

---

# Motion Perfect 5.2 Release Notes

---

## Version: 5.2.2 (25762) - 17-Jun-2022

*Changes to revision 25227*

### **Components**

- Simulator v2.0315
- HMI client v1.33.2.2233
- HMI client v2.1.2.1926

### **General**

- Added web based licensing for Uniplay devices
- Fixed IEC 'Edit as text' not working (#4456)
- Fixes for 3D visualization of robot model "From controller"
- Added option to "Export Package Contents" when creating a new package or when sharing an existing package from the package manager (#4396)
- Added option to generate a .PRJ file for package to allow loading by LOAD\_PROJECT command (#4396)
- Fixed Basic Setup page scrolling not enabled for DX4 and Thermocouples
- Fixed problem with 'Start Executing from here' command in TrioBASIC debugging (#4414)
- Fixed problems with Axis Parameter window closing when using firmware 2.0268 or older (#4417)
- Improved auto completion (#4424)
- Fixed intellisense for RPS commands (#4412)
- Fixed file filter for selection of DX4 firmware
- Fixed problem when reading DX4 firmware version when network is not operational
- Fixed incorrect split of long TrioBASIC code line

## Version: 5.2.1 (25227) - 14-Mar-2022

### **Components**

- Simulator v2.0313
- HMI client v1.33.1.2229
- HMI client v2.1.1.1835

### **Trio SCARA**

- Added tool bar button for ROBOT\_DEFINITIONS
- Added Trio SCARA as new robot types (RX3-400-SR, RX6-500-SR, RX6-600-SR, RX6-700-SR)
- Changed terminology for robotic screens to use 'joint' rather than 'axis'
- Enumeration of robot joints starts from 1
- Improved axis selection for robot definition
- Added axis naming for robot joints

- Added quick entry of calibration data
- Include default robot definition data for all Trio SCARA robots to minimise setup time
- Added drive default parameter set for DX4 and Trio SCARA robots
- Added Trio SCARA 3D models
- Launch 3D visualisation based on robot definition with automatic binding of joints to model
- Usability improvements to Robot Jog window (#4229)

## ***EtherCAT Diagnostics***

- Improved diagnostics for EtherCAT networks
- Enable and Disable enhanced diagnostics from Intelligent Drives tool
- Added Diagnostics device configuration page to show network status registers
- Added topology based network visualisation
- Graphical indication of device status

## ***Intelligent Drives***

- Improved EtherCAT diagnostics (#4217)
- Improved ESI file parsing for third party devices to ensure DC mode is correct (#4259)
- Allow firmware upgrade wizard to upgrade multiple Trio DX4 drives (#3259 / #4271)
- Fixed FFT icon in dark mode on Trio DX4 and DX5 scope screen (#4155)
- Improved Trio DX4 and DX5 parameter viewer update rate (#4251)
- Added filter for Trio DX4 frame size on firmware selection (#4263)
- Added drive reset icon on device configuration Motor page for Trio DX4 and DX5 (#4264)
- Allow export and import of Trio DX4 and DX5 drive scope data (#4207)
- Added PSU version for Trio DX5 (#4304)
- Fixed temperature values in Monitoring tab for Trio RTD devices (#4231)

## ***IEC Editor***

- Pressing F10 key when debugging ST program runs to the end of the of the program (#3756)
- Improved ladder usability in free form ladder (FFLD) add execution flow (#3903)
- Improved new variable definition editor in ST (#4033)
- Improved operation of online change (#4138)
- Improved usability for user defined data types (#4151)
- Added intellisense after FOR statement in ST (#4356)
- Improved variable name checking to prevent the use of reserved words as variable names (#4365)
- Improved renaming of variables to apply to complex data types (#4117)
- Added shortcut keys for IEC editor (#3612)
- Allow ability to peek inside an instance of a function block (#4157)
- Aesthetic improvements to free form ladder (FFLD) editor (#4239)
- Libraries can be used by all tasks in the project (#4150)
- Allow all tasks to be set to DEBUG or RELEASE from a single menu item (#4242)

- Cancelling the edit of the array dimension of an IEC variable can cause an exception (#4319)

## ***TrioBASIC Editor***

- Added colour indicator of search result in scroll bar (#2931)
- Fixed crash when text from the editor is 'cut' and then followed by an 'undo' operation (#4236)
- Fixed cursor position after a conditional statement is pasted into an existing program (#4290 / #4334)
- Improved 'paste' operation time for multiple lines (#3120)
- Fixed parsing of variables declarations which are split over multiple lines (#4116)
- Fixed indentation of nested conditional statements (#4175)
- Fixed 'Auto format text' creating code that does not compile (#4220)
- Add INCLUDE to TrioBASIC program via drag & drop from Controller Tree (#4257)
- Fixed problem with delayed program synchronisation causing run-time errors (#4273)
- Fixed indentation of CASE statement (#4330)
- Added support for 'STATIC' keyword (#4344)
- Fixed folding of cascading loops (#4385)
- Fixed DEFCONST of expressions with parenthesis can fail to compile (#4233)
- Fixed hover-over value of TICKS (#4370)

## ***Uniplay HMI***

- Improved handling of asynchronous messages from user programs in the controller (#3026)
- Added 'OK' button to binding editor (#4084)
- Corrected height of binding dialog (#4164)
- Improved tool tip to include the control name in HMI designer (#4181)
- Fixed crash in HMI designer when an invalid action is assigned to a click event (#4194)
- Undo/redo does not set page modified flag in some cases (#4311)
- Delete button not working for images in an HMI design (#4258)
- Allow encryption of HMI content without the need for per device licences (#4291)
- Add DATE and TIME global variable (#3997)
- Improved speed of Uniplay v2 binding to which improves performance of UI (#4192)
- Fixed problems with comparison failing in some cases (#4248)
- Add support for EXIT\_LOOP in HMI (#4307)
- Add local functions for getting time and date in Uniplay (#4308)
- Add local function for displaying options in Uniplay (#4322)
- Allow for bi-directional binding of some expressions (#4323)
- Add ScrollThickness property to TVBEditor (#4337)
- Added support for DV\_IN(channel) and DV\_STATUSWORD(channel) (#4044)
- Added more option for text alignment (#4212)
- Fixed floating point value entry on HMI keypad for non English keywords (#4324)
- Add global properties for platform ID (PLATFORM\_ID) and Uniplay software version (UNIPLAY\_VER) (#4246)

- Fixed button images on IP address change pop-up keypad (#4286)
- Fixed Copy & Paste for images in Uniplay design (#4295)

## ***Other enhancements and bug-fixes***

- Controller Tree
  - Delete will remove all highlighted items (#4342)
  - Improved wording of available axes for clarity (#4249)
  - Fixed problem where renaming a program does not change its position in the 'Programs' list (#4368)
  - Improved multi-select operation in the Controller Tree (#4305)
  - Improved creation and management of groups in Controller Tree (#3187)
  - Corrected sequence of HMI Library and HMI Design in 'new program' window (#4163)
- General
  - Fixed problems closing Motion Perfect (#3870)
  - Validate checksum of Motion Perfect updates before allowing an install (#4131)
  - Improved robustness of ROBOT\_DEFINITIONS editor when there are un-sync'd changes (#4182)
  - Added drag & drop for items in controller tree to allow creation of groups (#4196)
  - Improved reliability when switching from Sync mode to Tool mode (#4317)
  - Fixed axes range in some tools when using the MC400 Simulator (#4348)
  - Added popup dialog to inform users of update - 'New Release available to download' (#3860)
  - Allow user to expand the column of the I/O Tool to display all info including the P3xx part info is applicable (#2955)
  - Improvements in 'Feature Configuration' error handling (#4341)
  - Disable .NET 4.x installation if Win 10 is detected (#4321)
  - Improved repeated operation of Find & Replace in project (#4283)
  - Disable recent projects list in tool mode (#4333)
  - Improved usability of user defined packages (#3941)
  - "Close all" should close the "Release Notes" window (#4127)
  - Improved consistency and operation of F1 and help system (#4102/#4253)
  - Usability improvements to improve selection of axes and parameter list (#3694)
  - Improved performance of tabulated data UI windows (#3579 / #4103 / #4172)
- 3D Visualization Tool
  - Fixed for Motion Perfect lock up when 3D Visualization is used on a remote desktop (#4097)
  - Improved resource usage for 3D Visualization (#4210)
  - Improve OBJ import to display 3D model if external texture files are missing (#4245)
  - Improve OBJ import to support objects with multiple materials (#4244)
  - Improved refresh of 3D model (#4306)
- Load & Save Project
  - Fixed lockup in 'Open project' window is resized during project load (#3912)
  - Fixed 'Create from Controller' when controller has encrypted programs or packages in the project (#4279)
  - Fixed 'Save As' to allow saving project to Desktop (#4285)

- Project Synchronization
  - Improved performance by optimizing generation of program list (#3700)
  - Upgrading a project to newer version of Motion Perfect forces a save to ensure update (#4135)
  - Preserve the groups when creating project from controller (#4261)
  - Improved error reporting of new project creation (#4314)
- Table Viewer / VR Viewer / Variable Watch
  - Optimised TABLE viewer to prevent un-necessary access to the controller (#4329)
  - Allow access to bit level data (#3052)
  - Do not automatically move the focus to the cell below after data entry (#4327)
  - Fixed problems watching IEC variables (#4331)
  - Fixed watch window operation with IEC ST array variables (#4339)

---

## Motion Perfect 5.1 Release Notes

---

### Version: 5.1.1 (23462) - 05-Jul-2021

#### *Uniplay HMI*

- Added support for Uniplay 7-A and Uniplay 10-A, both running v2 of Uniplay
- Added options to run different resolution designs either run centred, auto resize or enlarge canvas
- Simulator now runs v2 of Uniplay software
- Implemented grid control to allow resolution independant HMI designs
- Speeded up load of HMI designer
- Added support in HMI designer for SELECT\_CASE...END\_CASE construct (#2968)
- Added support in HMI designer for FOR...NEXT construct (#3308)
- Limited font set available to HMI designs based on client compatibility
- Fixed single line IF...THEN (#4049)
- Improved support for dead battery condition of P842 and P843 devices (#3796)
- Added Print item to HMI designer (#3585)
- Unload HMI editor from memory after closing (#4001)
- Added 'Select All' in HMI editor (#4045)
- Fixed problem importing pictures from old design (#4092)
- Improve HMI grid layout editor (#4098)
- More intuitive HMI grid layout editor (#4115)

#### *Flexslice*

- Added support for Thermocouple slice (P367) and RTD slice (P368)
  - Basic Setup device configuration page
  - Auto generation of STARTUP code for device initialisation
  - Monitor device configuration page, showing status and error messages
- Added functionality to re-program Flexslice firmware and FPGA (#2896)
- Updated images for new Flexslices (#3746)

## ***Trio Drive Support***

- Trio DX5
  - Support for Trio DX5 system drive in all drive commissioning screens
  - Common user experience with Trio DX4 drives
  - Extensions for multi-axis device
  - Added 'identify' feature for visual identification of drive
  - Intelligent drive network visualisation includes system drive with PSU and axis modules
  - CoE object page includes 68xx objects for multi-axis device
- Added implementation of FFT on drive scope traces
- Improved CoE scheduling to improve user experience for large axis count systems
- Enable DX4 second encoder to be mapped in the network config dialog (#3817)
- Added encoder scaling to Basic Setup (#3791)
- Added speed feedforward slider on tuning page for one-parameter and manual tuning
- Show individual digital inputs and digital outputs in monitor page
- Added Motor Data page showing summary of motor parameters for detected motor (#3853)
- Move panel test moves profiled by Trio controller
- Added ability to download most recent data capture from drive
- Improved parameter export by selecting only changed items by default (#4005)
- Corrected de-limiter used in drive scope .CSV file (#3816)
- Display encoder axis with different image (#3833)

## ***IEC Editor***

- Updated IEC editor components
- Allow editing of initial values of complex library data types (#3741)
- Added support for the new commands InsertCoilAfter, InsertCoilBefore and InsertCoilParallel
- Added option for EN/ENO in function block definition (#3728)
- Fixed compiling LD program with argument exception inhibits compiler messages (#3789)
- Fixed import program, imported program must be added as a sub-program (#3793)
- Fixed user defined function block (UDFB) data type identification (#3945)
- Fixed error when comment is inserted between arguments in ST editor (#3956)
- Fixed ladder program does not recognise variables in the Defines file (#3821)
- Fixed pressing F10 key when debugging ST program runs to the end of the of the program. (#3756)
- Improved handling of duplicate names when dragging programs from IECLIB to IEC (#3856)
- Fixed instance where IEC compilation fails but no errors are reported (#1768)
- Improved new variable creation, now automatically detects the expected data type from the function block (#3842)
- Show all inputs and outputs for a function block in ST program (#3904)
- Allow elements of PLCopen library to be given an initial value (#3899)
- Add highlighting of errors and warnings in ST editor (#3905)

- Fixed IEC array elements in Variable Watch (#3930)
- Improved undefined variable detection in ST Editor (#3955)
- Fixed incorrect evaluation of expression in a comment (#3961)
- Fixed breakpoints on empty lines (#3962)
- Improvement to LD editor allowing addition of parallel rungs (#3987)
- Fixed issue copying and pasting function blocks (#3959)
- Sub-program and User Defined Function Block can be compiled independently (#4137)

## ***Other enhancements and bug-fixes***

- 3D Visualisation Tool
  - Improved STL binary format detection (#3159)
  - Improved UI for import of 3D Visualization(#3437)
  - Further improvements for UI of import of 3D Visualization (#3438)
  - Fixed XYZ frame on SCARA visualisation (#3572)
  - Allow Oscilloscope & 3D Visualisation to run together (#3646)
  - Improvements to handling of MTL files (#3889)
- BASIC Editor
  - Various improvements to intellisense
  - Foreign keyboard assist for translation of characters (#265)
  - Added ability to use TABLE data in TrioBASIC program (#451)
  - Added missing intellisense data for MOVEJ, MOVEL, MOVEC (#2617)
  - Disable editing in BASIC editor while background operation dialog is displayed (#3250)
  - FOR..NEXT indenting misalignment when combined with split statement in IF...THEN (#3883)
  - Fixed folding of subroutines (#4021)
  - Fixed line split when negative hex numbers are move to a new line (#4059)
  - Do not allow editing of Trio BASIC library file while a program is running (#3813)
  - Improvements to BASIC program compilation (#3770)
- RTEX
  - Added new image for Panasonic RTEX 2 axis drive (#3754)
  - Fixed crash when two RTEX drive tools opened at the same time (#3828)
  - Fixed intelligent drives screen for RTEX drives (#4024)
- EC\_EXTEND Editor
  - Add toolbox on the PDO mapping pages to allow drag and drop UI (#3854)
  - Fixed import of various third party ESI files
  - Improved loading of ESI registry, sort devices by name then revision
  - Add Tx/Rx checks to improve validation (#4065)
  - Add SDO init and PDO objects match to improve validation (#4068)
  - Added ability to change PDO offset for 2nd drive from default of 0x01 (#3765)
- General
  - Added dark theme, accessible from Tools...Options...General...Skin
  - Various improvements to connect and re-connect (#3167)
  - Allow items in controller tree to be rename via F2 and remove via Delete (#3779)

- Added tags in 'New Program' dialog to allow easy filtering (#3788)
- Improvements to context sensitive help (#4071)
- Use full firmware version number in version number check (#3425)
- Improvements to Find and Replace (#3457)
- Added robot motion keywords to TrioBASIC help file (#3638)
- Improvements to Variable Watch update process (#3751)
- Add controller tree view drag and drop operations for IEC items (#3780)
- Improvements in swapping between Sync Mode, Tool Mode and Direct Mode (#3800)
- Improvements to reconnection after warm reset (#4091)
- Improvements to project load time (#3884)
- Incorrect line number used in "Highlight current execution line" (#3935)
- Prevent addition of second CAM library. (#3837)
- Allow different number formats in VR and TABLE viewer (#3849)
- Improvements to usability of EC\_EXTEND creation tool (#3854)
- Show functions those included in Trio BASIC Library or Package (#3988)
- Fixed discrepancy in AxisType displays (#4027)
- Improved support for Panasonic A6 Multiaxis Drive (#3766)
- Fixed Modbus TCP/IP data location settings UI (#3757)
- Improved handling of duplicate names when dragging programs from IECLIB to IEC (#3856)
- Improved consistency in FPGA version number reporting (#3920)
- Added P752 (Robotics) to Enable Features window (#3763)
- Display progress dialog during 'find' in large projects (#3540)
- Encrypted HMI design does not respect startup page (#3937)
- Inhibit FPGA update warning on controllers with RAM based FPGA images (#3943)
- Fixed jitter UI when using scaled screen resolution (#3792)
- Improved project backup and allow for progress dialog and cancellation (#2798)
- Improvements to P375 axis type selection (#3373)
- Fixed negative parameter values in MC\_CONFIG (#4026)
- Detect protected TABLE ranges in table viewer and display as protected (#3835)
- Added binary view in Variable Watch (#3052)
- Display axis parameter enumerations in Variable Watch (#3640)
- Inhibit editing of read only items in Variable Watch (#3641)
- Fixed use of down arrow in intellisense window in Variable Watch (#3936)
- Improved efficiency of 'find' for variable names (#3897)
- Added insert/overwrite mode toggle to terminal window
- Added support for -1 as DRIVE\_PROFILE and NODE\_PROFILE (#3878)

---

## Motion Perfect 5.0 Release Notes

---

**Version: 5.0.1 (21120) - 17-Aug-2020**

***DX4 Drive Support***



- Network Configuration
  - Display and edit EtherCAT profile
  - Check-box selection of PDO data
- Basic Setup
  - Simple setup of commonly used parameters
- Tuning
  - Select tuning mode (Tuning-less, One Parameter, Manual)
  - Measure Inertia
  - Tuning screen for selected mode
  - Graphical representation of control law
- Scope
  - Dedicated scope screen for real-time data capture on drive
  - Up to 8 channels
  - Configurable auto-trigger conditions
  - Vertical and horizontal cursors for each trace line
  - Zoom, Pan
  - Load from file, Save to file, Save to clipboard
- Alarms
  - Active alarm, with trouble shooting tips
  - Alarm history
- Monitor
  - Real time access to drive status
- Test Moves
  - Perform continuous motion test move (jog)
  - Perform point-to-point test move (program jog)
- Parameters
  - Tabulated view of all drive parameters allowing read and write access to all drive functions
  - Import full or partial parameter set from file
  - Export full or partial parameter set to file or STARTUP program

## ***Third Party EtherCAT devices***

- Added capability to import a ESI file for an unknown EtherCAT device and create EC\_EXTEND file
- Improvements to EC\_EXTEND editor

## ***Controller Tree***

- EtherCAT node in controller tree

## ***Flex Slice system***

- Added capability to update firmware on selected FlexSlice modules

## ***IEC Editor***

- Updated IEC editor component

## ***PLCopen***

- Updated PLCopen libraries

## ***Icons***

- New icons
- Flater User Interface

## ***Other enhancements and bug-fixes***

- General
  - Updated to .NET v4.6.2(#3578)
  - Fixed 'Print Selection'(#3571)
  - Fixed 'print in colour' to allow greyscale printing(#3588)
  - Fixed problems with print preview dialog(#3589)
  - Display 'fetching' when performing a full update of axis parameters(#3634)
  - Added group and package infor to PROJECT\_DATA(#3025)
  - Optimized writing of table data(#3416)
  - Added snippets in HMI designer(#3547)
- Find and Replace
  - Improvements to find and replace in project(#3519)
  - Allow text search in all text windows (e.g. terminal windows)(#3207)
  - Added 'Search up' check box in Find and Replace(#3441)
  - Fixed empty 'Look in' selection drop down in Find and Replace(#3470)
  - Fixed initial size of auto-resizing dialog when floating(#3471)
  - Fixed find and replace in IEC editors(#3580)
- Controller Tree
  - Fixed 'F5' to run program from controller tree(#3461)
  - Show EtherCAT network state in controller tree(#3433)
  - Show TPS package as a node in the controller tree(#2924)
- Intelligent Drives
  - Fixed Velocity and Torque stuck on zero in Motor device configuration page(#3529)
  - Data type in CoE objects is populated from ESI import (#3366)
  - Extended 'movement' panel in Motor device configuration page(#3576)
  - Show drive model and manufacturer in Intelligent Drives(#635)
  - Change UI representation of control word and status word to use indicator lamps(#3487)
- MC\_CONFIG Editor
  - Fixed incorrect removal of duplicate lines in MC\_CONFIG when commented(#3451)
  - Fixed incorrect re-ordering of MC\_CONFIG when commenting lines(#3452)
- EC\_EXTEND Editor
  - Improvements to validation(#3398)
  - Fixed problems with adding new vendor(#3444)

- Removed copy button for sub-entries(#3453)
  - Prefix all hex numbers with '0x'(#3468)
  - Improvements to guided mode(#3614)
- BASIC Program Editor
  - Improved editor snippets for DIM statement(#3549)
  - Added ability to start capture from a program(#2499)
  - Fixed instance of compile error preventing program edit(#3478)
- IEC 61131-3 Programming
  - Improved handling of pre-defined variables in FB editor(#3508)
  - Added PLCopen help file to Motion Perfect installer(#3366)
  - Improved detection and declaration of new variables in ST(#3502)
  - Added documentation of IEC call stack into Motion Perfect help(#1725)
  - Fixed crash in ST editor when code(#3522)
  - Fixed problems with bookmark navigation(#3548)
  - Added Print functionality in ST editor(#3591)
  - Fixed auto-complete of if/end\_if in ST editor(#3606)
  - Fixed 'show value' intermittent behaviour in ST editor(#3607)
  - Fixed syntax highlighting of sinL and cosL functions in ST editor(#3609)
  - Fixed detection of variables when using expressions in ST editor(#3632)
  - Improved single step debug(#3325)