



Release Notes v2.1.1

KINOVA® Gen3 lite robot
enabled by
KINOVA® KORTEX™

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Overview

This document provides release notes for the KINOVA® Gen3 lite robot enabled by KINOVA® KORTEX™. The document provides information about release version 2.1.1 and includes:

- System requirements
- Software / firmware components release versions
- Features introduced
- Bugs fixed in release
- Known issues, limitations, and workarounds

System requirements

KINOVA® KORTEX™ Web App

For this release, the *Web App* is supported on the following:

- Google Chrome version 64+:
 - Microsoft Windows 7/10
 - Ubuntu LTS 16.04
 - Android 8.1 and higher

KINOVA® KORTEX™ development computer platform

These are the hardware and OS requirements for a development computer:

- Microsoft: Windows 7/10 (32-bit or 64-bit)
- Linux: Ubuntu 16.04 (64-bit)

New features and bug fixes

V2.1.1 release

Release date

2019-12

Software / firmware components release versions

- KINOVA® KORTEX™ API: 2.1.0
- Base firmware: 2.1.1
- Actuators firmware: 2.1.1

Features introduced in release

- KINOVA® KORTEX™ *Web App* (robot configuration, control and monitoring)
- ROS v1 support, including Gazebo and MoveIt! support
- APIs: C++ and Python
- Control features
 - Protection zones
 - Singularity avoidance
- Servoing modes
 - High-level
 - Low-level
- High level control by:
 - Cartesian twist command
 - Joint speeds command
 - Trajectories - reach Cartesian pose, reach joint angles, pre-computed joint trajectory
- Low-level control by actuators position, angular velocity, current
- Sequences and Actions
- Event notifications
- Safeties management

Fixed in release

- GEN3-2154 - Issues Displaying Wifi-Network Information on *Web App*

Known issues, limitations, and workarounds

GEN3LITE-67 - Web App shows base communication only

After rebooting the robot or refreshing the Web App page, the Web App shows communication only on the base. The issue can be seen in the Configurations and Upgrade page of the Web App. Information about the actuators, interface module, and vision are missing.

Workaround:

Refresh the page. If this does not work, move the robot around and then reboot.

GEN3LITE-575 - Accessing `UserProfileHandle` in API Notifications

Currently, Notification Objects produced by the robot contain both an explicit `UserProfileHandle` field as well as a Connection Object field, which itself contains a `UserProfileHandle` field with the same data. The data can currently be accessed from either. Note however that in a future release, the first one will be deprecated to remove the redundancy.

Workaround:

To access the `UserProfileHandle`, exclusively use `connection.user_handle()`.

GEN3LITE-973 - Robot may stop if selected speed constraint speed value is too high

When the speed constraint for a Cartesian pose is too high, the robot stops before attaining the commanded pose.

Workaround:

Edit the corresponding action and reduce constraint speed value.

GEN3LITE-991 - Stop button does not stop gripper action play when 'Hold to Play' is disabled

On the Web App > Actions page, the stop button in the action playback controls may not work for a gripper action when the hold to play option is disabled.

GEN3LITE-1209 - Robot drops when doing Set Zero Offset on actuators

The robot may drop if Set Zero Offset is performed when the robot is in an unstable position.

Workaround: only use if robot in stable position.

GEN3LITE-1351 - Need to clear browser cache after robot upgrade

It may happen when doing an upgrade of the robot that the changes will not be visible in the Web App. This can be due to the browser cache displaying old information.

Workaround:

Refresh the browser cache by pressing CTRL-F5.

GEN3LITE-1352 - Need to restore factory settings after robot software update

Sometimes, after performing an update to the robot software, some configuration items will not appear correctly in the *Web App* > Configurations page due to differences in the database schema between the two versions.

It is recommended to always do a factory reset when downgrading versions.

Workaround:

Select Restore Factory Settings from the Configuration page.

NOTE: This will reset configured items such as protection zones, actions, and user profiles. To mitigate the effects of this, actions and protection zones can be exported and then re-imported.

GEN3LITE-1398 - After flash upgrade Web App will not display Web App and Kortex versions completely

The *Web App* and Kortex API versions are displayed in the *Web App* - Upgrade page. The page may show the wrong information after upgrading the robot.

Workaround:

Do a force refresh of the *Web App* (press CTRL-F5).

GEN3LITE-1558 - 'IPv4 address not in valid range' message sometimes appears while IP address and subnet mask are valid values

Web App may report error when changing both IPv4 address and subnet mask.

Workaround:

Change one of the two values at a time.

GEN3LITE-1741 - *Web App* > Actions page loop and hold to play settings not shared across sessions

The *Web App* > Actions 'Hold to Play' and 'Loop' parameter values are specific to each *Web App* instance. A second *Web App* instance won't show the same values from the first instance.

GEN3LITE-1783 - Joint error does not always display on the *Web App* > Safeties page

The *Web App* may not report that the robot is in a fault state because of a joint error.

Workaround:

Look at the status LED on the robot base. If it is red, the robot is in fault.

GEN3LITE-1844 - Pressing 'Set Axis Offset Zero' in *Web App* causes warnings and errors

Pressing the 'Set Axis Offset Zero' from the *Web App* may cause warnings and errors.

Workaround:

Clear all faults from Xbox gamepad or *Web App* and resume normal operations.

GEN3LITE-1932 - Protection zone limitations due to placement of monitored points

The robot currently detects entry of the robot into protection zones by checking for intersections of a set of discrete checkpoints on the robot with the protection zone volume. This behaves intuitively in most cases but can produce unexpected behavior for some protection zones with at least one thin dimension such that the robot can wrap around the zone or the zone can end up between two monitored points.

Workaround:

Read the User Guide Protection zone information in the robot controls section for more information about the monitored points and limitations of protection zones.

GEN3LITE-1944 - Playing second action while first is paused causes first action to resume

If you pause an action in progress, and then select a second action to play, the first (paused) action will resume playing rather than switching to play the second action.

Workaround:

If you are done with the first action and want to play the second, stop the first action instead of pausing it.

GEN3LITE-1957 - ROS MoveIt! - when joint goes over hard limit, it does not move anymore

MoveIt! cannot plan a trajectory when the robot is inside of its joint limits because the robot is not considered to be in a 'possible' position.

Workaround:

Use the virtual joystick of the web app to move away from the joint limits before doing a MoveIt trajectory.

GEN3LITE-2001 - Device routing packets are sometimes lost between base and actuators

When communicating with actuators via the Kortex API, a timeout error may be reported on rare occasions when packets are lost.

Workaround:

Ensure that the client code handles timeouts (e.g. putting in a place a retry on timeout).

GEN3LITE-2047 - Moving in Cartesian after getting into certain angular configuration

When in angular mode, protection zones are not taken into account. If you move the robot in angular mode into a protection zone and then switch to Cartesian and try to move, you will be stuck because protection zones are applied when in Cartesian mode.

Workaround

To get out of the protection zone when in Cartesian, you have to temporarily deactivate the relevant protection zone(s), go into a position that doesn't conflict with any protection zones and reactivate the protection zone(s) that you deactivated earlier.

GEN3LITE-2472 - Arm hesitates in its movement even when the arm is not passing through the protection zone

Modifying protection zones while the arm is moving will cause the arm to stop. Protection zones cannot be modified while the arm is in an active mode, only while in idle mode.

GEN3LITE-2473 - Changing parameters of the active protection zone can cause joint fault errors

Modifying protection zone parameters while arm is moving may cause joint fault errors.

Workaround:

Do not modify Protection zones parameters while the arm is moving.

GEN3LITE-2585 - Gripper does not initialize when Xbox trigger is held down at bootup

Occasionally, if the gripper is held down during the boot process it may not function.

GEN3LITE-2846 - While continuously running sequence, robot can disconnect from Web App with notification 'Reason: Manual Stop'

Web App may report loss of connection with robot when browser tab in which the the Web App is displayed no longer has focus.

Workaround:

Ensure that Web App has focus and is not minimized.

GEN3LITE-2596 - Robot movement when close to joint angle soft limits

There are soft limits on joint angles for all actuators in the robot. The robot can stop moving when joint angles are close to their soft limits. For some of the actuators (1, 4, and 6) it can be hard to tell visually that the joint angles are close to the limits.

Workaround

Familiarize yourself with the robot joint limits in the User Guide Robot Controls section.

GEN3LITE-3195 - Robot decelerates slowly after movement command stops

When a movement command is stopped / interrupted by the user, the robot decelerates very slowly, often ending up significantly far from its position at the moment the movement command ceased.

Workaround

Use either physical E-stop (if one is installed) or Xbox gamepad E-stop control if you need to stop the robot quickly to avoid a collision.

GEN3LITE-3460 - When a duplicate user profile is created, the password is set to an empty string

In the *Web App*, on duplication of a user, the password will not be copied. The new duplicate profile is created with the password an empty string.

GEN3LITE-8633 - Robot reboot using *Web App* not working

Rebooting the robot using the *Web App* (Configurations page > Base) may not work (intermittent).

Workaround:

If this occurs, reboot the robot using the power button on the robot base controller.

Support

If you have any issues, questions or comments, please don't hesitate to contact us.

Access all technical and product resources on the Kinova website product support.

Contact your Field Applications Engineer if you have questions:

kinovarobotics.com/support

There is no need too small.
No task too great.

kinovarobotics.com

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