Intel® RealSense™ Tracking Camera T265 and Tracking Module T261

Specification Update

Revision 001

February 2021

Revison: 001

Contents

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Revision History

Revision Number	Description	Revision Date
001	Firmware 0.2.0.857	November 2019
	Firmware 0.2.0.879	December 2019
	Firmware 0.2.0.926	January 2020
	Firmware 0.2.0.951	May 2020

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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™ Tracking Camera Product Family Datasheet	https://dev.intelrealsense.com/docs/tracking-camera-t265-datasheet

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
Open:	In engineering assessment
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
	Fixed in Firmware 0.2.0.926	Map load hangs including map export hangs based on map sizes
TM2-4634 TM2-4237	No Fix	Pose data produces NaNs
	Fixed in Firmware 0.2.0.926	Replace libtm with direct communication with T265
TM2-4566	No Fix	Unity support under MacOS
	Fixed in Firmware 0.2.0.879	Map corruption after repeated export and import
TM2-4590	No Fix	Pose tracking drift
TM2-4434	No Fix	Re-localization issues
TM2-4233	No Fix	FW sometimes isn't loaded to T265 when connected via USB hub

Table 2-2. Specification Changes

Number	Specification Changes
	Firmware release 0.2.0.857 added minor improvements for re-localization.
	Firmware release 0.2.0.879 added support for double the map size including re-localization that was improved for areas up to 50 sq. m.

Number	Specification Changes
	Firmware release 0.2.0.951 added support for initial yaw to be consistent when starting forward, backward, up or down as well as fixed intermittent descriptor/IMU corruption
	Firmware release 0.2.0.926 added support for remove_static_node
TM2-4524	Android not supported

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*

3.1   Open

TM2-4634 TM2-4237	Pose data produces NaNs
Problem:	T265 can inadvertently drift due to certain sudden shift in direction change, bumps, and static position causing pose data to produce NaN (Not a Number).
Implication:	The failure is observed with T265
Workaround:	When pose data drifts to NaN, stopping and starting stream can bring the device into a state in which pose data can be received by the host platform.
Status:	Refer the *Summary Tables of Changes*

TM2-4590	Pose tracking drift
Problem:	Pose data can drift during movement and over time causing pose trajectory path to not be aligned with actual trajectory path.
Implication:	The failure is observed with T265
Workaround:	Using AprilTag markers can aid in providing a way in which pose trajectory with drift can align back to actual trajectory path.
Status:	Refer the *Summary Tables of Changes*

TM2-4434	Re-localization issues
Problem:	Re-localizing over a large room scale can produce large amounts of drift in pose data.
Implication:	The failure is observed with T265
Workaround:	Using AprilTag markers can aid in providing a way in which pose trajectory with drift can align back to actual trajectory path.
Status:	Refer the *Summary Tables of Changes*

TM2-4233	FW sometimes isn't loaded to T265 when connected via USB hub
Problem:	T265 will enter into USB enumeration protocol as soon as 5V has been provided on VBUS pin. USB protocol is handled by the Movidius MA215x device.
Implication:	The failure is observed with T265
Workaround:	Make sure USB hub or USB controller is connected and enumerated to host system prior to power being supplied to T265.
Status:	Refer the *Summary Tables of Changes*

TM2-4566	Unity support under MacOS
Problem:	Using the Unity wrapper with T265, pipeline error exception seen.
Implication:	The failure is observed with T265
Workaround:	None
Status:	Refer the *Summary Tables of Changes*

3.2   Fixed

	Map load hangs including map export hangs based on map sizes
Problem:	When loading a map, application can see system hang on loading map.
Implication:	The failure is observed with T265
Status:	Refer the *Summary Tables of Changes*

	Replace libtm with direct communication with T265
Problem:	Direct communication with T265 would allow for better interaction with T265 FW/HW.
Implication:	The failure is observed with T265
Status:	Refer the *Summary Tables of Changes*

	Map corruption after repeated export and import
Problem:	Issue seen when importing a map that was previously exported by the T265. Issues due to the map that was previously exported was corrupted.
Implication:	The failure is observed with T265
Status:	Refer the *Summary Tables of Changes*