

TSMaster Release Note

Features

1.1 2024-01-25

- [1] Improved: Graphics grid now follows axis markers

1.2 2024-01-24

- [1] New: Graphics signal now supports arbitrary expressions
- [2] New: create_form API added for UI automation

1.3 2024-01-23

- [1] Bug fix: CAN Trace distinguish same identifier with standard and extended

1.4 2024-01-22

- [1] New APIs for form operation: show, hide, toggle MDI, set positions
- [2] New Toolbox: GW2112 for TOSUN gateway devices
- [3] New: Drag drop supported for system variables config file

1.5 2024-01-19

- [1] Refactored: Graphics now accurately displays sporadic abnormal signal points within a vast number of signal points
- [2] New: Panel API supports clear any panel control contents

1.6 2024-01-17

- [1] New: Panel TPnI files can be directly dragged into TSMaster Interface
- [2] Improved: NOK results in NOP now generates error info in Graphic Program

1.7 2024-01-12

- [1] Improved: Window flickers when switch between MDI and Normal State
- [2] Improved: cyclic message added by API become more precise

1.8 2024-01-11

- [1] New: Ethernet blf asc converter APIs available

1.9 2024-01-08

- [1] Bug fix: main form position changed on monitors with different DPIs

1.10 2024-01-06

- [1] New: UDP fragment processor API added
- [2] New: VLAN APIs added: append, insert, remove
- [3] New: E2E supports classic CAN frames
- [4] New: Bus Replay Post processing now supports LIN, FlexRay and Ethernet
- [5] New: Generic Plugin now supports multi-language

1.11 2023-12-27

- [1] New: Generic Cpp demo plugin added to extend TSMaster Capabilities in C++

1.12 2023-12-22

- [1] New: Cpp demo plugin added to extend TSMaster Capabilities in C++

1.13 2023-12-19

- [1] New: your python toolbox source code can be compiled to pyd for software protection

1.14 2023-12-18

- [1] New: Mini program library exporting support added in toolbox for auto installation when being imported by another TSMaster

- [2] New: Option for Auto updating FlexRay frame in RBS

1.15 2023-12-16

- [1] New: FlexRay E2E CRC and RC supported in RBS

1.16 2023-12-15

- [1] New: Add new Device TP1026

- [2] New: storing and reading calibration values through Excel

- [3] Bug fix: When calibrating sub elements of the same Map/Curve Var, the number of operations should not be limited

1.17 2023-12-14

- [1] New: Standalone Python IDE for General Application Development

- [2] New: Style can be selected in Toolbox UI designer

1.18 2023-12-12

- [1] Minor Bug fixes

1.19 2023-12-10

- [1] New: mat file converter in logging and replay window
- [2] New APIs for log file converting: blf, asc, csv, mat
- [3] Log Converter refactor
- [4] Minor bug fixes
- [5] Max supported channel count set to 64
- [6] New API: get form unique id for caption search
- [7] New API: set debug log level in mp and dll
- [8] New Python API: `app.ui_get_component`, everything in TSMaster can be manipulated !
- [9] New Python APIs for mini program library operation
- [10] New: Custom Help file can be specified w/wo language support in Panel and Toolbox
- [11] New python API: `call_system_api` and `call_library_api`
- [12] Improved: Filtering in CAN RBS and FlexRay RBS speed up 100x+
- [13] Improved: Toolbox High DPI Aware
- [14] New: Dynamic language supported in toolbox
- [15] Improved: Graphic Program can import and export unlimited nested subroutines
- [16] Improved: Multi-thread supported in Toolbox

1.20 2023-11-25

- [1] New: Multi-language supported in Panel
- [2] Improved: Panel Basics Demo now supports multi-language
- [3] New API: `app.get_language_string` for generic language translation in all your programs
- [4] New: Toolbox UI now supports multi-language
- [5] New: Toolbox treeview now supports more events and methods

- [6] New: Built-in Blf to CSV converter introduced with filter configuration dialog
- [7] New: 2 APIs added for auto CSV file conversion
- [8] New API: `set_flexray_ub_bit_auto_handle`
- [9] New APIs: signal tester get status and set dynamic time and value range
- [10] New: Graphics can now monitor signal's cycle time
- [11] New: online replay now supports code generation
- [12] New: Python Pillow Package example added in toolbox
- [13] New: CAN FD E2E Checksum and Rolling Counter auto detect and handler supported
- [14] New: Python package updated for matrix calculation performance
- [15] New API: `app.start_log_w_filename`
- [16] New: TSMaster toolbox can import and export bundle
- [17] New: Calibration variables can be logged into blf and replayed from blf
- [18] New: Set the A2L database for calibrating ECU by system variables
- [19] New: Splitting an array data(`VAL_BLK`) into multiple individual variables
- [20] Bug fixes for multiple components

1.21 2023-10-27

- [1] New: Configurations in backup folder can be recovered
- [2] New: Graphic program can now export to Excel
- [3] New Toolbox Control: Check List Box
- [4] New: Toolbox Paint Box control can save PNG file to disk
- [5] New API: `test.set_classic_test_system_report_name`
- [6] New API: run procedure in main UI thread
- [7] Improved: Signal tester automation and result retrieve
- [8] New: License Protection supported in Encrypt Publish and App Publish
- [9] New: Globally unique Hardware ID can be retrieved
- [10] New: Current project license status information window
- [11] Improved: Project startup information updated with license information

[12] New: Project License Manager

[13] New Demo: Popup menu usage in Python toolbox

[14] New: Standalone toolbox application can be deployed independent of TSMaster

[15] New: Standalone toolbox application can be executed independent of TSMaster

[16] New API: show help file and navigate to specified chapter

1.22 2023-10-10

[1] New API: Graphics signals can be dynamically added by scripts

[2] Bug fix: Classic Test System string type parameters

[3] Bug fix: Meter control display and popup menu

[4] Improved: Mini program documents

[5] Bug fix: Logging of ethernet frame

[6] New: C code Editor now switches to single cpp file solution, externally editing your mini program code is possible

[7] New API: auto deploy graphic program from excel

[8] Update: Optimize file loading solution to short the loading time.

[9] New: DAQ Timestamp for XCP

[10] New: custom function documentation can be freely edited in C code editor

[11] Improved: Manually add new functions is supported in external C code editor source file

[12] New: Your mini program library can now generate documents automatically for your customers

[13] Bug fix: event properties in mini program lost

1.23 2023-09-22

[1] New: Intelligent C Code Completion feature supported

- [2] New: Intelligent C Code Params feature supported
- [3] New APIs for Python for path operation in environment
- [4] New toolbox component: TreeView
- [5] New: toolbox form can be placed anywhere on TSMaster ribbon
- [6] New: Symbol Value Window
- [7] New: modify signal value from Graphics
- [8] New: FlexRay Arxml database supported
- [9] Improved: Meter toolbox refactor
- [10] Improved: A2L Parser refactor

1.24 2023-09-05

- [1] New: Global switch for database header generation for C Code
- [2] New: Ethernet Trace Window added
- [3] New Devices: TE1051, TP1018, TC1017
- [4] Bug fixes for RBS, Panel and more
- [5] Python x64 environment can be automatically deployed
- [6] New Graphics Options for floating cursors display and Y axis width
- [7] New Feature: Signal Tester in Test Solution
- [8] New: Alias name supported in Graphics
- [9] Bug fix: TSMaster dll init error

1.25 2023-08-04

- [1] Improved: tsapp_show_tsmaster_window can now direct start
- [2] New: Ethernet support added in mini program
- [3] New: TS Virtual Channel and VN5620 series supported in TSMaster with raw ethernet frame Tx/Rx
- [4] New APIs: get database index by id
- [5] New APIs: ethernet transmission and blf logging

- [6] New API for lolp: `com.ioip_set_tcp_server_connection_callback`
- [7] Improved: all old style open and save dialog upgraded to new style
- [8] New APIs: register and unregister system variable change event in mp and dll
- [9] Bug fix: Python in TSMaster sometimes cannot use pip
- [10] New API: `block_current_preTx` to block frame transmission in preTx event gracefully
- [11] New Python API: `flexray_rbs_update_frame_by_header`
- [12] Bug fixes for UI
- [13] Improved: load and save configuration
- [14] New Device support: OBD Wifi Device
- [15] New: Alias support for CAN and FlexRay database network name, changing database will not affect one line of your code now
- [16] New: Arbitrary function caller API for MP, dll and COM, your custom API functions can be invoked dynamically
- [17] Improved: Logging start timestamp aligned to application connection time
- [18] New: programmable filter for each measurement window, you can write your own code to filter measurement frames
- [19] Improved: Graphics lower CPU consumption

1.26 2023-07-11

- [1] New APIs for UI, watchdog and graphics configuration dynamic loading
- [2] New instant API document help in C code editor (F1 is hot key)
- [3] New instant API document in graphic program
- [4] New: Python file in toolbox builder can now be encrypted for distribution
- [5] New: Embed in group command in Graphic program
- [6] New: LIN RBS APIs available in mini program and DLL functions
- [7] New Device: TP1013 supported
- [8] New API for path adding and deleting
- [9] J2534 released

- [10] Improved: TSMaster can now be installed into non-ANSI directory
- [11] Feedback entry added in each Form
- [12] Bug fix: Panel Memo flicker
- [13] New 22 APIs for system var written with timestamp
- [14] New API: `app.db_get_signal_startbit_by_pdu_offset`
- [15] New: Alignment feature in Toolbox designer
- [16] New APIs for ui operations: `ui_show_save_file_dialog`,
`ui_show_open_file_dialog`, `ui_show_select_directory_dialog`
- [17] Improved: channel selection for specific serial number can now be remembered to correct hardware index

1.27 2023-06-14

- [1] New Graphic program importer from Excel file
- [2] New option to improve mini program compile speed (default ON)
- [3] New: CDM module in Calibration

1.28 2023-06-02

- [1] New 32 MP and DLL APIs for Graphic program generation
- [2] New Demo project for Graphic program generation
- [3] Bug fix for mini program build with conflicted define
- [4] Improved: mini program OnTx and OnRx data protected by default
- [5] New MP API to trigger FlexRay RBS update frame:
`com.flexray_rbs_update_frame_by_header`

1.29 2023-06-01

- [1] New MP and DLL API for CAN, LIN and FlexRay raw signal read and write
- [2] New option in C Code Editor for generation of raw signal read and write interface

1.30 2023-05-29

- [1] New MP and DLL API for FlexRay database:
db_get_flexray_cluster_parameters and db_get_flexray_controller_parameters
- [2] New MP and DLL API for System Vars: set_system_var_event_support and
get_system_var_event_support
- [3] New MP and DLL API: get_date_time
- [4] New MP and DLL API for online replay: tslog_disable_online_replay_filter
and tslog_set_online_replay_filter
- [5] Signal mapping engine improvement: auto activate RBS, and auto set
direction

1.31 2023-05-24

- [1] All 450+ mini program APIs exported for Python, demos provided for each API
- [2] Auto save project feature added
- [3] New api: add and delete system constant
- [4] New panel control: Scroll Box hosting sub controls with scroll bars
- [5] New toolbox control: Scroll Box hosting sub controls with scroll bars
- [6] New converter: FlexRay asc to blf, FlexRay blf to asc
- [7] TsFlash device published
- [8] New option in App Publish: run with TOSUN hardware w/wo Encrypt publish
license

1.32 2023-04-27

- [1] New Options for easy signal selection in panel control with edit abilities
- [2] New: direct signal mapping now supports CAN, LIN and FlexRay database
selectors
- [3] New: Static Heading and Trailing bytes can be added to CRC algorithms in CAN
and FlexRay RBS

- [4] Improved: Panel Selector now supports FlexRay signal value table
- [5] Improved: Rolling counter increment only available when UB = 1 in FlexRay
- [6] Exported: `tsapp_get_flexray_channel_count`,
`tsapp_set_flexray_channel_count`
- [7] Exported: generic signal read write APIs for CAN, LIN and FlexRay
- [8] New Option: result can be ignored in graphic program API call
- [9] Improved: Left Jump supported in Graphic Program (Simple support for If statement)

1.33 2023-04-10

- [1] New APIs: get signal properties by index in frame
- [2] New Python APIs: full database parser for CAN, LIN and FlexRay
- [3] New Python APIs: rbs functions for CAN and FlexRay
- [4] New Python APIs: signal get set functions for CAN, LIN and FlexRay
- [5] New demo: Python API tests for all available python functions, increasing
- [6] New large Icons in ribbon
- [7] New: Python mini program now supports database header and constant header
- [8] New: python form now supports id filters for frame reception, transmission and preTx events

1.34 2023-03-29

- [1] New: Configuration manager in graphics
- [2] Bug fix: signal server for fibex signals
- [3] Bug fix: toolbox builder Glyph properties
- [4] New APIs: frame list and signal list can be retrieved from CAN, LIN, FlexRay database in MP and Win32

1.35 2023-03-24

- [1] New: Memo control added in panel
- [2] New: Svg image button control added in toolbox designer
- [3] Bug fix: diagnostics module
- [4] Bug fix: signal server for arxml multiplex signals

1.36 2023-03-17

- [1] New: Panel controls now can directly call API without associating system variables
- [2] New: UB bits can be set or reset in FlexRay database viewer
- [3] New: mini program supports LIN frame signal manipulation
- [4] Improved: Automation Module renamed to Graphic Program
- [5] New: APIs for system constants traverse
- [6] Improved: LIN RBS Back
- [7] New: FlexRay filter in trace

1.37 2023-03-13

- [1] Graphics Improved: Split header can be defined
- [2] New: min and max column added in graphics
- [3] Graphics improved: Y axis will be invisible if too many signals in list
- [4] Graphics improved: performance improved in cursor selection
- [6] New: min and max value display in Numeric
- [7] New: measurement time display in main window
- [8] New: 29 Win32 APIs added for CAN, LIN and FlexRay database parser
- [9] Crash bug fix in TSMaster for overall stability
- [10] Overall performance improved
- [11] Bug fixes in Automation Module
- [12] Benchmark added: project load time

1.38 2023-03-08

- [1] Performance Improved: CPU load reduction during simulation
- [2] New Video: Python call mini program API
- [3] New Video: TOSUN UDS Module
- [4] New Devices supported: GW2116, TC2115, MP1013
- [5] New: CAN RBS supports setting message direction in UI
- [6] New: Toolbox controls demo added: group box, panel, radio group, shape, scroll bar

1.39 2023-03-07

- [1] Improved: CAN RBS supports multiple CRC and Rolling Counter
- [2] Improved: FlexRay RBS supports multiple CRC and Rolling Counter
- [3] Improved: online replay supports direct ASC file replaying
- [4] New: start and stop buttons added to TSMaster taskbar icon
- [5] New: progress bar added to TSMaster taskbar icon
- [6] Bug fix: enable and disable graphics may cause crash during measurement
- [7] Bug fix: dll function initialize_lib_tsmaster_with_project
- [8] Bug fixes for diagnostics
- [9] Bug fixes for calibration

1.40 2023-02-27

- [1] New: demo for combobox, listbox and static text in toolbox
- [2] New: UB bit auto set and clear implemented in FlexRay RBS
- [3] Improved: Calibration module
- [4] Bug fix: FlexRay RBS engine in TSMaster.dll
- [5] New: APIs for panel selector list read and write
- [6] Bug fix: mp API blf_to_asc and asc_to_blf
- [7] New APIs: tscom_flexray_set_signal_value_in_raw_frame,

tscom_flexray_get_signal_value_in_raw_frame and
tscom_flexray_get_signal_definition

1.41 2023-02-02

- [1] New: Video added for toolbox builder design procedure
- [2] New: mini program C API can now be called by python directly
- [3] New: Syntax prompt in python can be automatically generated when mini program API is built
- [4] New: Usage demos for form, label, button, edit are available in toolbox
- [5] New: FlexRay database APIs available in Win32
- [6] New: FlexRay database APIs available in In Process COM
- [7] New: FlexRay database APIs available in Out of Process COM
- [8] New: fibex parser demo implemented in python
- [9] Bug fix: blf logging of FlexRay encounter crash in some cases
- [10] Improved: Calibration module

1.42 2023-01-15

- [1] New: Python environment settings for TSMaster
- [2] New: TSMaster package installer for python
- [3] New: Copy, cut and paste components supported in TS UI designer
- [4] New: You can now use VSCode to define your own TSMaster
- [5] Same python code can run in TSMaster or standalone
- [6] In standalone mode, all TSMaster windows become your tools
- [7] Debugging and stepping is possible using VSCode
- [8] New: TS UI Designer can develop and start standalone app now
- [9] Improved: program name conflict of mini program is prevented
- [10] Bug fix: blf logging for FlexRay events
- [11] New: prevent popping up crash dialog option added

1.43 2022-12-30

- [1] New: Support multiple logging modules
- [2] Update: support create new file after filesize more than setting filesize.
- [3] Bug fix: Resolve bugs that cause UI crash of diagnostic module.
- [4] Update: FR scheduling table can be configured at the same time in RBS UI and hardware configuration UI.
- [5] Update: support Select/Deselect All FR frames of ECU node.

1.44 2022-12-20

- [1] New: Toolbox designer released, everyone can design TSMaster professional UI using Python !
- [2] New: IDE for python GUI design
- [3] New: auto code generation for python GUI
- [4] New: Console for integrated python, which can access TSMaster internals in real-time
- [5] New: Signal Comparer Module added
- [6] New API: API added for Adding signals to Signal Comparer Module
- [7] New: Add CAN/CANFD Sequence Transmit Module
- [8] Multi-language for Diagnostic Module is completed
- [9] Update Calibration Module, support download multi-hex files

1.45 2022-12-06

- [1] New: 27 database APIs added for CAN, LIN and FlexRay signal traverse
- [2] New Demo: Database signal traverse
- [3] New: 2 Test APIs added for signal jump and unchange behaviors
- [4] New: Automation Module now supports FlexRay Simulation

1.46 2022-12-01

- [1] New: FlexRay Error event, cycle start event and status event supported in trace
- [2] New: FlexRay Remaining Bus Simulation feature added
- [3] New: Panel now supports FlexRay RBS frame triggering
- [4] New: 21 FlexRay RBS APIs added for mini programs and automation modules
- [5] New: 10 Test APIs added for signal edge, monotony and signal follow checking

1.47 2022-11-20

- [1] C Code editor import supports merge mode
- [2] Last value can be displayed in variable list in automation module after run
- [3] Improved: Automation module saving and signal selection
- [4] C Code Editor supports Flexray rx, tx and preTx events
- [5] 13 APIs added for FlexRay
- [6] FlexRay database symbols supported
- [7] Improved: solution for compilation on computers with Chinese user name

1.48 2022-11-08

- [1] log info can show module, function, line number and crash detection
- [2] New settings in C code editor
- [3] CAN trace can import and export blf and asc
- [4] bus replay can now directly replay asc files
- [5] drag asc file into TSMaster supported
- [6] TS virtual channel now supports FlexRay and Ethernet
- [7] application channel can be renamed
- [8] New: FlexRay Database window
- [9] New: FlexRay Trace Window
- [10] New: CANoe Controller
- [11] New: CANoe Controller APIs

- [12] New: automation module action group supports repeat count as variable
- [13] New: FlexRay Transmit Window
- [14] New: FlexRay signal graphics support
- [15] New: FlexRay signal Numeric support
- [16] New: Video tutorials added for CANoe controller
- [17] New: FlexRay signal meter support
- [18] New: FlexRay panel display support

1.49 2022-09-19

- [1] New: Symbol Mapping now supports expression mapping
- [2] New API: API added for symbol mapping automation
- [3] New: Advanced symbol mapping demo project
- [4] New: Signal generators in CAN Transmit, LIN Transmit and STIM window can now link system variable
- [5] New Window: Constant manager added
- [6] New: User constants feature supported
- [7] New API: `get_constant_double` to retrieve constant value in code
- [8] Improved: Calibration XCP transport layer now supports CAN FD
- [9] New Video: Advanced symbol mapping

1.50 2022-09-07

- [1] New: System variables can now be logged and replayed
- [2] New: Date time supported in CAN Trace
- [3] New API: system var logging property can be set and get
- [4] New API: `get_system_var_address` for direct system var memory access
- [5] New API: atomic operations
- [6] Bug fix: graphics splitted view legend refresh

1.51 2022-08-19

- [1] New: Post processing for offline replay
- [2] New: Matlab Controller toolbox re-added
- [3] New: Auto SIL & HIL code generation and mini program integration
- [4] New: Symbol mapping direction can be set
- [5] New: Auto code and panel generation in system variable manager
- [6] Improved: Rolling counter limit supported in CAN RBS
- [7] New video tutorial: Automation module reuse
- [8] New video tutorial: Automation module verdict
- [9] New video tutorial: Checksum and rolling counter native support in CAN RBS
- [10] New video tutorial: J1939 multi-frame transmission and reception
- [11] New video tutorial: Matlab controller SIL and HIL
- [12] New video tutorial: offline replay post processing
- [13] Bug fix: local var not accessible in automation module
- [14] Bug fix: popup window size not correct under high dpi

1.52 2022-08-10

- [1] Improved: Undo and Redo supported in Panel
- [2] Improved: Undo and Redo supported in Automation Module
- [3] Improved: CTS and RTS supported in J1939 TP
- [4] New: Persistent select mode added in Graphics with single select activated
- [5] New: Native support for Rolling counter simulation in CAN RBS
- [6] New: Native support for Checksum simulation in CAN RBS
- [7] New API: CAN RBS function for signal type settings: normal, RC and CRC
- [8] New: UI hang detection
- [9] Improved: CAN RBS UI performance
- [10] New: sub group supported in toolbar sub menu items

1.53 2022-08-01

- [1] Improved: Graphics display performance
- [2] Improved: project path with Chinese characters supported
- [3] New: J1939 Node Configuration dialog
- [4] New: J1939 API for J1939 protocol related operation and multi-packet transmission
- [5] CAN RBS supports J1939 BAM and CDMT PDU transmission and reception
- [6] Measurement windows all support J1939 multi frame signals
- [7] mini program supports J1939 signal get and set through CAN RBS and signal server
- [8] New: Signal checker APIs for automated testing
- [9] Bug fix: calibration log replay with signal name xxx.0.xxx supported
- [10] Bug fix: CAN Trace copy message as text
- [11] Deleted: Internal python x64 distribution

1.54 2022-07-21

- [1] New: send raw message supported in Automation module
- [2] New API: clear measurement form for Graphics, Trace, ...
- [3] Improved: Numeric now supports bar display
- [4] Bug fix: more than one channel assign same database causes signal server display wrong value in graphics, numeric, panels and so on
- [5] Bug fix: panel relation chart cannot distinguish var types of x and y axis

1.55 2022-07-19

- [1] New: error line can be located in C editor with editing features enabled
- [2] New: search all and replace all supported in C editor
- [3] New API: CAN RBS fault injection API added with message lost and signal alter features

[4] New API: static PDU container location in arxml can now be adjusted only in cycle 0

[5] Bug fix: modal form has invalid caption in tabbed MDI mode

[6] Bug fix: system variables associated in panel and numeric not update after application connected more than one time

1.56 2022-07-13

[1] New API: CAN RBS now supports setting direction of node messages, this can be very useful when there is only one target ECU in dbc or arxml file

[2] New: up and down indicator for Calibration variables

[3] New: baseline settings added for Calibration variables

[4] New: Address mapping editor in calibration memory segment page

[5] Improved: simple signal group transmission supported in arxml file

[6] Improved: on message event in C editor now supports code template

[7] Bug fix: importing a2l with duplicated group name causes UI crash

[8] Bug fix: importing a2l with duplicated measurement name causes crash

[9] Bug fix: repeat count in CAN transmit and STIM not functional

[10] Bug fix: automation module copied group saving causes action overlap

[11] Bug fix: disconnect app cause calibration parameter curve crash

[12] Bug fix: transmit load configuration has no effects

1.57 2022-07-04

[1] New: Auto run property introduced for mini program library without source code

[2] New: instant API picker supported in automation module

[3] Bug fix: CAN FD message with DLC > 8 parsed as DLC = 8 in CAN RBS

[4] Bug fix: adding panel control may cause AV after other panel controls deleted

1.58 2022-06-27

[1] New: panel get and set apis for UI automation

New Demo: Tetris game build with panel

[2] New: virtual CAN and LIN messages can now be injected into TSMaster system

[3] New: STIM signals can now be automated using mini program API

[4] New: Automation module can now be automated using mini program API

1.59 2022-06-17

[1] New: Open project dialog added

[2] New: A2L synchronization module

[3] New: async APIs added for system var write

[4] Bug fix: action lost sometimes in automation module after saving

[5] Bug fix: 4 API arguments updated, please update your client code if necessary:

can_rbs_activate_network_by_name, can_rbs_activate_node_by_name,

can_rbs_activate_message_by_name, can_rbs_set_message_cycle_by_name

1.60 2022-06-13

[1] New: App Builder feature added

[2] New: Custom controls supports icon change, import and export

[3] New: Log file path is registered as system variable for automation

[4] New: Project Settings window added, supporting project naming

[5] New: Favorites added in automation module

[6] More shortcuts available in automation module

[7] Improved: tx and rx messages in arxml are now fully parsed

[8] bug fix: extended FD frame from arxml read as standard FD frame

1.61 2022-05-31

- [1] New: Custom controls supported in panel
- [2] New: copy screenshot to clipboard
- [3] Improved: MATRIX_DIM supports single number configuration in calibration a2I file
- [4] Bug fix: CAN hardware channel count overwritten by LIN database window
- [5] Bug fix: Panel shortcut key not founctional

1.62 2022-05-23

- [1] New: Encrypted Publishing Toolbox
- [2] New: UDS Code Generator Toolbox
- [3] New Demo: UDS Code Generate with dynamic parameters
- [4] New: App manager
- [5] Improved: Multiple Channel filters supported in CAN Trace
- [6] Improved: Panel layout for scaled and fit are only active when panel is running
- [7] Improved: Export graphics data between measurement cursors
- [8] Improved: Mini program step function now supports timer min step = 0.5 ms

1.63 2022-05-07

- [1] Diagnostics New: Diagnostic debugging module
- [2] Diagnostics New: UDS Diagnostic analysis and display module. Parse the diagnostic data parameters and display them in the tree structure
- [3] The introduction of system variables as the diagnostic parameter type increases the flexibility of the diagnostic module and facilitates data interaction with other modules in tsmaster
- [4] Diagnostics New: executable file parsing and downloading module
- [5] Diagnostics New: UDS test group and test case management
- [6] Diagnostics Update: Automatic diagnostic flow module. Diagnostic flow such as flash bootloader can be completed through this GUI module without coding.

[7] New: MP API added for system var properties setting and rbs

[8] Improved: in online replay, one source channel can be mapped to multiple destination channels by inserting comma between channel numbers

[9] Improved: Hex display format supported in Numeric

1.64 2022-04-26

[1] New: Symbol mapping now supports bidirectional mapping with RBS support

[2] New: Videos of TSMaster real-time HIL simulation for automotive ECU development

[3] New: Application Event order for advanced users

[4] New: CPU core tuning for advanced users

[5] Improved: system var supports pointer type argument in graphical language

[6] Graphics bug fixes

1.65 2022-04-18

[1] New: Build RBS for specific node (HIL mode)

[2] New: AN0006 (Use automation module and graphical language) is published

[3] Bug fix: Video replay window cannot be opened

1.66 2022-04-16

[1] New: CAN database signal based communication matrix viewer

[2] New: CAN database message based communication matrix viewer

[3] Improved: Calibration reconnect feature implemented

[4] Bug fix: CAN database configuration corrupt with Chinese characters in file path

1.67 2022-04-12

- [1] New: report generator added in automation module
- [2] New: constant picker added in c code editor and automation module
- [3] New: copy paste of single action supported in automation module
- [4] New: graphical language sub system tutorial video
- [5] New: automation module navigation feature
- [6] Improved: graphics drag drop insertion
- [7] Improved: Calibration Parameter Curve now supports value table

Note: to modify multiply selected items, press enter after selection, value picker list will be popued

1.68 2022-04-06

- [1] New: Graphics now supports split views
- [2] Improved: Graphical language non-decision actions omits direction

1.69 2022-03-30

- [1] New: Automation module replay feature
- [2] panel switch component completely rewritten with more color options
- [3] Improved: software performance enhanced in tabbed MDI mode
- [4] Improved: lower CPU consumption with large window number
- [5] Bug fix: switch from tabbed MDI to normal form cause caption display incorrect

1.70 2022-03-26

- [1] Graphical programming language supports sub system and module link
- [2] Graphical programming language supports step into (F7)
- [3] Bug fix: Text in Panel property can selected by cursor drag
- [4] Bug fix: Panel menu display incorrectly in DPI <> 96
- [5] Bug fix: Panel scrollbar display no scrollbars in DPI <> 96

1.71 2022-03-19

- [1] New: change title is now easier on right-top area of each form
- [2] New: set top most window supported
- [3] New: Real-time comments can be added in calibration log files in offline mode
- [4] Improved: Calibration ECU name can be changed
- [5] Improved: write_realtime_comment API now supports blf created by start_log

1.72 2022-03-15

- [1] New: Memory consumption and load time added in settings
- [2] New: Video for graphical programming language debugging
- [3] New: Printing supported in automation module
- [4] New: Filter added for online replay
- [5] New: Filter now supports channel in CAN Trace
- [6] Improved: UI of calibration

1.73 2022-03-10

- [1] New: Automation module arbitrary expression supported
- [2] New: Diagnostics API

1.74 2022-03-07

- [1] New: Automation module logging
- [2] Improved: Calibration curve display

1.75 2022-03-04

- [1] New: Set home and restore home supported in graphics
- [2] Bug fix: crash in calibration measurement list edit with filter

- [3] Improved: global font in software
- [4] Fixed: database and log file path corrected in demo scripts

1.76 2022-03-02

- [1] New: play sound API
- [2] New: Goto and From supported in Graphical language
- [3] API bug fixes

1.77 2022-02-28

- [1] API bug fix

1.78 2022-02-25

- [1] New: Variants supported in Automation Module
- [2] Improved: row height of graphics becomes smaller to display more signals
- [3] Modified: wheel scroll does not pause graphics from now on

1.79 2022-02-22

- [1] New: Automation Module released
- [2] New: Graphical programming language released
- [3] New: software global font can be changed in settings
- [4] Improved: Software font looks more clear in machines with DPI <> 96

1.80 2022-02-18

- [1] New: Use parsed database file to improve project load speed by 100x faster especially with super large dbc and arxml files
- [2] New: Option to copy database file to local project folder (default not copy)

[3] New: Options to control numeric and 3D visibility in calibration curve

[4] New: Options to prevent RBS from being activated by external modules such as panel

[5] Improved: ECU name existence can be controlled also in mat and mdf file

[6] Bug fix: Graphics import data cause hang

[7] Bug fix: Calibration ECU memory and cache insistency

1.81 2022-02-14

[1] New: option to add ECU name prefix in system vars generated by calibration

[2] bug fix: graphics displays value table and units during calibration replay

[3] minor bug fixes and improvements

1.82 2022-02-08

[1] New: MP variable init value supported

1.83 2022-01-27

[1] Improved: dead-lock of on var change event auto break in C code execution

[2] Improved: Panel UI load and unload performance increased

1.84 2022-01-26

[1] New: project directory being used prompt supported

[2] Bug fix: db changes cause hidden panel crash

[3] New: auto generation of C code on compile for Git version compare

1.85 2022-01-22

- [1] new file type: PT7z (password protected T7z)
- [2] TSMaster project directory icon supported

1.86 2022-01-21

- [1] directory based project management instead of T7z file
- [2] Note: all relative paths reference to project directory
- [3] Note: temporary directory can be dangerous, please create new directory for each project
- [4] Note: T7z file is now only used to import, export and project exchange
- [5] Note: Git can now be used on project directory

1.87 2022-01-17

- [1] Single signal mode supported in graphics
- [2] horizontal cursor and vertical cursor supported in graphics
- [3] + - * / buttons supported in Parameter curve
- [4] minor bug fixes in graphics

1.88 2022-01-13

- [1] New: signal server API supported in mini program
- [2] Improved: Numeric now supports replay

1.89 2022-01-11

- [1] New: Arxml Multiplex signal display supported in Graphics, Numeric, Meter, Panel
- [2] New: Factor and Offset supported in symbol mapping
- [3] Improved: Panel high display quality

1.90 2022-01-03

- [1] Mini program variable change event can associate any system variable
- [2] Module Auto start priority can be set in software settings

1.91 2021-12-26

- [1] Kernel improvement: load database, startup performance, etc.
- [2] graphics bug fix: cursor time incorrect
- [3] API Improvement: API can be initialized multiple times for LabVIEW

1.92 2021-12-21

- [1] New: system variables can now be created or deleted by API
- [2] Improved: C editor system function names sorted
- [3] Bug fix: unsupported arxml multiplexed signals deleted in C editor
- [4] Bug fix: delete form in measurement setup causes order incorrect

1.93 2021-12-14

- [1] Improved: CAN Trace redesigned (arxml pdu supported)
- [2] Improved: CAN Trace sort dialog added
- [3] Improved: Project load speed increased
- [4] Improved: MDI title bar double click handler

1.94 2021-12-09

- [1] New: [Calibration] Array type Measurement Var monitor, log and replay supported
- [2] Bug fix: enum display in calibration
- [3] Bug fix: factor and offset calc. in graphics

1.95 2021-12-06

- [1] New: CAN Trace Sync. token with Graphics supported
- [2] New: C Code snippet supports DB signals and RBS signals
- [3] Improved: Graphics horz. and vert. adjust
- [4] Improved: Graphics new column: Type
- [5] Improved: System messages new filter
- [6] Improved: C Code editor compiler default supports multi thread

1.96 2021-11-26

- [1] New: Get unique computer hw id api added
- [2] Improved: TSMaster icon resolution enhanced
- [3] Improved: all signals in message can be auto created as pair in symbol mapping

1.97 2021-11-24

- [1] Improved: C editor omits duplicated message name while compiling
- [2] Bug fix: edit signal in sorted list of graphics

1.98 2021-11-15

- [1] New: tutorial videos in youtube when language is not Chinese
- [2] New: drag signals from Calibration database and System variable manager to STIM
- [3] Improved: UI elements in CAN database, CAN Statistics
- [4] Bug fix: default byte order in Calibration
- [5] Bug fix: force stop connecting in calibration cause crash

1.99 2021-11-04

[1] New: Add, Dec, Mul, Div supported in STIM

[2] New: Diagnostics

1.100 2021-10-26

[1] New: auto code gen in CAN RBS in popup menu

[2] New: API to set message cycle in CAN RBS

[3] Improved: address in A2L now supports 0xFFFF (non official)

[4] Improved: mouse wheel on signal Y axis in Graphics: scroll to move, Ctrl + scroll to zoom

[5] Bug fix: get or set vendor detect options API

1.101 2021-10-19

[1] New: Counter column in CAN Trace

[2] New: Graphics y axis display option

[3] Improved: quantization error in trace eliminated

[4] Improved: RAM and Flash mapping supported in calibration for A2L generated by Vector

[5] Bug fix: clear bus stat under baud <> 500k

[6] Bug fix: multiplex editor in graphics

1.102 2021-10-06

[1] New: Open source CAN tool CANable (candleLight) supported

1.103 2021-10-03

[1] Improved: High DPI display

[2] New: compiler parameters in C Editor

1.104 2021-09-29

- [1] New: Test system parameters can now be loaded from ini file
- [2] New: Test system parameters list load and save with csv supported

1.105 2021-09-28

- [1] New: Drag drop from Trace to Graphics, Meter, Numeric, Panel
- [2] New: Drag drop from Calibration database to Graphics, Numeric, Parameter Curve, Panel
- [3] New: Drag drop from CAN Database to Graphics, Numeric, Panel
- [4] New: Drag drop from LIN Database to Graphics, Numeric, Panel
- [5] New: Drag drop from System Var Mgmt to Graphics, Numeric, Panel
- [6] New: Default settings options for STIM, CAN Transmit, CAN Trace, LIN Transmit, LIN Trace, Graphics
- [7] Improved: Calibration log file name supports absolute dir
- [8] Improved: Graphics signal list header popup menu added

1.106 2021-09-25

- [1] Improved: App Host options
- [2] Bug fix: calibration new ecu cause crash

1.107 2021-09-22

- [1] New: API for ini files read and write
- [2] Improved: var on written and on change distinguished in mini program
- [3] Improved: Graphics and STIM now highlights deleted signals
- [4] Bug fix: calibration CRC DWORD algorithm selected as ARC
- [5] Bug fix: calibration hex export with address range > 0xFFFF

1.108 2021-09-16

- [1] Improved: stop measurement in each MDI is invoked before app disconnect
- [2] Improved: batch modification in graphics
- [3] Improved: value table of system variable is now ordered
- [4] Improved: Calibration measurement list highlights n.a. signals
- [5] Improved: Calibration measurement list filter implemented
- [6] Bug fix: set double signal in mini program
- [7] Bug fix: keydown enter twice in graphics
- [8] Bug fix: prevent graphics eat mouse click after right mouse button down
- [9] Bug fix: Non-ISO cannot be selected in TS FD hardware config
- [10] Bug fix: value table lost in copied message in CAN FD Transmit window

1.109 2021-09-11

- [1] Improved: Graphics now supports undo and redo
- [2] Improved: Graphics grid color alpha set to 20%
- [3] Improved: Graphics X axis font color same as X axis color
- [4] Improved: Graphics Y axis increment max count can be set
- [5] Improved: Numeric window now supports offline bus signal replay display
- [6] Improved: Calibration error code message display added
- [7] New: Prompt user input in MP API
- [8] Bug fix: panel drag control over container causes hang

1.110 2021-09-03

- [1] Improved: Graphics supports signal color customization
- [2] Improved: Graphics zoom feature
- [3] Improved: Kill focus on panel input output box
- [4] New: Calibration CRC algorithm: CRC_BYTE, CRC_DWORD, CRC_2_WORD
- [5] Bug fix: Panel enable property

[6] Bug fix: blf write API without timestamp causes incorrect measurement start time

[7] Bug fix: first sample point not displayed in graphics

1.111 2021-08-31

[1] Bug fix: large raw signal modify in CAN FD transmit

[2] Improved: MDI form borders are easily to drag

[3] Improved: Graphics signal list width persistance

1.112 2021-08-29

[1] New: Graphics goto specific time

[2] New: Sync scroll among all Graphics, based on their "Sync. Token" property

[3] New: fixed form mode (cannot resize and move)

[4] Bug fix: format display in calibration

1.113 2021-08-26

[1] Bug fix: IEEE float 32 and 64 factor and offset not calculated

[2] New: Graphics signal can switch to vertical line junction style

[3] Updated: save measurement dialog add delete file option

1.114 2021-08-25

[1] Bug fix: Panel pasted control drag causes shadow

1.115 2021-08-24

[1] Bug fix: calibration stop uploading while connecting cause hang

[2] Bug fix: CCP byte order cannot be changed

- [3] Bug fix: blf BL_OBJ_TYPE_CAN_FD_MESSAGE_64 parse
- [4] Improved: up and down button affect all selected signals in STIM
- [5] Improved: Graphics drag drop multiple signals supported
- [6] Improved: Curve drag drop multiple signals supported

1.116 2021-08-18

- [1] New: Graphics line style and width options
- [2] New: mat file read write api added
- [3] Updated: Calibration Curve order list by dragging
- [4] Bug fix: some panel configuration lost after one of multiple panels deleted
- [5] Bug fix: Trace display LIN 3C 3D signal crash

1.117 2021-08-12

- [1] Bug fix: CAN FD transmit window, signal init value is always 0

1.118 2021-08-10

- [1] New: CAN Trace set reference under chronological mode
- [2] New video: calibration automation
- [3] Bug fix: Calibration cache enable option persistent

1.119 2021-08-08

- [1] New demo: Convert Blf to signal based CSV
- [2] Updated: real-time comment is now shown in Graphics charting area

1.120 2021-08-06

- [1] Bug fix: calibration crash when stopping in polling mode

- [2] Updated: C Code Editor var and timer highlighted, method popup supported

1.121 2021-08-05

- [1] New: udp APIs added in ioip
- [2] Bug fix: Panel circular reference problem
- [3] Bug fix: Align of child objects in panel is now persistent
- [4] Bug fix: channel selection dialog select all and deselect all

1.122 2021-08-04

- [1] New: Auto Mapping Code generation for TSMaster SDK

1.123 2021-08-03

- [1] New: file and directory API added
- [2] New: UDP broadcast API added

1.124 2021-08-02

- [1] New: Global rx filter added for all supported CAN interfaces
- [2] New: Feature select with project templates
- [3] New: video link added: Global Rx filter
- [4] Bug fix: Panel start before mini program causes system var link incorrect

1.125 2021-07-30

- [1] New: video link added: Mini Program tutorial 2
- [2] New: Feature select dialog
- [3] New: text file APIs in mini program

1.126 2021-07-29

[1] New: video links added in Calibration window, C Editor, System Var Mgmt, Hardware

[2] New: AN0005 How to transmit LIN frames

[3] Bug fix: CAN trace display mode change causes frame lost

[4] Updated: Calibration A2L group with no parent will be shown in root

1.127 2021-07-27

[1] New: calibration parameters can be inserted to hex

[2] New: TSDB added in out of process server

[3] New: system variables can be read or write by COM server

[4] New: video links added in C Code editor and CAN RBS windows

[5] Improved: TSMaster setup file may not be killed by some virus software

[6] Improved: TC1005 driver performance enhanced

[7] Updated: TSMaster Calibration document AN0001

1.128 2021-07-23

[1] New: Measurement window: Numeric

[2] New: server response API functions added in ioip in mini program

[3] New: calibration parameters can be imported from hex

[4] New: buttons on quick customization bar on main ribbon

[5] Bug fix: panel input-output box initial value is always n.a.

[6] Bug fix: calibration map batch modification not work

1.129 2021-07-15

[1] Mini program VC++ project can be generated directly in editor

[2] MDI now supports colorful window title color

1.130 2021-07-14

- [1] SYSTEM_CONSTANT related compu methods supported in calibration
- [2] TSMaster plugin can also be implemented as mini program library
- [3] Offline calibration mode supported in XCP
- [4] Offline calibration mode supported in CCP

1.131 2021-07-13

- [1] realtime comments now supported in bus log
- [2] APIs added for blf realtime comments
- [3] APIs added for realtime comments in app environment
- [4] Blf_Logging example updated for realtime comments
- [5] Build checksum supported in XCP
- [6] Build checksum supported in CCP

1.132 2021-07-08

- [1] Graphics all columns can now be sorted
- [2] Trace fixed display logic re-written

1.133 2021-07-07

- [1] CAN Trace fixed mode stress test (100000 frames/sec per channel) passed
- [2] Graphic signals support sorting by name
- [3] Bug fix: Calibration large address cause crash (not tested)
- [4] Bug fix: Test system report automation image template generation
- [5] Added: post process script supported in Test system report automation

1.134 2021-07-01

- [1] CCP hex file can be exported after calibration
- [2] Bug fix: bkgd color read crash in panel
- [3] Bug fix: TS virtual channel mapping incorrect
- [4] XCP hex file can be exported after calibration
- [5] XCP hex file can be uploaded and downloaded

1.135 2021-06-26

- [1] Released: Mini Program SDK (<https://github.com/TOSUN-Shanghai>)
- [2] CCP hex file can be uploaded and downloaded

1.136 2021-06-20

- [1] Panel controls now support value table from system variables
- [2] Graphics refreshes during offline replay
- [3] Bug fix: CAN RBS not run first time when a configuration is loaded
- [4] TSMaster T7z file is now compatible with 7zip file format, replace files in project configuration manually is allowed

1.137 2021-06-17

- [1] Panel input output box bkgd and border color, font can now be customized
- [2] new API: `app.get_tsmaster_version`
- [3] value table supported in STIM window
- [4] A2L parser now supports "ECU" as module name
- [5] Panel bug fix: copy paste controls cause some objects missing
- [6] dialog added for unexpected start of CAN RBS engine in panel editor

1.138 2021-06-14

- [1] Test system example updated: insert screenshots into word report

- [2] Test API added: retrieve_current_result_folder
- [3] Test API added: write_result_image
- [4] Test system new example: Excel test system report automation

1.139 2021-06-12

- [1] Excel test system report process script demo added

1.140 2021-06-11

- [1] Improved: A2L loading speed increased by 10x
- [2] Bug fix: TC1011 baud rate UI not refreshed after CAN core switched
- [3] Bug fix: custom signal channel read only in graphics

1.141 2021-06-08

- [1] New Feature: TCP Server, TCP Client, UDP Server and UDP Client are supported in Mini program API
- [2] Bug fix: First value display error in Calibration Curve under Motorola byte order
- [3] System variable now supports unit display, value table display, accuracy, format to string, affects display of Calibration signals also
- [4] New Ethernet demo added: Generic TCP UDP Communication

1.142 2021-06-04

- [1] Bug fix: CCP fixed CAN ID DAQ packet data corrupt
- [2] Bug fix: Calibration save log dialog null value cause crash
- [3] Signal comments in transmit window are now persistent
- [4] Channel display added in database selector popped by C Editor
- [5] online replay engine stop criteria changed to > 1000 Tx errors

1.143 2021-06-02

- [1] CCP DAQ with fixed CAN identifier and event channel supported
- [2] MP API header fixed: excel_get_cell_value
- [3] MP API added: get_configuration_file_name
- [4] MP API added: get_configuration_file_path

1.144 2021-05-31

- [1] New Feature: Window layout control
- [2] Bug fix: dbc cycle parse

1.145 2021-05-29

- [1] Bug fix: CAN RBS load configuration not refresh UI
- [2] Bug fix: display of AXIS_PTS in calibration database window

1.146 2021-05-26

- [1] Bug fix: crash on connection to some HW

1.147 2021-05-25

- [1] CAN transmit window signal step settings are now persistent
- [2] mini program library dependency is now persistent
- [3] CAN RBS node selection is now persistent
- [4] CCP commands SET_S_STATUS and SELECT_CAL_PAGE supported
- [5] dbc parse speed 100x faster

1.148 2021-05-21

- [1] Timer accuracy optimized

1.149 2021-05-20

- [1] CAN RBS topology chart added

1.150 2021-05-14

- [1] max LIN frames in schedule table set to 150

1.151 2021-05-13

- [1] Blf logging API demo configuration added
- [2] Bug fix for extended frame id in asc conversion

1.152 2021-05-10

- [1] Each MDI window's z-order is now remembered
- [2] Blf file API added

1.153 2021-05-05

- [1] mini program library dependencies configuration supported

1.154 2021-05-02

- [1] TSMaster plugin manager released

1.155 2021-04-28

- [1] minor bug fixes

1.156 2021-04-23

- [1] Signal relation graphics added in panel

1.157 2021-04-22

- [1] TSMaster software architecture completely redesigned

1.158 2021-04-16

- [1] minor bug fixes

1.159 2021-04-13

- [1] minor bug fixes

1.160 2021-04-09

- [1] carlibration par file import supported
- [2] fifo module supported in COM API
- [3] graphics cursor zoom feature supported (default right cursor)
- [4] bug fix: bus logger generates additional frame

1.161 2021-04-02

- [1] improved support for arxml import
- [2] multiple databases in arxml can be extracted

1.162 2021-04-01

- [1] editing of measurement data comment supported in graphics

1.163 2021-03-31

- [1] CCP feature release
- [2] measurement cursor in graphics: left click to position, right click to cancel

position

1.164 2021-03-26

- [1] TSMaster and API overall performance improvement
- [2] feature added: dbc, ldf, excel test case auto reload after edit
- [3] default upload all calibration variables on connection
- [4] calibration comments can be displayed when cursor hovers mat file
- [5] par file export in calibration
- [6] bug fix: chinese char in transmit and graphics window not display

1.165 2021-03-22

- [1] TSMaster file preview shell components supported
- [2] shortcuts (F9, F10 and ESC) supported in graphics
- [3] string type supported in Text, input-output box and selector in panel
- [4] real-time comment supported during measurement (ALT + C)
- [5] graphics integral time display supported and made default
- [6] calibration database list display mode added

1.166 2021-03-17

- [1] bug fix: caption rename of curve form
- [2] wildcard search supported in calibration, CAN DB, LIN DB, system variables and symbol mapping
- [3] comments dialog support for calibration measurement files
- [4] parameter curve undo redo supported
- [5] parameter curve copy paste supported
- [6] STIM multiple change supported
- [7] STIM undo redo supported

1.167 2021-03-15

- [1] all calibration scalar signals are now supported in panel
- [2] curve and map data multi-select-modify supportd
- [3] curve and map data interpolation supported

1.168 2021-03-12

- [1] Bug fix for Calibration data timestamp display
- [2] Bug fix for Map COLUMN_DIR display
- [3] Bug fix for graphics system variable display

1.169 2021-03-10

- [1] Calibration log can be exported to MATLAB replay model
- [2] TSMaster LIN API updated

1.170 2021-03-09

- [1] Curves and Maps supported in calibration
- [2] MF4, MDF and DAT log files import supported in Calibration (2.00, 2.10, 2.14, 3.00, 3.10, 3.20, 3.30, 4.00, 4.10, 4.11, 4.20) from CANape and INCA

1.171 2021-03-02

- [1] MDF log files export supported in Calibration (2.00, 2.10, 2.14, 3.00, 3.10, 3.20, 3.30, 4.00, 4.10, 4.11, 4.20) for CANape and INCA
- [2] A2L parser crash problem fixed

1.172 2021-02-25

- [1] API for UI automation added

1.173 2021-02-24

- [1] COM_AXIS supported in XCP Curve
- [2] COMPU_VTAB, COMPU_TAB, FFORMULA supported in XCP
- [3] Graphics will show never-appear signals as n.a.
- [4] fixed: empty blf file replay cause TSMaster never connect
- [5] time axis also shows realtime value in Graphics

1.174 2021-02-22

- [1] STIM custom signal file import and export supported
- [2] Excel Test module released

1.175 2021-02-20

- [1] PEAK CAN FD device supported
- [2] Bug fix: FCOEFFS_LINEAR parse in XCP

1.176 2021-02-10

- [1] Video step method in AN0004 document updated
- [2] shortcuts supported in video replay
- [3] TSMaster features document updated
- [4] LIN diagnostics API Demos added
- [5] github link added: <https://github.com/TOSUN-Shanghai/TSMaster>

1.177 2021-02-06

- [1] video step supported in video replay
- [2] C# API updated

1.178 2021-02-05

- [1] writeable measurement signal supported in XCP
- [2] array parameter supported in XCP
- [3] Axis parameter supported in XCP
- [4] mini program library API exported
- [5] LIN diagnostics API exported
- [6] curve with fixed axis supported in XCP
- [7] video replay with blf feature supported
- [8] application note AN0004 added: video replay

1.179 2021-01-25

- [1] motorola supported in XCP module
- [2] bug fix for TC10xx USB transfer protocol
- [3] CAN multiplexor signal and multiplexed signal supported in Graphics

1.180 2021-01-24

- [1] CAN multiplexor signal and multiplexed signal supported in trace window
- [2] CAN multiplexor signal and multiplexed signal supported in transmit window
- [3] CAN signal sorted by position in trace window
- [4] CAN multiplexor signal and multiplexed signal supported in CAN RBS
- [5] CAN multiplexor signal and multiplexed signal supported in APIs

1.181 2021-01-21

- [1] Solved: panel align persistency
- [2] panel objects hierarchy is now displayed in tree
- [3] variables and timers documents now available in c editor
- [4] comments translated in c editor

- [5] group name of radio button persistency added in panel
- [6] alignment of signal text in CAN trace
- [7] xcp manual configuration without a2l supported
- [8] selector in panel will not display "=" in the future
- [9] special thanks list updated
- [10] C Mini program now supports C++ 11 standard

1.182 2021-01-18

- [1] system variable logging in calibration done
- [2] system variable replay in calibration done
- [3] symbol mapping from CAN signal to system variable done
- [4] legacy TC1005 firmware supported
- [5] Calibration module translated
- [6] application note feature added, which can be found on top-right area of TSMaster standard form, for example, Calibration form
- [7] application note for Calibration added: AN0001: How to use TOSUN Calibration XCP controller
- [8] application note for Calibration added: AN0002: Seed and Key algorithm implementation in XCP controller
- [9] application note for Calibration added: AN0003: TOSUN XCP controller mat log file format

1.183 2021-01-09

- [1] Scalar signals in XCP module now available

1.184 2021-01-04

- [1] TSMaster Pre-Tx API added in C version

1.185 2020-12-30

- [1] TSMaster C API released, which can be found in "bin\Data\SDK\examples\C"

1.186 2020-12-24

- [1] Mini program library demo project added: Simple Gateway Implementation
- [2] The running state of Mini program library can be triggered by system variable
- [3] The running state of calibration can be triggered by system variable
- [4] The value of Internal System variable can be modified directly in "System Variable Manager"
- [5] Add dialog support for blf logging file save operation
- [6] Default point count of Graphics set to 100000, can be adjusted
- [7] Stimulation feature added

1.187 2020-11-28

- [1] Panel LED now has Threshold property, under threshold mode, threshold high and low properties are active, otherwise, single ONValue is active
- [2] F5 and F6 shortcuts are added for starting and stopping application

1.188 2020-11-27

- [1] TS virtual channel com server removed
- [2] asc file time supported

1.189 2020-11-19

- [1] bug fix: can error frame read in blf
- [2] c code can be generated from tx and trace window

1.190 2020-11-18

- [1] Bug fix: CAN trace add filter
- [2] Bug fix: panel graphics and pie edit signal index out of bounds
- [3] Panel enable property added
- [4] C# SDK updated
- [5] LabVIEW SDK added
- [6] C# docs updated
- [7] Bug fix: graphics signal selection display in y axis

1.191 2020-11-16

- [1] panel select enhanced: normal select and invert select
- [2] precision property supported in panel text
- [3] classification of auto start modules

1.192 2020-11-15

- [1] translated: all dynamic languages
- [2] bug fix: j1939 dbc cause can rbs crash
- [3] panel ui refresh rate can be set
- [4] input output box in panel has label width property
- [5] switch in panel has label property
- [6] path button in panel has label property
- [7] system lang auto detect supported

1.193 2020-11-14

- [1] translated: all dynamic languages
- [2] bug fix: j1939 dbc cause can rbs crash
- [3] panel ui refresh rate can be set

- [4] input output box in panel has label width property
- [5] switch in panel has label property
- [6] path button in panel has label property

1.194 2020-11-13

- [1] printf supported in mini program
- [2] translated: channel selection
- [3] translated: check update
- [4] translated: documents
- [5] translated: graphics
- [6] translated: LIN database
- [7] translated: LIN RBS
- [8] translated: LIN trace
- [9] translated: LIN transmit
- [10] bug fix: panel display with more than 2
- [11] translated: logging
- [12] translated: matlab controller
- [13] translated: measurement data filter
- [14] translated: measurement setup
- [15] translated: meter
- [16] translated: mini program library
- [17] translated: panel
- [18] translated: playback
- [19] translated: settings
- [20] translated: symbol mapping
- [21] translated: system variable mgmt
- [22] translated: system messages
- [23] panel width and height properties now supported

1.195 2020-11-10

- [1] ICS VCAN3 channel 2 MSCAN supported
- [2] translated: form manager
- [3] translated: test system
- [4] translated: hardware configuration
- [5] translated: ribbon
- [6] translated: automotive converter
- [7] translated: C2Stateflow
- [8] translated: CAN / CAN FD Trace
- [9] translated: CAN RBS
- [10] translated: bus statistics
- [11] translated: C Code editor
- [12] translated: channel mapping
- [13] translated: vendor selection
- [14] panel: press esc to select parent control
- [15] splash screen not top most
- [16] panel: control name can be hidden by option

1.196 2020-10-31

- [1] translated: form manager
- [2] bug fix: PEAK receive interface

1.197 2020-10-30

- [1] Object list added in Panel
- [2] Arbitrary python scripts can be executed sync or async in mini program and

TSMaster APIs

- [3] max single log file size can be controlled in logging window
- [4] multi-language translated: CAN Database

1.198 2020-10-26

- [1] Panel label display format supported
- [2] Panel Graphics bkgd color and transparent properties added
- [3] Panel Units can be displayed in graphics
- [4] Panel input output box initial value corresponds to RBS value

1.199 2020-10-22

- [1] Single J1939 message can be transmit in CAN Transmit window
- [2] Bug fix: Trace not refreshed after J1939 dbc channel switch

1.200 2020-10-20

- [1] dbc to c source default output non-floating points
- [2] output encoding in automotive file converter can be switched between ANSI and utf-8
- [3] API bug fix: show single form by API should hide splash
- [4] API bug fix: load TSMaster.dll should not change current dir
- [5] J1939 single frame can now be displayed in trace with signals expanded

1.201 2020-10-19

- [1] Enumerate Hardware API added

1.202 2020-10-16

- [1] ARXML AutoSAR format supported
- [2] Automotive file converter added in Tools page, supported 10 format:
 - dbc
 - arxml

- xlsx
- xls
- dbf
- yaml
- sym
- csv
- json
- fibex

[3] dbc to C source code feature added in Automotive file converter

1.203 2020-10-13

[1] minor bug fixes in TSMaster API

1.204 2020-10-12

[1] Application Shortcuts supported: ctrl+O, ctrl+N, ctrl+S, ctrl+TAB, ctrl+shift+TAB

[2] hex display on/off will immediately trigger UI refresh

[3] Trace expanded nodes will be remembered

[4] Shortcuts list collected in project overview

[5] life time free components listed in About window

1.205 2020-10-10

[1] Panel section completed in help manual

[2] Project details page in backstage added

1.206 2020-10-09

[1] TC1005 and IntrepidCS now support CAN Transmit API Sync. operation

[2] Help Manual updated, RBS and C Code Editor chapters completed

1.207 2020-10-08

- [1] CAN RBS (Remaining Bus Simulation) API added in automation
- [2] example added: RBSInExe.py, control RBS in python
- [3] example added: CAN Remaining Bus Simulation Scripting.T7z

1.208 2020-10-07

- [1] CAN RBS API added in mini program, TSMaster.dll
- [2] CAN online replay API added in mini program

1.209 2020-10-06

- [1] Test system demo added

1.210 2020-10-05

- [1] CAN database message layout chart added
- [2] Demo added: “how to use preTx event to implement checksum and rolling counter gracefully”
- [3] Measurement window “auto start” feature can now be quickly checked on right-top of window area
- [4] Panel controls can now be copied, pasted, moved, aligned, arranged by multiple selection
- [5] Title text added in LED control in panel

1.211 2020-10-01

- [1] UI: Application button added
- [2] Credits added

1.212 2020-09-29

[1] C Sharp SDK samples added

1.213 2020-09-28

[1] Panel UI completed, user can associate signals and monitor, manipulate signals

1.214 2020-09-23

[1] Graphics now supports y axis auto scaling

[2] PEAK auto reset on bus off feature added

[3] Graphics now supports y axis mouse wheel zooming

1.215 2020-09-18

Example projects added, which can be found in “bin\Data\Demo\Projects”

1.216 2020-09-14

TSMaster beta version update supported

TSMaster can be installed in user mode

1.217 2020-09-03

Documents added.

1.218 2020-08-31

System variable feature supported. System variables can be accessed in mini program, graphics and variable management window.

1.219 2020-08-15

[1] Measurement Setup window implemented.

[2] Measurement filter window implemented.

1.220 2020-08-03

[1] new project configuration now supports template

[2] Graphics now supports split view and value table in Y axis

[3] IntrepidCS HSCAN devices supported:

- NEODEVICE_BLUE
- NEODEVICE_ECU_AVB
- NEODEVICE_DW_VCAN
- NEODEVICE_RADGIGALOG
- NEODEVICE_FIRE
- NEODEVICE_VCAN3
- NEODEVICE_RED
- NEODEVICE_ECU
- NEODEVICE_OBD2_PRO
- NEODEVICE_PLASMA
- NEODEVICE_ION
- NEODEVICE_VCAN44
- NEODEVICE_VCAN42
- NEODEVICE_FIRE2
- NEODEVICE_RADGALAXY
- NEODEVICE_RADSTAR2
- NEODEVICE_VIVIDCAN
- NEODEVICE_OBD2_SIM

1.221 2020-07-27

ZLG CAN devices supported:

- USBCAN-8E-U
- USBCAN-4E-U
- USBCAN-2E-U
- USBCAN-E-U
- USBCAN-I
- USBCAN-II
- USBCAN2A

■ USBCAN-E-mini

1.222 2020-07-21

Kvaser CAN devices supported.

1.223 2020-07-18

PEAK USB CAN devices supported.

1.224 2020-07-13

Automation API for online replay implemented.

1.225 2020-07-08

Online replay feature added, which is capable of replaying multiple log files according to their own replay settings.

1.226 2020-06-23

TSMaster in-process server "comTSMaster.dll" is functional. Please check the demo "TestCOMTSMaster.py" under "bin\Data\Demo\Automation\InProcess\".

TSMaster out-of-process server "TSMaster.exe" is functional. Please check the demo "TestTSMaster.py" under "bin\Data\Demo\Automation\OutOfProcess\".

1.227 2020-06-10

[1] Test system feature added, which enables the user to create own test system to perform test cases automatically and creating test reports freely.

[2] Mini program library feature added, mini program can now be used as a library by other mini programs. This is useful for test cases and automation scripts design with

test plugin support.

1.228 2020-05-23

CAN and LIN signals can be added to Graphics and Meter windows from CAN or LIN Trace windows by popup menu.

1.229 2020-05-20

Matlab automation window added, which enables the user:

[1] quick find variables in base workspace, plot variables

[2] convert existing C code to pure stateflow, to meet the requirements of stateflow programming guide, the C code should be implemented only using “if” and “else”, other grammars of C code are not supported.

[3] quick add subsystems and charts using known inputs and outputs

1.230 2020-05-18

Magnetic form feature added.

1.231 2020-05-15

“CAN Transmit Window” and “CAN Trace Window” are deleted permanently in future release, use “CAN / CAN FD Transmit Window” and “CAN / CAN FD Trace Window” instead.

1.232 2020-05-12

Firmware version and date of TS USB device are now displayed in TS Channel Mapping window.

1.233 2020-05-11

CAN FD error frame info display of XL devices.

Comment display added under each meter object.

1.234 2020-05-08

CAN databases supported in TS Mini Program.

1.235 2020-05-03

TS Mini Program with C code support released, which can be found in "Simulation" ribbon tab.

1.236 2020-04-04

Turbo mode is added into hardware settings tab. Checking this option will minimize all hardware channel latencies at the expense of consuming more CPU usage. Users who concern very much for hardware performance are recommended to check this option.

1.237 2020-03-26

CAN RBS feature added

1.238 2020-03-24

Max CAN, LIN channel count set to 32

Bug Fixes

1.1 2021-01-15

- [1] Bug fix: libTSH transmit frames lost issue

1.2 2020-12-03

- [1] Bug fix: trace filter for J1939 id
- [2] Bug fix: panel selector crash after signal selected

1.3 2020-11-21

- [1] bug fix: RBS UI refresh
- [2] bug fix: Graphics signal value table display

1.4 2020-11-17

- [1] Bug fix: J1939 PGN display in Trace
- [2] Bug fix: read fd error frame in blf
- [3] Bug fix: write log file with TC1005
- [4] Bug fix: CAN database filter with msg identifier
- [5] Bug fix: liblog.dll not found, please use latest TSMaster.dll in API

1.5 2020-10-07

- [1] offline replay range playback incorrect behavior
- [2] graphics y axis scaling incorrect behavior

1.6 2020-10-06

[1] extended frame conversion from asc to blf

1.7 2020-09-24

[1] Panel crash on startup fixed

[2] Replay hang when frame count > 100000

[3] bug fix for dbc signal calculation with factor < 0

1.8 2020-09-16

Transmit and display problems of signals with mixed value table and factor and offset values.

1.9 2020-09-01

ZLG baudrate config now supports devices except "E" series.

1.10 2020-05-15

Key trigger of CAN message transmission is not functional.

Ordering of CAN message transmission column is now persistent.

Visibility of CAN message transmission column is now persistent.

1.11 2020-05-12

Classical CAN transmission in XL may cause crash.

CAN and LIN databases channel selection treeview display additional "+" button when all child nodes are removed.

Physical step CAN transmit cannot be modified.

1.12 2020-05-11

Display error of TOSUN icon in 150% text size mode in win10.

1.13 2020-03-24

LIN message “Active” property cannot be modified after deploy.