix:	There are no plans to fix this erratum


Table 2-1. Errata Summary Table


Number	Status	Errata
	Open	USB is supported for debug and production line or HW Sync.
RSDEV-2744	Open	External HW Sync is supported on HW, SW support is missing. Refer to Appendix
RSDEV-3192	Fixed in SDK R57.1b	Calibration Data is missing from Viewer
RSDEV-3293	Fixed in SDK R57.3	RGB-Depth UV mapping impact by thermal loop
RSDEV-3188	Open	~0.5pixel UV movement to the right for both X and Y axis
RSDEV-4775	Fixed in 7.56.19919.4144	D555: cannot be detected after changing the link-timeout setting

Table 2-2. Specification Updates

Number	Specification Changes
7.56.37618.4188	<p>What's New</p> <p> Multi-Host/Devices Support Enhancements</p> <ul style="list-style-type: none"> • Improved Multi-Camera or Multi-Host Discovery: Fixed issues with discovering and enumerating multiple D555 devices or multiple HOST in LAN • Increased Concurrency Capacity: Expanded DDS participant limit to support more than 5 (up to 9) • Unique Device Identification: Each device now uses D555_<SerialNumber> as its node name for clear identification

	<div data-bbox="461 268 894 300">  TF Static & Camera Info Implementation </div> <ul style="list-style-type: none"> Static Transform Publisher (tf_static): Publishes calibrated extrinsic transformations between all sensor frames: <ul style="list-style-type: none"> Depth → Color (RGB) Depth → Motion (IMU) IR1 → Depth IR2 → IR1 (stereo baseline) Camera Info Topics: Full sensor_msgs/CameraInfo support for all image streams with: <ul style="list-style-type: none"> Intrinsic camera matrix (K) Distortion coefficients (D) Rectification matrix (R) Projection matrix (P) ROS2 REP-105 Compliance: Standardized frame_id naming (camera_depth_optical_frame, camera_color_optical_frame, etc.) <div data-bbox="461 772 1000 804">  Embedded Depth Post-Processing - Temporal Filter </div> <ul style="list-style-type: none"> Implemented temporal filtering for depth stream smoothing Configurable Parameters: Adjustable filter toggle and smooth alpha via ROS2 parameters <div data-bbox="461 968 737 999">  Multi-Camera DDS Sync </div> <ul style="list-style-type: none"> Enabled DDS Option on RS Viewer. User could select different Sync Mode through DDS Option. two options are supported as below: <div data-bbox="532 1159 844 1241">  </div> <p>0_Internal: Single camera with internal synchronization between RGB and Depth L/R sensors. 1_External_Trigger: Multi-camera synchronization with external master timing source(PWM Signal).</p> <hr/> <div data-bbox="461 1413 552 1438"> Bug Fixes </div> <div data-bbox="461 1453 688 1478"> DFU & System Stability </div> <ul style="list-style-type: none"> DFU Stability Improvements: Fixed firmware update reliability issues Device Reset Handling: Improved hw_reset service reliability with proper thread management <div data-bbox="461 1633 799 1659"> ROS2 Discovery & Communication </div> <ul style="list-style-type: none"> Daemon Discovery Fix: Fixed issue requiring manual ros2 daemon stop/start after device reconnection <ul style="list-style-type: none"> Device now sends PDP dispose message on disconnect Host immediately recognizes device departure and re-discovery
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Number	Specification Changes
	<ul style="list-style-type: none"> • Service Response Reliability: Fixed intermittent service call timeouts <p>Parameter Services</p> <ul style="list-style-type: none"> • Multi-Parameter Support: Increased get_parameters and set_parameters limit from 1 to 5 parameters per request • CDR Alignment Fix: Fixed 8-byte alignment issue causing incorrect parameter values • Buffer Overflow Protection: Added parameter name length validation (max 128 characters) <hr/> <p>Known Limitations</p> <ol style="list-style-type: none"> 1. Jumbo: NIC Jumbo for high resolution/fps. 2. Request Rate: Limit service calls to ~1-2 per second (SafeDDS ACK window constraint) 3. Parameter Batch Size: Maximum 5 parameters per get_parameters/set_parameters call 4. QoS Compatibility: Image streams use BEST_EFFORT reliability; subscribers must match this QoS 5. Temporal Filter: <ol style="list-style-type: none"> a. [Temporal Filter] Incorrect depth output when filter parameter Alpha = 0 b. [Temporal Filter] Invalid depth pixels are not zeroed at Persistence Index = 8 6. ROS2 Camera Info <ol style="list-style-type: none"> a. Using ROS2 stream camera_info may cause camera crash 7. When using multiple RealSense viewers and performing HW reset, camera is sometimes not detected in some of the viewers. <u>Workaround:</u> restart the viewer and the camera should be detected. 8. Sometimes after long streaming getting errors when trying FW Update over ETH. <u>Workaround:</u> use USB for FW update. 9. Sometimes after hundreds of stop/start stream cycles camera cannot be seen. <u>Workaround:</u> hard reset the camera
7.56.37199.1445	<div data-bbox="462 1312 891 1379">  New Features </div> <hr/> <p>Native ROS2 Interface</p> <p>The device now directly exposes standard ROS2 services and parameters, enabling seamless integration with ROS2 Humble</p> <ul style="list-style-type: none"> • Standard Parameter Interface: Support for rcl_interfaces (list, get, set, describe). • Device Management: <ul style="list-style-type: none"> ○ /<Device>_<Serial>/get_device_info: Retrieve hardware/firmware details. ○ /<Device>_<Serial>/hw_reset: Remote hardware reset capability.

Number	Specification Changes
	<p>Imaging & Processing</p> <ul style="list-style-type: none"> • RGB Compression: Enabled JPEG compression for RGB streams, significantly reducing bandwidth requirements for color data. • Embedded Depth Post-Processing: Implemented on-chip Decimation Filter to optimize depth Z16 data density. <ul style="list-style-type: none"> • In this release only 2x2 decimation is enabled which means decimating from 1280x720 to 640x360. User should enable decimation and set depth resolution to 640x360 (any other combination will throw an error). <p>System Capabilities</p> <ul style="list-style-type: none"> • Ethernet DFU: Firmware updates can now be performed directly over the Ethernet connection. • Advanced Controls: <ul style="list-style-type: none"> ○ Enabled Depth Advanced Control parameters via DDS, including <ul style="list-style-type: none"> ▪ Depth Estimation Parameters (DS thresholds, score limits, texture filters) ▪ RSM & Disparity Tuning (bypass, difference thresholds) ▪ RAU / SLO Color & Penalty Controls ▪ HDAD, Color Correction, AE Control, Depth Table ▪ Census Enable Reg & Disparity Modulation ○ Visual preset switching now auto-applies the associated Depth Advanced Control parameters. • Traffic Shaping: Optimized frame drop in some cases, Eg: 2 cameras concurrency into one switch <p> Improvements</p> <ul style="list-style-type: none"> • Startup Stability: Resolved a race condition causing startup failures when low Ethernet delays were configured. • Thermal Compensation: Fixed issues affecting the thermal compensation loop logic. • Calibration Data: Corrected handling and parsing of device calibration tables. • UI Reporting: Fixed an issue where the "Camera Locked" status was incorrectly reported in the Reviewer tool. • DHCP: Fix devices enumerate issue in some DHCP cases. • Boot Latency Improvement
7.56.19919.4144	<p>This version is a hot fix for the previous 7.56.19918.835 version that handle: "D555: cannot be detected after changing the link-timeout setting"</p> <p>Note: can only be updated from 7.56.19918.835 using USB mode</p>
7.56.19918.835	<p>First FW version supporting RealSense™ camera D555. Note, this FW is installed in the camera and cannot be downloaded.</p>

6 Errata

6.1 Open

RSDEV-3188	~0.5pixel UV movement to the right for both X and Y axis
Problem:	The calibration conventions in D555 differs from D4xx. In D4xx devices the origin of the pixel is the upper left corner, while in D555 it is the center of the pixel.
Implication:	Texture map misalignment by 0.5 pixel horizontally and vertically in registered depth and texture PointCloud scenarios
Workaround:	None. Users can use external tools/libraries for Texture Mapping
Status:	Refer the <i>Summary Tables of Changes</i>

6.2 Fixed

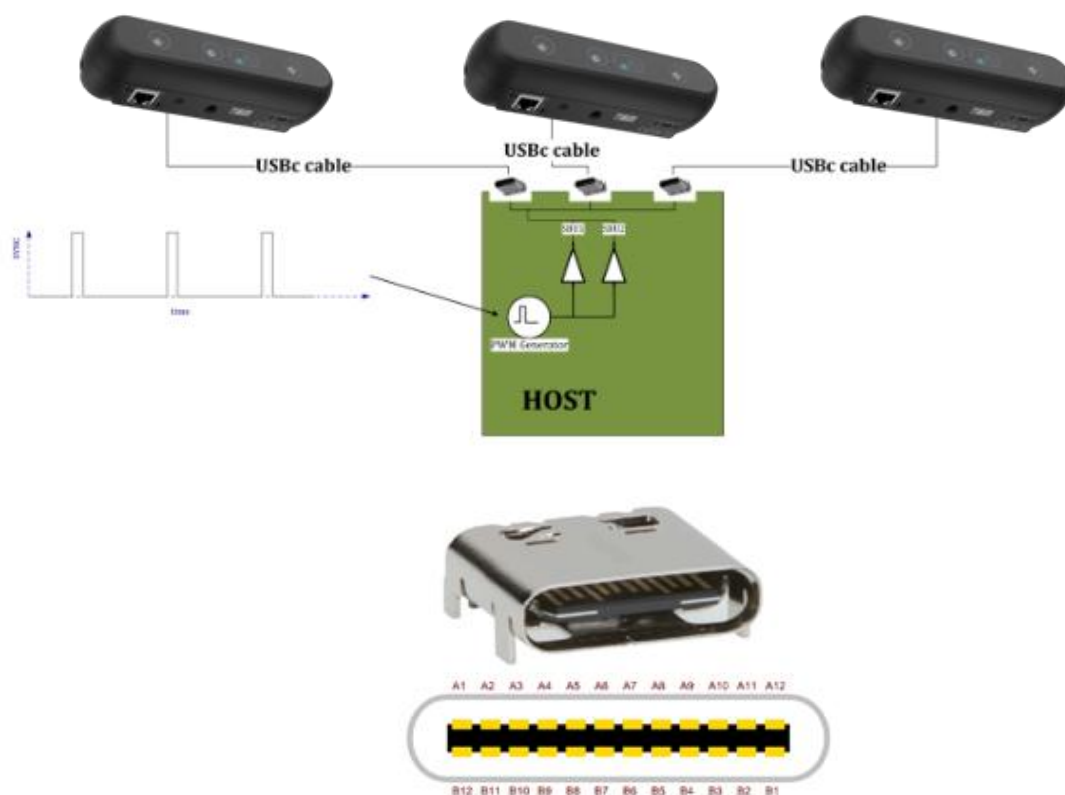
RSDEV-3293	RGB-Depth UV mapping impact by thermal loop
Problem:	RGB-Depth UV mapping pixel error is higher when Thermal Loop (TL) is enabled
Implication:	UV mapping between RGB and depth is less accurate
Workaround:	Disable TL, which affects the Z-accuracy at high ambient temperature
Status:	Refer the <i>Summary Tables of Changes</i>

RSDEV-3192	Calibration Data is missing from Viewer
Problem:	The Viewer is missing the display and restore calibration data for D555
Implication:	Cannot restore calibration data to default
Workaround:	Contact customer support if needed to enable via command line, or wait for the next release
Status:	Refer the <i>Summary Tables of Changes</i>

RSDEV-4775	D555: cannot be detected after changing the link-timeout setting
Problem:	D555: After modifying the link-timeout parameter, D555 camera cannot be detected anymore by the SDK/Viewer.
Implication:	D555 camera is not detected
Status:	Fixed

7 Appendix

7.1 External HW Sync



- Multiple cameras can be connected to one host and will be able to stream asynchronously independent data
- The cameras can be hardware synchronized (HW sync) so they capture at exactly the same time and rate
- The host will be the synchronization master, and the cameras will be working in slave mode
- An SDK API will be used to configure the cameras in slave mode
- The main difference between the D400 (Vision Processor V1 and V3) HW sync and D555:
 - D400 cameras HW sync use the 9pin aux connector—pins 5 (SYNC) and pins 9 (Ground)
 - D555 will use the USB type C connector 2 SB (sideband) pins, requiring connecting a USB type C connector on the host side as well
- Note: The RGB color sensor is synchronized with the depth sensors (left and right) when they stream at the same FPS