

e² studio 2022-01 (R20220106-1410)

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Release Note

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Introduction

This document outlines the device support, new features added in 2022-01, fixed issues and open issues in e² studio 2022-01.

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1. Product Information

1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Windows 8.1 64-bit
- Windows 10 64-bit

In addition, another official product build is available for Linux. This version supports:

- Ubuntu 20.04 LTS

No other Linux distributions are officially supported by e² studio.

e² studio now runs on Java 11 & does not support older Java versions.

1.1.1 Windows 64-bit product version

Please note that 2020-04 and later versions are 64-bit product build versions of the tool.

We would like to state that the workspaces and projects from 7.x versions of e² studio are fully compatible with 2021-04.

When opening a workspace from 7.x you will be shown a warning, and this is standard Eclipse behavior. This is shown because some metadata in the workspace can change between versions so a workspace will not always work with older versions of the tool.

- Projects are forward & backward compatible,
- Workspaces work when upgrading but it is not guaranteed to 100% work if you return the workspace to 7.8.

The switch to 64-bit has unfortunately meant that some functions have now been deprecated from the tooling due to this move for the base platform. The removed functionality is listed below:

- HEW Project Convertor
- Renesas RTOS views
- Mylyn integration
- Subversion integration

If you need this functionality then please remain on e² studio 7.8.

Linux tools are now only available in the Linux host version of e² studio.

1.1.2 System requirements

For Windows 64-bit version

- IBM PC/AT compatible
 - Windows® 10 (64-bit version)
 - Windows® 8.1 (64-bit version)
- Memory capacity: We recommend 8 GB or more. At least 4 GB.
- Capacity of hard disk: At least 2 GB of free space.
- Display: Graphics resolution should be at least 1024 x 768, and the mode should display at least 65,536 colors.
- Interface: USB 2.0
- Microsoft Visual C++ 2010 SP1 runtime library ^{*1}
- Microsoft Visual C++ 2015-2019 runtime library ^{*1}

^{*1}1. This software will be installed at the same time as the e² studio.

For Linux

- IBM PC/AT compatible
 - Ubuntu 20.04 LTS Desktop (64-bit version)
- Processor: 64-bit architecture (CPUs that have 32-bit architecture, are not supported.), 2 GHz or faster, CPU has dual cores or more
- Memory capacity: We recommend 2 GB or more.
- Capacity of hard disk: At least 2 GB of free space.

1.1.3 Linux version

The Linux product version of e² studio for Linux is based on the same content as the Windows release.

Therefore, documents of e² studio will be helpful for common usages. There are some differences, the Linux version only supports the RA and RZ device families.

For information on how to install the Linux product please refer to FAQ in below URL.

English : <https://en-support.renesas.com/knowledgeBase/19934358>

Japanese : <https://ja-support.renesas.com/knowledgeBase/19934356>

| Device Family | Windows Product Support | Linux Product Support |
|---------------|---------------------------------------|-----------------------|
| EC-1 | Yes | No |
| RA | Yes | Yes |
| RE | Yes | No |
| RH850 | Yes | No |
| RL78 | Yes | No |
| RX | Yes | No |
| RZ | Yes (No RZ/G Linux Platform Tools) | Yes |
| Synergy | Yes | No |

1.2 Supported Toolchains – Windows Hosted

The following toolchains are supported in e² studio.

| | Renesas | GNU Arm Embedded (*2) | Renesas GCC/ GNURZ/ARM (*3) | IAR (*4) | Green Hills (*5) |
|---------------|-------------|-----------------------|-----------------------------|----------|------------------|
| Device Family | RL78 | Yes (CC-RL) | No | Yes | No |
| | RX | Yes (CC-RX) | No | Yes | No |
| | RH850 | No | No | Yes | Yes |
| | RZ/ARM | No | No (*1) | Yes | No |
| | Synergy/ARM | No | Yes | No | Yes |
| | RA/ARM | No | Yes | No | Yes |
| | RE/ARM | No | Yes | No | Yes |

Note:

*1: Project converter is available to convert from GNUARM RZ/none to GNU ARM Embedded toolchain.

*2: The GCC toolchains for RZ Family and Renesas Synergy™ are distributed via Arm Developer at <https://developer.arm.com/open-source/gnu-toolchain/gnu-rm> or Launchpad.net at: <https://launchpad.net/gcc-arm-embedded>. They are also available using the “Additional components” page in the e² studio installer. Supported ARM GCC versions vary from device family to device family. Please see the following table for more information:

| Device Family | GCC distribution and version |
|----------------------|------------------------------|
| RZ/A1, A2 | 6.3.1 (2017 q2) |
| RZ/G1, G2 (Cortex-A) | Linaro 7.3.1 |
| RZ/G2 (Cortex-M33) | FSP 1.0.0: 9.2.1 (2019 q4) |
| Synergy | SSP 1.6.x: 7.2.1 |
| | SSP 1.7.x: 7.2.1 |
| | SSP 2.x 9.3.1 |
| RA | FSP 3.5.0: 9.3.1 |
| RE | RE SDK 1.1.0: 6.3.1(2017 q2) |

*3: Legacy GNUARM toolchains are available from <https://llvm-gcc-renesas.com/>. In addition, the latest RX and RL78 Renesas GCC toolchains are available from this website. Also LLVM for RL78 is available from <https://llvm-gcc-renesas.com/>.

*4: The IAR toolchain plugins are available via the “Help”->” IAR Embedded Workbench plugin manager” menu in e² studio. These Eclipse plugins are provided by IAR and are not supported by Renesas.

*5: The Green Hills toolchain plugins are available within the e² studio product. These plugins are provided by Green Hills and are not supported by Renesas.

1.3 Supported Toolchains – Linux Hosted

The following toolchains are supported in e² studio:

- Linaro GCC – tested version 7.3.1-201805
- GNU Arm Embedded – tested version 7.3.1.2018.06022
- GNU Tools for ARM Embedded Processors for RA 9.3.1.20200408 (2020-q2-update)

2. Device Support

2.1 Project Generator Support – Windows Hosted

Note: The Renesas SH device family is no longer supported in e² studio.

| Family | Group | Devices |
|--------|-------|--|
| EC-1 | EC-1 | R9A06G043 |
| | RA2A1 | R7FA2A1AB2CBT, R7FA2A1AB3CFJ, R7FA2A1AB3CFM, R7FA2A1AB3CNE, R7FA2A1AB3CNF |
| | RA2E1 | R7FA2E1A52DBV, R7FA2E1A52DFJ, R7FA2E1A52DFL, R7FA2E1A52DLM, R7FA2E1A52DNE, R7FA2E1A52DNH, R7FA2E1A53CBV, R7FA2E1A53CFJ, R7FA2E1A53CFL, R7FA2E1A53CLM, R7FA2E1A53CNE, R7FA2E1A53CNH, R7FA2E1A72DBU, R7FA2E1A72DBV, R7FA2E1A72DFJ, R7FA2E1A72DFK, R7FA2E1A72DFL, R7FA2E1A72DFM, R7FA2E1A72DLM, R7FA2E1A72DNE, R7FA2E1A72DNH, R7FA2E1A73CBU, R7FA2E1A73CBV, R7FA2E1A73CFJ, R7FA2E1A73CFK, R7FA2E1A73CFL, R7FA2E1A73CFM, R7FA2E1A73CLM, R7FA2E1A73CNE, R7FA2E1A73CNH, R7FA2E1A82DBU, R7FA2E1A82DBV, R7FA2E1A82DFJ, R7FA2E1A82DFK, R7FA2E1A82DFL, R7FA2E1A82DFM, R7FA2E1A82DLM, R7FA2E1A82DNE, R7FA2E1A82DNH, R7FA2E1A83CBU, R7FA2E1A83CBV, R7FA2E1A83CFJ, R7FA2E1A83CFK, R7FA2E1A83CFL, R7FA2E1A83CFM, R7FA2E1A83CLM, R7FA2E1A83CNE, R7FA2E1A83CNH, R7FA2E1A92DBU, R7FA2E1A92DBV, R7FA2E1A92DFJ, R7FA2E1A92DFK, R7FA2E1A92DFL, R7FA2E1A92DFM, R7FA2E1A92DLM, R7FA2E1A92DNE, R7FA2E1A92DNH, R7FA2E1A93CBU, R7FA2E1A93CBV, R7FA2E1A93CFJ, R7FA2E1A93CFK, R7FA2E1A93CFL, R7FA2E1A93CFM, R7FA2E1A93CLM, R7FA2E1A93CNE, R7FA2E1A93CNH |
| | RA2E2 | R7FA2E2A32DBW, R7FA2E2A32DNJ, R7FA2E2A32DNK, R7FA2E2A33CBW, R7FA2E2A33CNJ, R7FA2E2A33CNK, R7FA2E2A34CBW, R7FA2E2A34CNJ, R7FA2E2A34CNK, R7FA2E2A52DBW, R7FA2E2A52DNJ, R7FA2E2A52DNK, R7FA2E2A53CBW, R7FA2E2A53CNJ, R7FA2E2A53CNK, R7FA2E2A54CBW, R7FA2E2A54CNJ, R7FA2E2A54CNK, R7FA2E2A72DBW, R7FA2E2A72DNJ, R7FA2E2A72DNK, R7FA2E2A73CBW, R7FA2E2A73CNJ, R7FA2E2A73CNK, R7FA2E2A74CBW, R7FA2E2A74CNJ, R7FA2E2A74CNK |
| | RA2L1 | R7FA2L1A92DFL, R7FA2L1A92DFM, R7FA2L1A92DFN, R7FA2L1A92DFP, R7FA2L1A92DNE, R7FA2L1A93CFL, R7FA2L1A93CFM, R7FA2L1A93CFN, R7FA2L1A93CFP, R7FA2L1A93CNE, R7FA2L1AB2DFL, R7FA2L1AB2DFM, R7FA2L1AB2DFN, R7FA2L1AB2DFP, R7FA2L1AB2DNE, R7FA2L1AB3CFL, R7FA2L1AB3CFM, R7FA2L1AB3CFN, R7FA2L1AB3CFP, R7FA2L1AB3CNE |
| | RA4E1 | R7FA4E10B2CFM, R7FA4E10B2CNE, R7FA4E10D2CFM, R7FA4E10D2CNE |
| | RA4M1 | R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF |
| | RA4M2 | R7FA4M2AB3CFL, R7FA4M2AB3CFM, R7FA4M2AB3CFP, R7FA4M2AB3CNE, R7FA4M2AC3CFL, R7FA4M2AC3CFM, R7FA4M2AC3CFP, R7FA4M2AC3CNE, R7FA4M2AD3CFL, R7FA4M2AD3CFM, R7FA4M2AD3CFP, R7FA4M2AD3CNE |
| | RA4M3 | R7FA4M3AD3CFB, R7FA4M3AE3CFB, R7FA4M3AE3CFM, R7FA4M3AE3CFP, R7FA4M3AF3CFB, R7FA4M3AF3CFM, R7FA4M3AF3CFP |

| | | |
|-------|-------------|--|
| | RA4W1 | R7FA4W1AD2CNG |
| | RA6E1 | R7FA6E10D2CFM, R7FA6E10D2CFP, R7FA6E10D2CNE, R7FA6E10F2CFM, R7FA6E10F2CFP, R7FA6E10F2CNE |
| | RA6M1 | R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP, R7FA6M1AD3CLJ, R7FA6M1AD3CNB |
| | RA6M2 | R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP, R7FA6M2AD3CLK, R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP, R7FA6M2AF3CLK |
| | RA6M3 | R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CBG, R7FA6M3AF3CFB, R7FA6M3AF3CFC, R7FA6M3AF3CFP, R7FA6M3AF3CLK, R7FA6M3AH2CBG, R7FA6M3AH2CLK, R7FA6M3AH3CBG, R7FA6M3AH3CFB, R7FA6M3AH3CFC, R7FA6M3AH3CFP, R7FA6M3AH3CLK |
| | RA6M4 | R7FA6M4AD3CFB, R7FA6M4AD3CFM, R7FA6M4AD3CFP, R7FA6M4AE3CFB, R7FA6M4AE3CFM, R7FA6M4AE3CFP, R7FA6M4AF3CFB, R7FA6M4AF3CFM, R7FA6M4AF3CFP |
| | RA6M5 | R7FA6M5AG2CBG, R7FA6M5AG3CFB, R7FA6M5AG3CFC, R7FA6M5AG3CFP, R7FA6M5AH2CBG, R7FA6M5AH3CFB, R7FA6M5AH3CFC, R7FA6M5AH3CFP, R7FA6M5BF2CBG, R7FA6M5BF3CFB, R7FA6M5BF3CFC, R7FA6M5BF3CFP, R7FA6M5BG2CBG, R7FA6M5BG3CFB, R7FA6M5BG3CFC, R7FA6M5BG3CFP, R7FA6M5BH2CBG, R7FA6M5BH3CFB, R7FA6M5BH3CFC, R7FA6M5BH3CFP |
| | RA6T1 | R7FA6T1AB3CFM, R7FA6T1AB3CFP, R7FA6T1AD3CFM, R7FA6T1AD3CFP |
| | RA6T2 | R7FA6T2AB3CFL, R7FA6T2AB3CFM, R7FA6T2AB3CFP, R7FA6T2AB3CNB, R7FA6T2AB3CNE, R7FA6T2AD3CFL, R7FA6T2AD3CFM, R7FA6T2AD3CFP, R7FA6T2AD3CNB, R7FA6T2AD3CNE, R7FA6T2BB3CFL, R7FA6T2BB3CFM, R7FA6T2BB3CFP, R7FA6T2BB3CNB, R7FA6T2BB3CNE, R7FA6T2BD3CFL, R7FA6T2BD3CFM, R7FA6T2BD3CFP, R7FA6T2BD3CNB, R7FA6T2BD3CNE |
| | RE01B | R7F0E01BD2DNB |
| RE | RE01_1500KB | R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN |
| | RE01_256KB | R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG |
| | C1H | R7F701260, R7F701270, (Debug Support Only) |
| | C1M | R7F701263, R7F701271, (Debug Support Only) |
| | C1M-A1 | R7F701278, (Debug Support Only) |
| | C1M-A2 | R7F701275, (Debug Support Only) |
| RH850 | D1L1 | R7F701401, R7F701421, (Debug Support Only) |
| | D1L2 | R7F701402, R7F701422, (Debug Support Only) |
| | D1M1 | R7F701404, R7F701405, (Debug Support Only) |
| | D1M1-V2 | R7F701442, R7F701462, (Debug Support Only) |
| | D1M2 | R7F701408, R7F701410, R7F701428, R7F701430, (Debug Support Only) |
| | E1L | R7F701201, R7F701205, (Debug Support Only) |

| | |
|--------|--|
| E1M-S | R7F701202, R7F701204, (Debug Support Only) |
| E1M-S2 | R7F701215, R7F701216, (Debug Support Only) |
| - | R7F701Z05, R7F701Z06, R7F701Z07, (Debug Support Only) |
| F1H | R7F701501, R7F701502, R7F701503, R7F701506, R7F701507, R7F701508, R7F701511, R7F701512, R7F701513, (Debug Support Only) |
| - | R7F701521, R7F701522, R7F701524, R7F701525, (Debug Support Only) |
| F1K | R7F701542, R7F701543, R7F701546, R7F701547, R7F701557, R7F701560, R7F701561, R7F701562, R7F701563, R7F701566, R7F701567, R7F701577, R7F701580, R7F701581, R7F701582, R7F701583, R7F701586, R7F701587, R7F701597, R7F701602, R7F701603, R7F701610, R7F701611, R7F701612, R7F701613, R7F701620, R7F701621, R7F701622, R7F701623, (Debug Support Only) |
| F1KH | R7F701708, R7F701709, R7F701710, R7F701711, R7F701714, R7F701715, (Debug Support Only) |
| F1KM | R7F701644, R7F701645, R7F701646, R7F701647, R7F701648, R7F701649, R7F701650, R7F701651, R7F701652, R7F701653, R7F701684, R7F701685, R7F701686, R7F701687, R7F701688, R7F701689, R7F701690, R7F701691, R7F701692, R7F701693, R7F701694, R7F701695, R7F701760, R7F701762, R7F701764, (Debug Support Only) |
| F1L | R7F701002xAFP, R7F701003xAFP, R7F701006xAFP, R7F701007xAFP, R7F701008xAFP, R7F701009xAFP, R7F701010xAFP, R7F701011xAFP, R7F701012xAFP, R7F701013xAFP, R7F701014xAFP, R7F701015xAFP, R7F701016xAFP, R7F701017xAFP, R7F701018xAFP, R7F701019xAFP, R7F701020xAFP, R7F701021xAFP, R7F701022xAFP, R7F701023xAFP, R7F701024xAFP, R7F701025xAFP, R7F701026xAFP, R7F701027xAFP, R7F701028xAFP, R7F701029xAFP, R7F701030xAFP, R7F701032xAFP, R7F701033xAFP, R7F701034xAFP, R7F701040, R7F701041, R7F701042, R7F701043, R7F701044, R7F701045, R7F701046, R7F701047, R7F701048, R7F701049, R7F701050, R7F701051, R7F701052, R7F701053, R7F701054, R7F701055, R7F701056, R7F701057, (Debug Support Only) |
| F1M | R7F701544, R7F701545, R7F701548, R7F701549, R7F701552, R7F701553, R7F701564, R7F701565, R7F701568, R7F701569, R7F701572, R7F701573, (Debug Support Only) |
| P1H-C | R7F701370AEABG, R7F701371EABG, R7F701372EABG, R7F701396EABG, (Debug Support Only) |
| P1L-C | R7F701388, R7F701389, R7F701390, R7F701391, (Debug Support Only) |
| P1M | R7F701304, R7F701305, R7F701310, R7F701311, R7F701312, R7F701313, R7F701314, R7F701315, R7F701318, R7F701319, R7F701320, R7F701321, R7F701322, R7F701323, (Debug Support Only) |
| P1M-C | R7F701373xABG, R7F701374xAFP, R7F701397xABG, (Debug Support Only) |
| P1M-E | R7F701375, R7F701376, R7F701377, R7F701378, R7F701379, R7F701380, R7F701381, R7F701382, R7F701383, R7F701384, R7F701385, R7F701386, (Debug Support Only) |
| - | R7F701060xAFP, R7F701062xAFP, R7F701064xAFP, R7F701065xAFP, R7F701067xAFP, R7F701069xAFP, R7F701071xAFP, (Debug Support Only) |
| - | R7F702Z19A, R7F702Z19B, (Debug Support Only) |

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| U2A16 | R7F702300, R7F702300A, (Debug Support Only) |
| U2A6 | R7F702302, (Debug Support Only) |
| U2A8 | R7F702301, R7F702301A, (Debug Support Only) |
| D1A | R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, R5F10DPK, R5F10DPL, R5F10DSJ, R5F10DSK, R5F10DSL, R5F10TPJ |
| F12 | R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA, R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC, R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE, R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE |
| F13 | R5F10A6A, R5F10A6C, R5F10A6D, R5F10A6E, R5F10AAA, R5F10AAC, R5F10AAD, R5F10AAE, R5F10ABA, R5F10ABC, R5F10ABD, R5F10ABE, R5F10AGA, R5F10AGC, R5F10AGD, R5F10AGE, R5F10AGF, R5F10AGG, R5F10ALC, R5F10ALD, R5F10ALE, R5F10ALF, R5F10ALG, R5F10AME, R5F10AMF, R5F10AMG, R5F10BAC, R5F10BAD, R5F10BAE, R5F10BAF, R5F10BAG, R5F10BBC, R5F10BBD, R5F10BBE, R5F10BBF, R5F10BBG, R5F10BGC, R5F10BGD, R5F10BGE, R5F10BGF, R5F10BGG, R5F10BLC, R5F10BLD, R5F10BLE, R5F10BLF, R5F10BLG, R5F10BME, R5F10BMF, R5F10BMG |
| RL78 | R5F10PAD, R5F10PAE, R5F10PBD, R5F10PBE, R5F10PGD, R5F10PGE, R5F10PGF, R5F10PGG, R5F10PGH, R5F10PGJ, R5F10PLE, R5F10PLF, R5F10PLG, R5F10PLH, R5F10PLJ, R5F10PME, R5F10PMF, R5F10PMG, R5F10PMH, R5F10PMJ, R5F10PPE, R5F10PPF, R5F10PPG, R5F10PPH, R5F10PPJ |
| F15 | R5F113GK, R5F113GL, R5F113LK, R5F113LL, R5F113MK, R5F113ML, R5F113PG, R5F113PH, R5F113PJ, R5F113PK, R5F113PL, R5F113TG, R5F113TH, R5F113TJ, R5F113TK, R5F113TL |
| F1A | R5F114GC, R5F114GD, R5F114GE, R5F114GF, R5F114GG |
| F1E | R5F11KLE, R5F11KLF, R5F11KLG, R5F11LLE, R5F11LLF, R5F11LLG |
| F24 | R7F124FBJ, R7F124FGJ, R7F124FLJ, R7F124FMJ, R7F124FPJ, (Debug Support Only) |
| G10 | R5F10Y14, R5F10Y16, R5F10Y17, R5F10Y44, R5F10Y46, R5F10Y47 |
| G11 | R5F1051A, R5F1054A, R5F1056A, R5F1057A, R5F1058A |
| G12 | R5F10266, R5F10267, R5F10268, R5F10269, R5F1026A, R5F10277, R5F10278, R5F10279, R5F1027A, R5F102A7, R5F102A8, R5F102A9, R5F102AA, R5F10366, R5F10367, R5F10368, R5F10369, R5F1036A, R5F10377, R5F10378, R5F10379, R5F1037A, R5F103A7, R5F103A8, R5F103A9, R5F103AA |

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| | R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100AF, R5F100AG, R5F100BA, R5F100BC, R5F100BD, R5F100BE, R5F100BF, R5F100BG, R5F100CA, R5F100CC, R5F100CD, R5F100CE, R5F100CF, R5F100CG, R5F100EA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG, R5F100EH, R5F100FA, R5F100FC, R5F100FD, R5F100FE, R5F100FF, R5F100FG, R5F100FH, R5F100FJ, R5F100FK, R5F100FL, R5F100GA, R5F100GC, R5F100GD, R5F100GE, R5F100GF, R5F100GG, R5F100GH, R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE, R5F100JF, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL, R5F100LC, R5F100LD, R5F100LE, R5F100LF, R5F100LG, R5F100LH, R5F100LJ, R5F100LK, R5F100LL, R5F100MF, R5F100MG, R5F100MH, R5F100MJ, R5F100MK, R5F100ML, R5F100PF, R5F100PG, R5F100PH, R5F100PJ, R5F100PK, R5F100PL, R5F100SH, R5F100SJ, R5F100SK, R5F100SL, R5F1016A, R5F1016C, R5F1016D, R5F1016E, R5F1017A, R5F1017C, R5F1017D, R5F1017E, R5F1018A, R5F1018C, R5F1018D, R5F1018E, R5F101AA, R5F101AC, R5F101AD, R5F101AE, R5F101AF, R5F101AG, R5F101BA, R5F101BC, R5F101BD, R5F101BE, R5F101BF, R5F101BG, R5F101CA, R5F101CC, R5F101CD, R5F101CE, R5F101CF, R5F101CG, R5F101EA, R5F101EC, R5F101ED, R5F101EE, R5F101EF, R5F101EG, R5F101EH, R5F101FA, R5F101FC, R5F101FD, R5F101FE, R5F101FF, R5F101FG, R5F101FH, R5F101FJ, R5F101FK, R5F101FL, R5F101GA, R5F101GC, R5F101GD, R5F101GE, R5F101GF, R5F101GG, R5F101GH, R5F101GJ, R5F101GK, R5F101GL, R5F101JC, R5F101JD, R5F101JE, R5F101JF, R5F101JG, R5F101JH, R5F101JJ, R5F101JK, R5F101JL, R5F101LC, R5F101LD, R5F101LE, R5F101LF, R5F101LG, R5F101LH, R5F101LJ, R5F101LK, R5F101LL, R5F101MF, R5F101MG, R5F101MH, R5F101MJ, R5F101MK, R5F101ML, R5F101PF, R5F101PG, R5F101PH, R5F101PJ, R5F101PK, R5F101PL, R5F101SH, R5F101SJ, R5F101SK, R5F101SL |
| G13 | |
| G13A | R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL, R5F140PK, R5F140PL |
| | R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG, R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG, R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG, R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG, R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF, R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD, R5F104GE, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF, R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF, R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF, R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL |
| G14 | |
| G1A | R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10E8A, R5F10EBC, R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, R5F10ELC, R5F10ELD, R5F10ELE |
| G1C | R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC |
| G1D | R5F11AGG, R5F11AGH, R5F11AGJ |
| G1E | R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME |

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| | R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE |
| G1F | |
| G1G | R5F11EA8, R5F11EAA, R5F11EB8, R5F11EBA, R5F11EF8, R5F11EFA |
| G1H | R5F11FLJ, R5F11FLK, R5F11FLL |
| G1K | R5F11VBG, R5F11VLG |
| G1M | R5F11W67, R5F11W68 |
| G1N | R5F11Y67, R5F11Y68 |
| G1P | R5F11Z7A, R5F11ZBA |
| | R7F100GAF, R7F100GAG, R7F100GAH, R7F100GAJ, R7F100GBF, R7F100GBG, R7F100GBH, R7F100GBJ, R7F100GCF, R7F100GCG, R7F100GCH, R7F100GCJ, R7F100GEF, R7F100GEG, R7F100GEH, R7F100GEJ, R7F100GFF, R7F100GFG, R7F100GFH, R7F100GFJ, R7F100GFK, R7F100GFL, R7F100GFN, R7F100GGF, R7F100GGG, R7F100GGH, R7F100GGJ, R7F100GGK, R7F100GGL, R7F100GGN, R7F100GJF, R7F100GJG, R7F100GJH, R7F100GJJ, R7F100GJK, R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLG, R7F100GLH, R7F100GLJ, R7F100GLK, R7F100GLL, R7F100GLN, R7F100GMG, R7F100GMH, R7F100GMJ, R7F100GMK, R7F100GML, R7F100GMN, R7F100GPG, R7F100GPH, R7F100GPJ, R7F100GPK, R7F100GPL, R7F100GPN, R7F100GSJ, R7F100GSK, R7F100GSL, R7F100GSN, (Debug Support Only) |
| G23 | |
| | R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG |
| H1D | |
| I1A | R5F1076C, R5F107AC, R5F107AE, R5F107DE |
| I1B | R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG |
| | R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, R5F10NML, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL |
| I1C | |
| I1C-2 | R5F11TLE, R5F11TLG |
| | R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC |
| I1D | |
| I1E | R5F11CBC, R5F11CCC |
| | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC |
| L12 | |
| | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG |
| L13 | |
| | R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG |
| L1A | |
| | R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110NE, R5F110NF, R5F110NG, R5F110NH, R5F110NJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111NE, R5F111NF, R5F111NG, R5F111NH, R5F111NJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ |
| L1C | |
| 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J |
| | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J |
| RX | |
| 111 | |
| 113 | R5F51135, R5F51136, R5F51137, R5F51138 |

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| 130 | R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308 |
| 13T | R5F513T3, R5F513T5 |
| 140 | R5F51403 |
| 210 | R5F52103, R5F52104, R5F52105, R5F52106, R5F52107, R5F52108, R5F5210A, R5F5210B |
| 21A | R5F521A6, R5F521A7, R5F521A8 |
| 220 | R5F52201, R5F52203, R5F52205, R5F52206 |
| 230 | R5F52305, R5F52306 |
| 231 | R5F52315, R5F52316, R5F52317, R5F52318 |
| 23E-A | R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S |
| 23T | R5F523T3, R5F523T5 |
| 23W | R5F523W7, R5F523W8 |
| 24T | R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE |
| 24U | R5F524UB, R5F524UC, R5F524UE |
| 610 | R5F56104, R5F56106, R5F56107, R5F56108 |
| 621 | R5F56216, R5F56217, R5F56218 |
| 62G | R5F562G7, R5F562GA |
| 62N | R5F562N7, R5F562N8 |
| 62T | R5F562T6, R5F562T7, R5F562TA |
| 630 | R5F56307, R5F56308, R5F5630A, R5F5630B, R5F5630D, R5F5630E |
| 631 | R5F56316, R5F56317, R5F56318, R5F5631A, R5F5631B, R5F5631D, R5F5631E, R5F5631F, R5F5631G, R5F5631J, R5F5631K, R5F5631M, R5F5631MF, R5F5631N, R5F5631P, R5F5631PF, R5F5631W, R5F5631Y, R5S56310 |
| 634 | R5F5634B, R5F5634B_5V, R5F5634D, R5F5634D_5V, R5F5634E, R5F5634E_5V |
| 63N | R5F563NA, R5F563NB, R5F563ND, R5F563NE, R5F563NF, R5F563NK, R5F563NW, R5F563NY |
| 63T | R5F563T4, R5F563T5, R5F563T6, R5F563TB, R5F563TB_5V, R5F563TC, R5F563TC_5V, R5F563TE, R5F563TE_5V |
| 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML |
| 651 | R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C_DUAL, R5F5651E, R5F5651E_DUAL R5F56519DMB, R5F5651EDMB, R5F5651EDMB_DUAL, (Debug Support Only) |
| 65N | R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL R5F565N9DMB, R5F565NEDMB, R5F565NEDMB_DUAL, (Debug Support Only) |
| 66N | R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL |
| 66T | R5F566TA, R5F566TAXXFL, R5F566TE, R5F566TEXXFL, R5F566TF, R5F566TK |
| 671 | R5F56719, R5F56719_DUAL, R5F5671C, R5F5671C_DUAL, R5F5671E, R5F5671E_DUAL |

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| | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML |
| | 72M | R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL |
| | 72N | R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL |
| | 72T | R5F572TF, R5F572TK |
| | - | R0E5571MLDMBXX, (Debug Support Only) |
| | A1 | R7S721000, R7S721000_DualSPI, R7S721001, R7S721001_DualSPI, R7S721010, R7S721010_DualSPI, R7S721011, R7S721011_DualSPI, R7S721020, R7S721020_DualSPI, R7S721021, R7S721021_DualSPI, R7S721030, R7S721030_DualSPI, R7S721031, R7S721031_DualSPI, R7S721034, R7S721034_DualSPI |
| | A2 | R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058 |
| | G1E | R8A77450, R8A77450_Core1, (Debug Support Only) |
| | G1M | R8A77430, R8A77430_Core1, (Debug Support Only) |
| RZ | T1 | R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910015_M3, R7S910016, R7S910016_M3, R7S910017, R7S910017_M3, R7S910018, R7S910018_M3, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910115_M3, R7S910116, R7S910116_M3, R7S910117, R7S910117_M3, R7S910118, R7S910118_M3, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136 |
| | T1-M | R7S910020, R7S910021, R7S910022, R7S910023, R7S910120, R7S910121, R7S910122, R7S910123 |
| | G2L | R9A07G044C12, R9A07G044L13, R9A07G044L14, R9A07G044C22, R9A07G044L23, R9A07G044L24 |
| | V2L | R9A07G054L13, R9A07G054L14, R9A07G054L23, R9A07G054L24 |
| | S1JA | R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ |
| | S124 | R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF |
| | S128 | R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG |
| | S3A1 | R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB |
| Synergy | S3A3 | R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB |
| | S3A6 | R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF |
| | S3A7 | R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB |
| | S5D3 | R7FS5D37A2A01CLJ, R7FS5D37A3A01CFP, R7FS5D37A3A01CFM, R7FS5D37A3A01CNB |

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| S5D5 | R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP |
| S5D9 | R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP |
| S7G2 | R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27G2A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK, R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP |

2.2 Code Generator Support – Windows Host

| Family | Group | Devices |
|--------|-------|--|
| RL78 | D1A | R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, R5F10TPJ |
| | F12 | R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA, R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC, R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE, R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE |
| | F13 | R5F10A6A, R5F10A6C, R5F10A6D, R5F10A6E, R5F10AAA, R5F10AAC, R5F10AAD, R5F10AAE, R5F10ABA, R5F10ABC, R5F10ABD, R5F10ABE, R5F10AGA, R5F10AGC, R5F10AGD, R5F10AGE, R5F10AGF, R5F10AGG, R5F10ALC, R5F10ALD, R5F10ALE, R5F10ALF, R5F10ALG, R5F10AME, R5F10AMF, R5F10AMG, R5F10BAC, R5F10BAD, R5F10BAE, R5F10BAF, R5F10BAG, R5F10BBC, R5F10BBD, R5F10BBE, R5F10BBF, R5F10BBG, R5F10BGC, R5F10BGD, R5F10BGE, R5F10BGF, R5F10BGG, R5F10BLC, R5F10BLD, R5F10BLE, R5F10BLF, R5F10BLG, R5F10BME, R5F10BMF, R5F10BMG |
| | F14 | R5F10PAD, R5F10PAE, R5F10PBD, R5F10PBE, R5F10PGD, R5F10PGE, R5F10PGF, R5F10PGG, R5F10PGH, R5F10PGJ, R5F10PLE, R5F10PLF, R5F10PLG, R5F10PLH, R5F10PLJ, R5F10PME, R5F10PMF, R5F10PMG, R5F10PMH, R5F10PMJ, R5F10PPE, R5F10PPF, R5F10PPG, R5F10PPH, R5F10PPJ |
| | F15 | R5F113GK, R5F113GL, R5F113LK, R5F113LL, R5F113MK, R5F113ML, R5F113PG, R5F113PH, R5F113PJ, R5F113PK, R5F113PL, R5F113TG, R5F113TH, R5F113TJ, R5F113TK, R5F113TL |
| | F1E | R5F11KLE, R5F11KLF, R5F11KLG, R5F11LLE, R5F11LLF, R5F11LLG |
| | G10 | R5F10Y14, R5F10Y16, R5F10Y17, R5F10Y44, R5F10Y46, R5F10Y47 |
| | G11 | R5F1051A, R5F1054A, R5F1056A, R5F1057A, R5F1058A |
| | G12 | R5F10266, R5F10267, R5F10268, R5F10269, R5F1026A, R5F10277, R5F10278, R5F10279, R5F1027A, R5F102A7, R5F102A8, R5F102A9, R5F102AA, R5F10366, R5F10367, R5F10368, R5F10369, R5F1036A, R5F10377, R5F10378, R5F10379, R5F1037A, R5F103A7, R5F103A8, R5F103A9, R5F103AA |

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| | G1A | R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10EBA, R5F10EBC, R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, R5F10ELC, R5F10ELD, R5F10ELE |
| | G1C | R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC |
| | G1D | R5F11AGG, R5F11AGH, R5F11AGJ |
| | G1E | R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME |
| | G1F | R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE |
| | G1G | R5F11EA8, R5F11EAA, R5F11EB8, R5F11EBA, R5F11EF8, R5F11EFA |
| | G1H | R5F11FLJ, R5F11FLK, R5F11FLL |
| | H1D | R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG |
| | I1A | R5F1076C, R5F107AC, R5F107AE, R5F107DE |
| | I1B | R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG |
| | I1C | R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, R5F10NML, R5F10NML_DUAL, R5F10NPG, R5F10NPJ, R5F10NPL, R5F10NPL_DUAL |
| | I1C-2 | R5F11TLE, R5F11TLG |
| | I1D | R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC |
| | I1E | R5F11CBC, R5F11CCC |
| | L12 | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC |
| | L13 | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG |
| | L1A | R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG |
| | L1C | R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ |
| RX | 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J |
| | 111 | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J |
| | 113 | R5F51135, R5F51136, R5F51137, R5F51138 |
| | 130 | R5F51303, R5F51305 |
| | 230 | R5F52305, R5F52306 |
| | 231 | R5F52315, R5F52316, R5F52317, R5F52318 |
| | 23T | R5F523T3, R5F523T5 |
| | 24T | R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE |
| | 24U | R5F524UB, R5F524UC, R5F524UE |

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| | 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML |
| | 651 | R5F56514, R5F56517, R5F56519 |
| | 65N | R5F565N4, R5F565N7, R5F565N9 |
| | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML |
| RZ | T1 | R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910016, R7S910017, R7S910018, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910116, R7S910117, R7S910118, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136 |

2.3 Smart Configurator Support – Windows Host

| Family | Group | Devices |
|--------|-------|--|
| RL78 | G23 | R7F100GAF, R7F100GAG, R7F100GAH, R7F100GAJ, R7F100GBF, R7F100GBG, R7F100GBH, R7F100GBJ, R7F100GCF, R7F100GCG, R7F100GCH, R7F100GCJ, R7F100GEF, R7F100GEG, R7F100GEH, R7F100GEJ, R7F100GFF, R7F100GFG, R7F100GFH, R7F100GFJ, R7F100GFK, R7F100GFL, R7F100GFN, R7F100GGF, R7F100GGG, R7F100GGH, R7F100GGJ, R7F100GGK, R7F100GGL, R7F100GGN, R7F100GJF, R7F100GJG, R7F100GJH, R7F100GJJ, R7F100GJK, R7F100GJL, R7F100GJN, R7F100GLF, R7F100GLG, R7F100GLH, R7F100GLJ, R7F100GLK, R7F100GLL, R7F100GLN, R7F100GMG, R7F100GMH, R7F100GMJ, R7F100GMK, R7F100GML, R7F100GMN, R7F100GPG, R7F100GPH, R7F100GPJ, R7F100GPK, R7F100GPL, R7F100GPN, R7F100GSJ, R7F100GSK, R7F100GSL, R7F100GSN |
| | | |
| RX | 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J |
| | 111 | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J |
| | 113 | R5F51135, R5F51136, R5F51137, R5F51138 |
| | 130 | R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308 |
| | 13T | R5F513T3, R5F513T5 |
| | 140 | R5F51403 |
| | 230 | R5F52305, R5F52306 |
| | 231 | R5F52315, R5F52316, R5F52317, R5F52318 |
| | 23E-A | R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S |
| | 23T | R5F523T3, R5F523T5 |
| | 23W | R5F523W7, R5F523W8 |
| | 24T | R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE |
| | 24U | R5F524UB, R5F524UC, R5F524UE |
| | 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML |
| | 651 | R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C_DUAL, R5F5651E, R5F5651E_DUAL |
| | 65N | R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL |
| | 66N | R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL |
| | 66T | R5F566TA, R5F566TE, R5F566TF, R5F566TK |
| | 671 | R5F56719, R5F56719_DUAL, R5F5671C, R5F5671C_DUAL, R5F5671E, R5F5671E_DUAL |
| | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML |
| | 72M | R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL |
| | 72N | R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL |
| | 72T | R5F572TF, R5F572TK |
| | | |
| RZ | A2 | R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058 |

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|---------|-------|--|
| | G2L | R9A07G044C12, R9A07G044L13, R9A07G044L14, R9A07G044C22, R9A07G044L23, R9A07G044L24 |
| | V2L | R9A07G054L13, R9A07G054L14, R9A07G054L23, R9A07G054L24 |
| | S1JA | R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ |
| | S124 | R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF |
| | S128 | R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG |
| | S3A1 | R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB |
| | S3A3 | R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB |
| Synergy | S3A6 | R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF |
| | S3A7 | R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB |
| | S5D3 | R7FS5D37A2A01CLJ, R7FS5D37A3A01CFP, R7FS5D37A3A01CFM, R7FS5D37A3A01CNB |
| | S5D5 | R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP |
| | S5D9 | R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP |
| | S7G2 | R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27G2A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK, R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP |
| RA | RA2A1 | R7FA2L1AB3CFP, R7FA2L1AB3CFN, R7FA2L1AB3CFM, R7FA2L1AB3CFL, R7FA2L1AB3CNE, R7FA2L1AB2DFP, R7FA2L1AB2DFN, R7FA2L1AB2DFM, R7FA2L1AB2DFL, R7FA2L1AB2DNE |

RA2E1 R7FA2E1A93CFM, R7FA2E1A93CFK, R7FA2E1A93CFL,
R7FA2E1A93CFJ, R7FA2E1A93CNH, R7FA2E1A93CBU,
R7FA2E1A93CLM, R7FA2E1A93CBV, R7FA2E1A93CNE,
R7FA2E1A92DFM, R7FA2E1A92DFK, R7FA2E1A92DFL,
R7FA2E1A92DFJ, R7FA2E1A92DNH, R7FA2E1A92DBU,
R7FA2E1A92DLM, R7FA2E1A92DBV, R7FA2E1A92DNE,
R7FA2E1A83CFM, R7FA2E1A83CFK, R7FA2E1A83CFL,
R7FA2E1A83CFJ, R7FA2E1A83CNH, R7FA2E1A83CBU,
R7FA2E1A83CLM, R7FA2E1A83CBV, R7FA2E1A83CNE,
R7FA2E1A82DFM, R7FA2E1A82DFK, R7FA2E1A82DFL,
R7FA2E1A82DFJ, R7FA2E1A82DNH, R7FA2E1A82DBU,
R7FA2E1A82DLM, R7FA2E1A82DBV, R7FA2E1A82DNE,
R7FA2E1A73CFM, R7FA2E1A73CFK, R7FA2E1A73CFL,
R7FA2E1A73CFJ, R7FA2E1A73CNH, R7FA2E1A73CBU,
R7FA2E1A73CLM, R7FA2E1A73CBV, R7FA2E1A73CNE,
R7FA2E1A72DFM, R7FA2E1A72DFK, R7FA2E1A72DFL,
R7FA2E1A72DFJ, R7FA2E1A72DNH, R7FA2E1A72DBU,
R7FA2E1A72DLM, R7FA2E1A72DBV, R7FA2E1A72DNE,
R7FA2E1A53CFL, R7FA2E1A53CFJ, R7FA2E1A53CNH,
R7FA2E1A53CLM, R7FA2E1A53CBV, R7FA2E1A53CNE,
R7FA2E1A52DFL, R7FA2E1A52DFJ, R7FA2E1A52DNH,
R7FA2E1A52DLM, R7FA2E1A52DBV, R7FA2E1A52DNE

RA4M1 R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM,
R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE,
R7FA4M1AB3CNF

RA4M2 R7FA4M2AF3CFP, R7FA4M2AF3CFM, R7FA4M2AF3CFL,
R7FA4M2AF3CNE, R7FA4M2AD3CFP, R7FA4M2AD3CFM,
R7FA4M2AD3CFL, R7FA4M2AD3CNE

RA4M3 R7FA4M3AF3CFB, R7FA4M3AF3CFP, R7FA4M3AF3CFM,
R7FA4M3AE3CFB, R7FA4M3AE3CFP, R7FA4M3AE3CFM,
R7FA4M3AD3CFB

RA6M1 R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP,
R7FA6M1AD3CNB

RA6M2 R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP,
R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP

RA6M3 R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CFB,
R7FA6M3AF3CFC, R7FA6M3AF3CFP, R7FA6M3AH2CBG,
R7FA6M3AH2CLK, R7FA6M3AH3CFB, R7FA6M3AH3CFC,
R7FA6M3AH3CFP

RA6M4 R7FA6M4AF3CFB, R7FA6M4AF3CFP, R7FA6M4AF3CFM,
R7FA6M4AE3CFB, R7FA6M4AE3CFP, R7FA6M4AE3CFM,
R7FA6M4AD3CFB, R7FA6M4AD3CFP, R7FA6M4AD3CFM

RA6T1 R7FA6T1AD3CFP, R7FA6T1AB3CFP, R7FA6T1AD3CFM,
R7FA6T1AB3CFM

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|----|-------------|---|
| | RA4W1 | R7FA4W1AD2CNG |
| | RE01B | R7F0E01BD2DNB |
| RE | RE01_1500KB | R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN |
| | RE01_256KB | R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG |

2.4 Project Generator Support – Linux Hosted

| Family | Group | Devices |
|--------|-------|--|
| RA | RA2A1 | R7FA2L1AB3CFP, R7FA2L1AB3CFN, R7FA2L1AB3CFM, R7FA2L1AB3CFL, R7FA2L1AB3CNE, R7FA2L1AB2DFP, R7FA2L1AB2DFN, R7FA2L1AB2DFM, R7FA2L1AB2DFL, R7FA2L1AB2DNE |
| | RA2E1 | R7FA2E1A93CFM, R7FA2E1A93CFK, R7FA2E1A93CFL, R7FA2E1A93CFJ, R7FA2E1A93CNH, R7FA2E1A93CBU, R7FA2E1A93CLM, R7FA2E1A93CBV, R7FA2E1A93CNE, R7FA2E1A92DFM, R7FA2E1A92DFK, R7FA2E1A92DFL, R7FA2E1A92DFJ, R7FA2E1A92DNH, R7FA2E1A92DBU, R7FA2E1A92DLM, R7FA2E1A92DBV, R7FA2E1A92DNE, R7FA2E1A83CFM, R7FA2E1A83CFK, R7FA2E1A83CFL, R7FA2E1A83CFJ, R7FA2E1A83CNH, R7FA2E1A83CBU, R7FA2E1A83CLM, R7FA2E1A83CBV, R7FA2E1A83CNE, R7FA2E1A82DFM, R7FA2E1A82DFK, R7FA2E1A82DFL, R7FA2E1A82DFJ, R7FA2E1A82DNH, R7FA2E1A82DBU, R7FA2E1A82DLM, R7FA2E1A82DBV, R7FA2E1A82DNE, R7FA2E1A73CFM, R7FA2E1A73CFK, R7FA2E1A73CFL, R7FA2E1A73CFJ, R7FA2E1A73CNH, R7FA2E1A73CBU, R7FA2E1A73CLM, R7FA2E1A73CBV, R7FA2E1A73CNE, R7FA2E1A72DFM, R7FA2E1A72DFK, R7FA2E1A72DFL, R7FA2E1A72DFJ, R7FA2E1A72DNH, R7FA2E1A72DBU, R7FA2E1A72DLM, R7FA2E1A72DBV, R7FA2E1A72DNE, R7FA2E1A53CFL, R7FA2E1A53CFJ, R7FA2E1A53CNH, R7FA2E1A53CLM, R7FA2E1A53CBV, R7FA2E1A53CNE, R7FA2E1A52DFL, R7FA2E1A52DFJ, R7FA2E1A52DNH, R7FA2E1A52DLM, R7FA2E1A52DBV, R7FA2E1A52DNE |
| | RA4M1 | R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF |
| | RA4M2 | R7FA4M2AF3CFP, R7FA4M2AF3CFM, R7FA4M2AF3CFL, R7FA4M2AF3CNE, R7FA4M2AD3CFP, R7FA4M2AD3CFM, R7FA4M2AD3CFL, R7FA4M2AD3CNE |
| | RA4M3 | R7FA4M3AF3CFB, R7FA4M3AF3CFP, R7FA4M3AF3CFM, R7FA4M3AE3CFB, R7FA4M3AE3CFP, R7FA4M3AE3CFM, R7FA4M3AD3CFB |
| | RA6M1 | R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP, R7FA6M1AD3CNB |
| | RA6M2 | R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP, R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP |
| RZ | A1 | R7S721000, R7S721000_DualSPI, R7S721001, R7S721001_DualSPI, R7S721010, R7S721010_DualSPI, R7S721011, R7S721011_DualSPI, R7S721020, R7S721020_DualSPI, R7S721021, R7S721021_DualSPI, R7S721030, R7S721030_DualSPI, R7S721031, R7S721031_DualSPI, R7S721034, R7S721034_DualSPI |
| | A2 | R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058 |

| | |
|------|--|
| G1E | R8A77450, R8A77450_Core1, (Debug Support Only) |
| G1M | R8A77430, R8A77430_Core1, (Debug Support Only) |
| T1 | R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910015_M3, R7S910016, R7S910016_M3, R7S910017, R7S910017_M3, R7S910018, R7S910018_M3, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910115_M3, R7S910116, R7S910116_M3, R7S910117, R7S910117_M3, R7S910118, R7S910118_M3, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136 |
| T1-M | R7S910020, R7S910021, R7S910022, R7S910023, R7S910120, R7S910121, R7S910122, R7S910123 |

2.5 Smart Configurator Support – Linux Host

| Family | Group | Devices |
|--------|-------|--|
| RZ | A2 | R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058 |
| | G2L | R9A07G044C12, R9A07G044L13, R9A07G044L14, R9A07G044C22, R9A07G044L23, R9A07G044L24 |
| | V2L | R9A07G054L13, R9A07G054L14, R9A07G054L23, R9A07G054L24 |
| RA | RA2A1 | R7FA2L1AB3CFP, R7FA2L1AB3CFN, R7FA2L1AB3CFM, R7FA2L1AB3CFL, R7FA2L1AB3CNE, R7FA2L1AB2DFP, R7FA2L1AB2DFN, R7FA2L1AB2DFM, R7FA2L1AB2DFL, R7FA2L1AB2DNE |
| | RA2E1 | R7FA2E1A93CFM, R7FA2E1A93CFK, R7FA2E1A93CFL, R7FA2E1A93CFJ, R7FA2E1A93CNH, R7FA2E1A93CBU, R7FA2E1A93CLM, R7FA2E1A93CBV, R7FA2E1A93CNE, R7FA2E1A92DFM, R7FA2E1A92DFK, R7FA2E1A92DFL, R7FA2E1A92DFJ, R7FA2E1A92DNH, R7FA2E1A92DBU, R7FA2E1A92DLM, R7FA2E1A92DBV, R7FA2E1A92DNE, R7FA2E1A83CFM, R7FA2E1A83CFK, R7FA2E1A83CFL, R7FA2E1A83CFJ, R7FA2E1A83CNH, R7FA2E1A83CBU, R7FA2E1A83CLM, R7FA2E1A83CBV, R7FA2E1A83CNE, R7FA2E1A82DFM, R7FA2E1A82DFK, R7FA2E1A82DFL, R7FA2E1A82DFJ, R7FA2E1A82DNH, R7FA2E1A82DBU, R7FA2E1A82DLM, R7FA2E1A82DBV, R7FA2E1A82DNE, R7FA2E1A73CFM, R7FA2E1A73CFK, R7FA2E1A73CFL, R7FA2E1A73CFJ, R7FA2E1A73CNH, R7FA2E1A73CBU, R7FA2E1A73CLM, R7FA2E1A73CBV, R7FA2E1A73CNE, R7FA2E1A72DFM, R7FA2E1A72DFK, R7FA2E1A72DFL, R7FA2E1A72DFJ, R7FA2E1A72DNH, R7FA2E1A72DBU, R7FA2E1A72DLM, R7FA2E1A72DBV, R7FA2E1A72DNE, R7FA2E1A53CFL, R7FA2E1A53CFJ, R7FA2E1A53CNH, R7FA2E1A53CLM, R7FA2E1A53CBV, R7FA2E1A53CNE, R7FA2E1A52DFL, R7FA2E1A52DFJ, R7FA2E1A52DNH, R7FA2E1A52DLM, R7FA2E1A52DBV, R7FA2E1A52DNE |
| | RA4M1 | R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF |
| | RA4M2 | R7FA4M2AF3CFP, R7FA4M2AF3CFM, R7FA4M2AF3CFL, R7FA4M2AF3CNE, R7FA4M2AD3CFP, R7FA4M2AD3CFM, R7FA4M2AD3CFL, R7FA4M2AD3CNE |
| | RA4M3 | R7FA4M3AF3CFB, R7FA4M3AF3CFP, R7FA4M3AF3CFM, R7FA4M3AE3CFB, R7FA4M3AE3CFP, R7FA4M3AE3CFM, R7FA4M3AD3CFB |

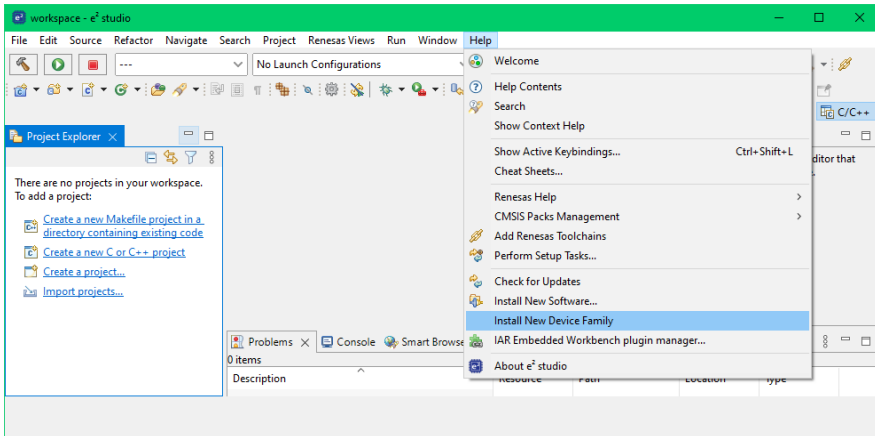
| | |
|-------|---|
| RA6M1 | R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP, R7FA6M1AD3CNB |
| RA6M2 | R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP, R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP |
| RA6M3 | R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CFB, R7FA6M3AF3CFC, R7FA6M3AF3CFP, R7FA6M3AH2CBG, R7FA6M3AH2CLK, R7FA6M3AH3CFB, R7FA6M3AH3CFC, R7FA6M3AH3CFP |
| RA6M4 | R7FA6M4AF3CFB, R7FA6M4AF3CFP, R7FA6M4AF3CFM, R7FA6M4AE3CFB, R7FA6M4AE3CFP, R7FA6M4AE3CFM, R7FA6M4AD3CFB, R7FA6M4AD3CFP, R7FA6M4AD3CFM |
| RA6T1 | R7FA6T1AD3CFP, R7FA6T1AB3CFP, R7FA6T1AD3CFM, R7FA6T1AB3CFM |
| RA4W1 | R7FA4W1AD2CNG |

3. Smart Manual Support

Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of January 2022:

- RX110
- RX111
- RX113
- RX130
- RX210
- RX220
- RX230
- RX231
- RX23E-A
- RX23W
- RX24U
- RX24T
- RX62G
- RX62T
- RX631
- RX63N
- RX63T
- RX651
- RX64M
- RX65N
- RX66T
- RX71M
- RX72M
- RX72T
- RL78/G10
- RL78/G11
- RL78/G12
- RL78/G13
- RL78/G14
- RL78/G1F
- RL78/L12
- RL78/L13
- RL78/G23
- RZ/A1H
- RZ/A1L
- RZ/A2M
- RZ/T1

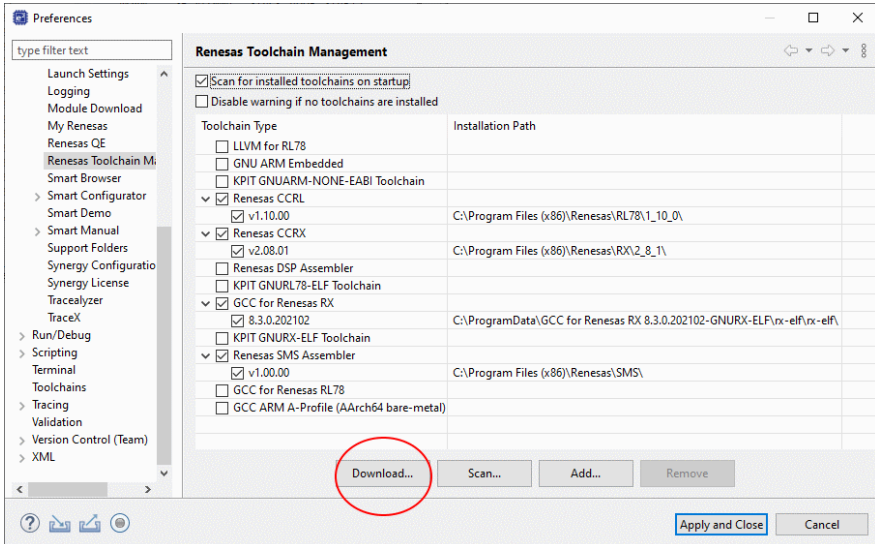
4. What is new in 2022-01?

| Component | Device | Description |
|-------------|--------|--|
| Application | All | <p>New device families can now be installed directly from e² studio using "Help" -> "Install New Device Family" menu item.</p>  |

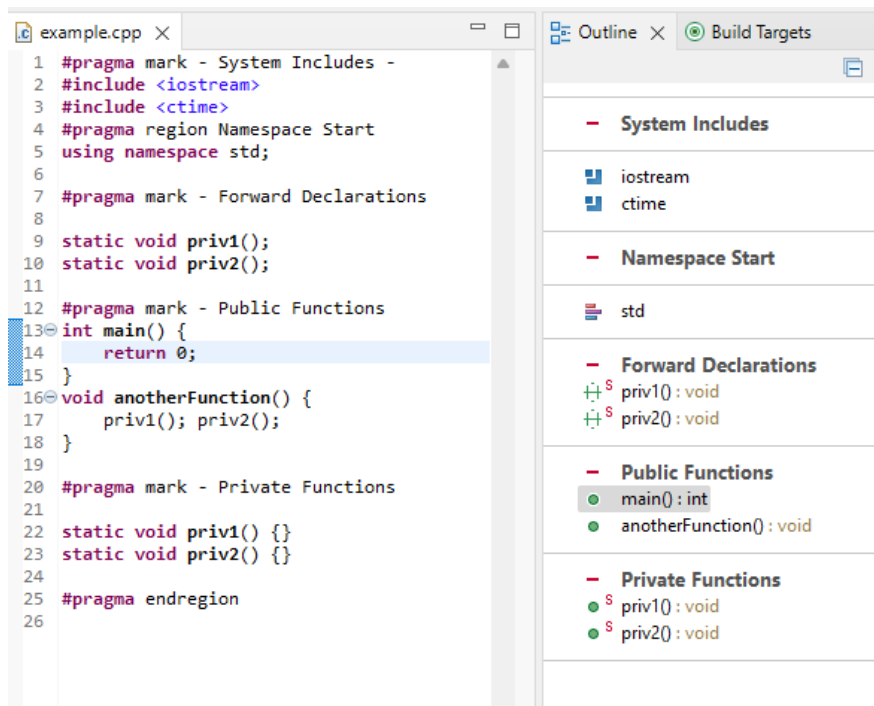
It is now possible to download toolchains from within e² studio.

This is available from the Toolchain Management dialog which can be accessed on the "Help->Add Renesas Toolchains..." menu item.

Once on this dialog press the "Download" button to access the feature.

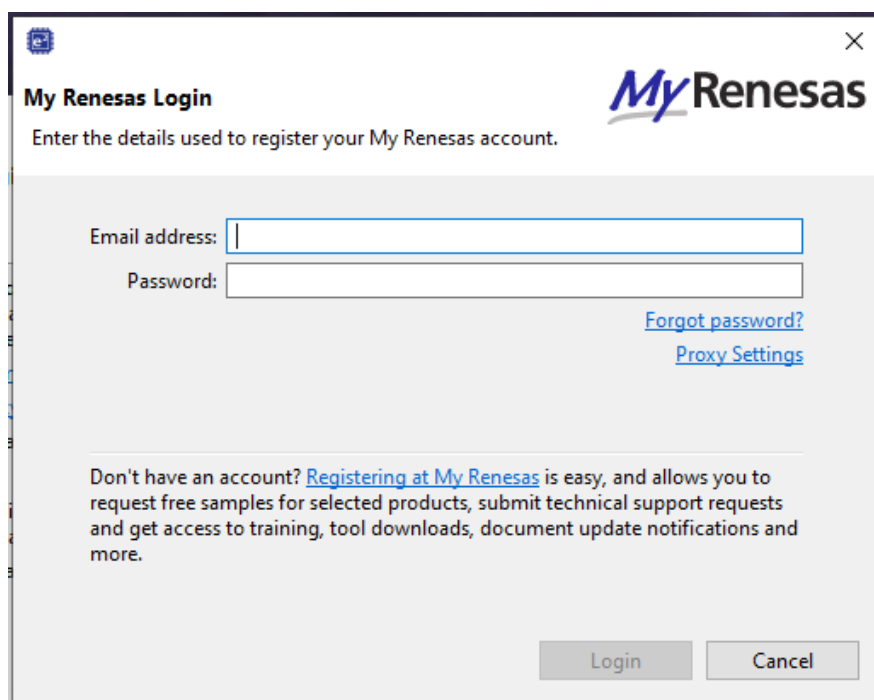
| | | |
|-------------|-----|--|
| Application | All |  |
|-------------|-----|--|

| | | |
|-----|-----|---|
| CDT | All | <p>CDT has been updated to 10.4.1. You can see new and noteworthy items added here:</p> <p>https://wiki.eclipse.org/CDT/User/NewIn104</p> <p>Small updates were made this release, but some improvements are included such as divider lines in the outline view.</p> |
|-----|-----|---|



It is now possible to set the network proxy settings from a link on the MyRenesas login dialog.

Application All

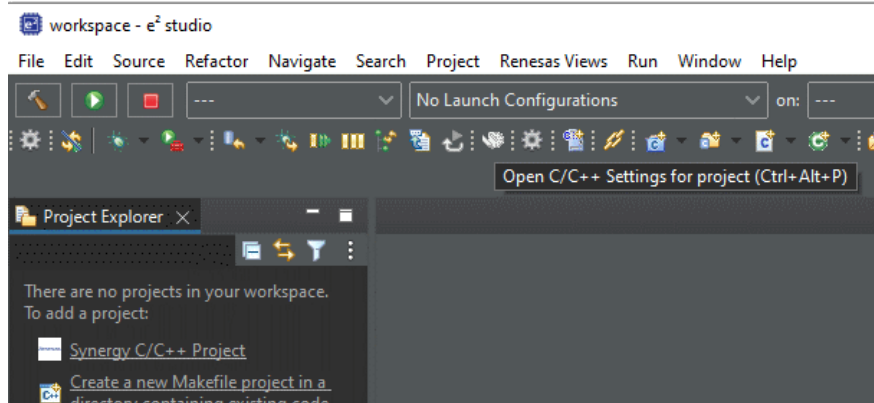


Application All

The Eclipse platform used by e² studio has been updated to 2021-09.

<https://www.eclipse.org/eclipse/news/4.21/platform.php>

Small updates were made this release but some improvements included such as improved dark theme tooltips.



When opening an RX or RL project in 2021-10 a warning message is displayed regarding the Renesas common project file. (project_name).rcpc

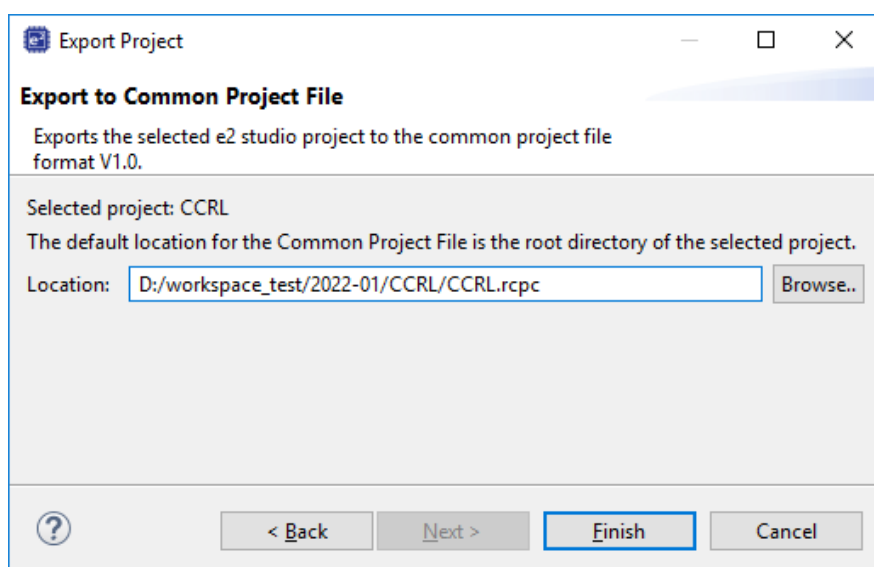
This could cause confusion for users that have no knowledge of this file for migration projects to and from CS+.

This message has now been moved to the export common project file dialog to reduce confusion.

The message is "Please make sure the file \{project_name\}.rcpc is updated before migrating this project to CS+."

Export
Common
Project

RX, RL



Device
Support

RX

RX device support updated to include:

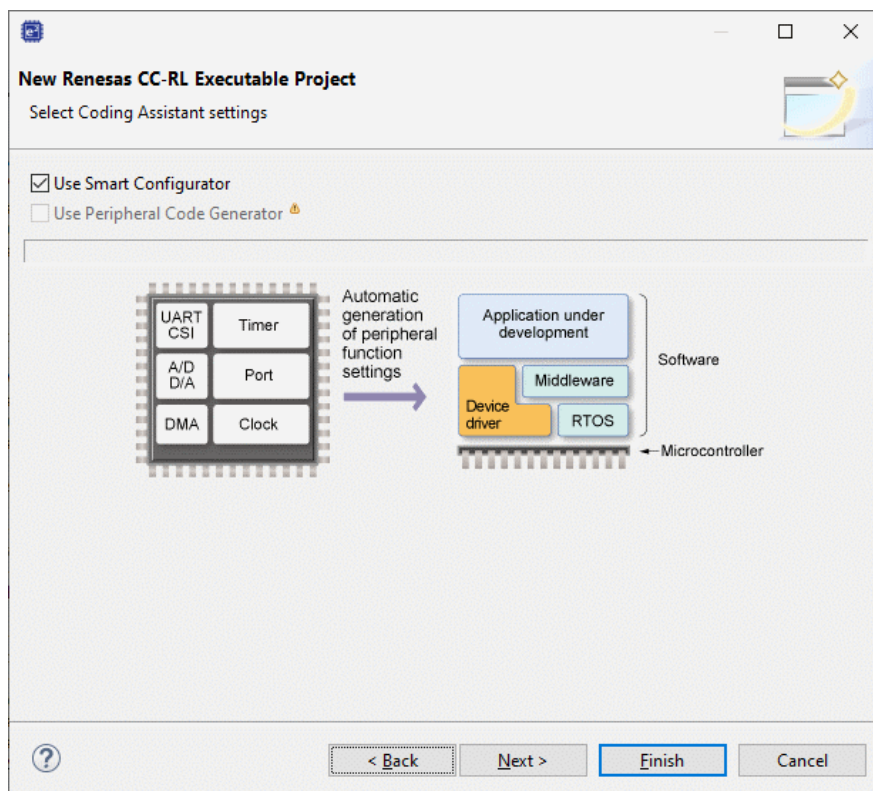
RX66T :R5F566TABxFL, R5F566TAFxFL, R5F566TEBxFL,
R5F566TEFxFL

For RX and RL78 projects, where possible the Smart Configurator will be enabled automatically.

This is the case for the devices that support the Smart Configurator tooling.

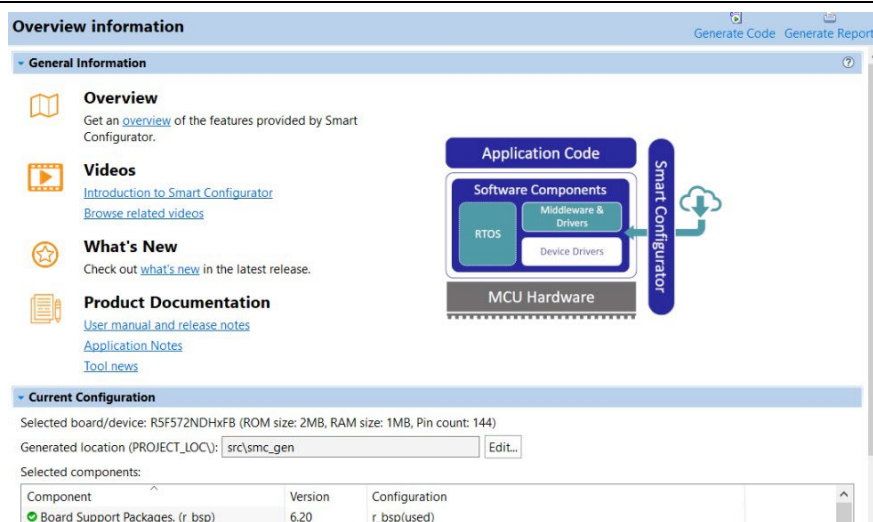
Smart
Configurator

RX, RL



Smart
Configurator

RX



(1) The "Overview" page of the RX Smart Configurator editor has been updated to provide additional links to "Videos" and "What's New" information.

(2) An improvement has been made regarding to the setting of "Not output" for creation date in the Smart Configurator for RX preferences, now this setting also applies to generated files in the "r_pincfg" folder.

(3) A minimum version of BSP v7.00 is recommended for the current version of RX Smart Configurator. If a BSP of version less than rev7.00 is used, a warning tooltip will be displayed in left panel of the Component page in the RX Smart Configurator editor.

(4) The paths for the "Include path" element in the IPCF connection file have been updated from absolute paths to relative paths when generating code in the RX Smart Configurator with IAR EWRX compiler, it fixes the build problem when the IPCF connection file is not loaded on the original user PC.

(5) The following debugger settings of e2 studio RX Smart Configurator project can be synchronized with their GUI settings values automatically when there is an update on the Smart Configurator GUI.

- Main clock source
- Operation frequency
- EXTAL frequency
- Connection type

(6) The "System" page settings of RX Smart Configurator can be imported from or exported into BDF file via the "Import board settings" or "Export board setting" menus on the "Board" page.

(7) The following BSP packages have been removed from the RX Smart Configurator:

- r_bsp_gcc_v1.00.zip, r_bsp_gcc_v1.10.zip, r_bsp_gcc_v1.20.zip, r_bsp_gcc_v1.30.zip
- r_bsp_iar_v1.00.zip, r_bsp_iar_v1.10.zip, r_bsp_iar_v1.20.zip
- r_bsp_user_v1.10.zip, r_bsp_user_v1.20.zip, r_bsp_user_v1.30.zip
- r_bsp_v3.80.zip, r_bsp_v3.91.zip
- r_bsp_v4.00.zip, r_bsp_v4.01.zip
- r_bsp_v5.20.zip, r_bsp_v5.21.zip, r_bsp_v5.40.zip, r_bsp_v5.50.zip, r_bsp_v5.61.zip, r_bsp_v5.62.zip, r_bsp_v5.63.zip, r_bsp_v5.64.zip

To continue using the above listed BSP packages, please use the download function in Smart Configurator to download the exact version.

CCRX Builder RX

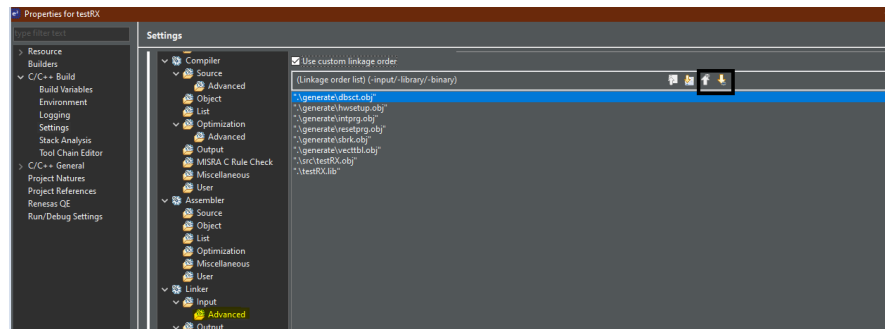
The CC-RX V3.04.00 toolchain will be released at the same time of e² studio 2022-01 release.

So, you can perform Build and Debugging using CC-RX V3.04.00 on e² studio 2022-01.

| | | | |
|----------------|-----|-----------------|--------|
| CCR Builder | and | CCRL Builder | RX, RL |
|----------------|-----|-----------------|--------|

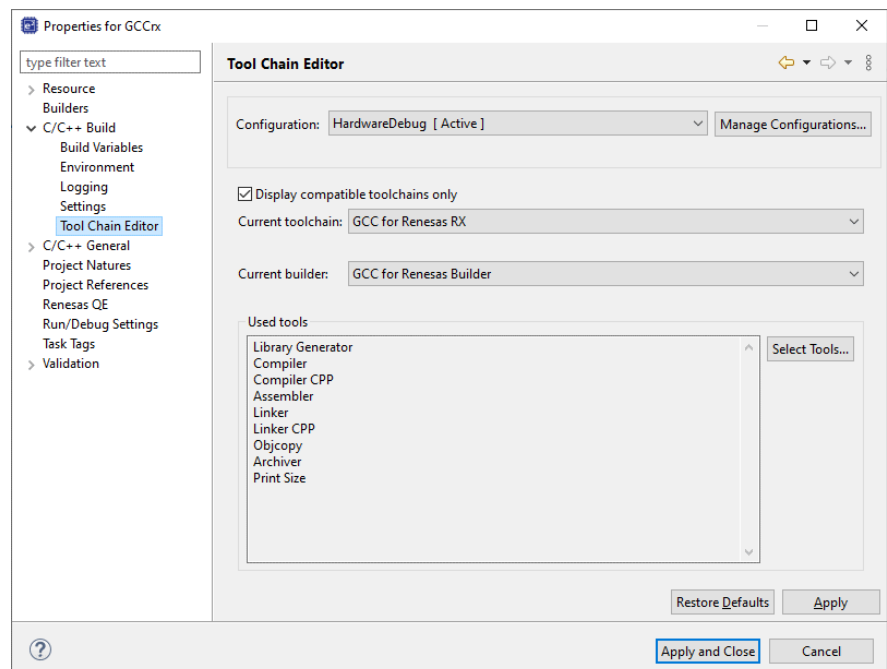
There are some improvements that have been made to change linkage order when a project has many source files.

- * Drag/drop feature is added. This feature help to change linkage order quickly by dragging a source file and dropping it at a target position within the Linkage order list.
- * 2 buttons (Move to Top, Move to Bottom) are also added. They are used to move a source file to the top or bottom of the Linkage order list.



GCC builder support has been improved to better support C++ in projects. It is now possible to mix C and C++ files and set options independently for each language. This is supported for RZ, RX and RL device families.

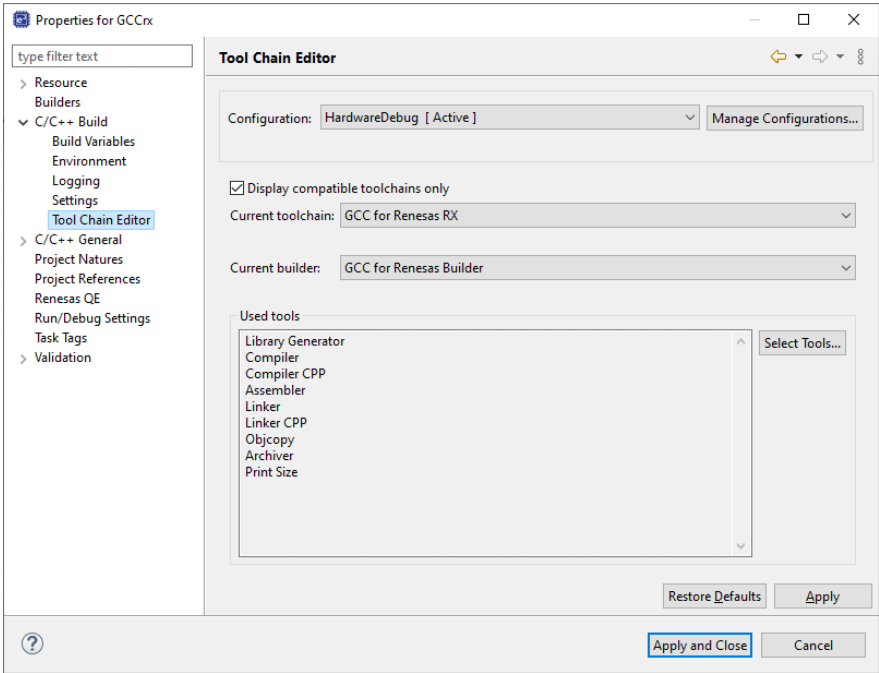
GCC Builder RX, RL, RZ



ThreadX Debugging

When using Thread for the RX device family when RTOS debug integration is switched on the RTOS threads are enabled in the debug view.

This enables thread aware debugging for ThreadX for RX.

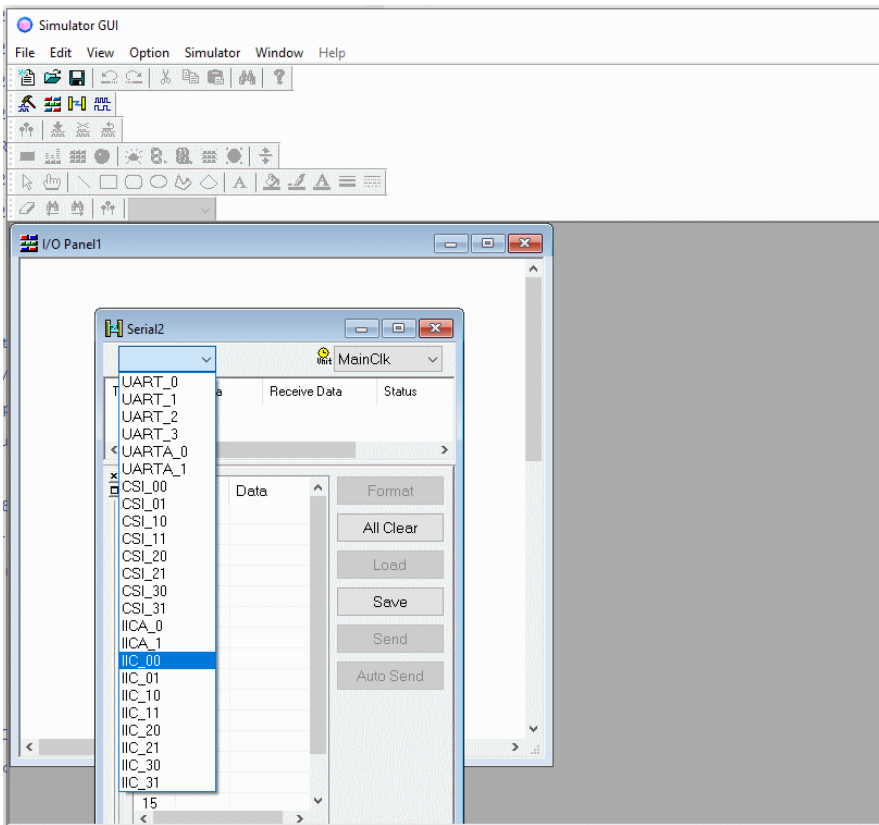


The simplified I2C interface of the serial array unit has been added to the range of peripheral modules for simulation (for use with the RL78 family).
The user can confirm the behavior of the program with serial window in simulator GUI.

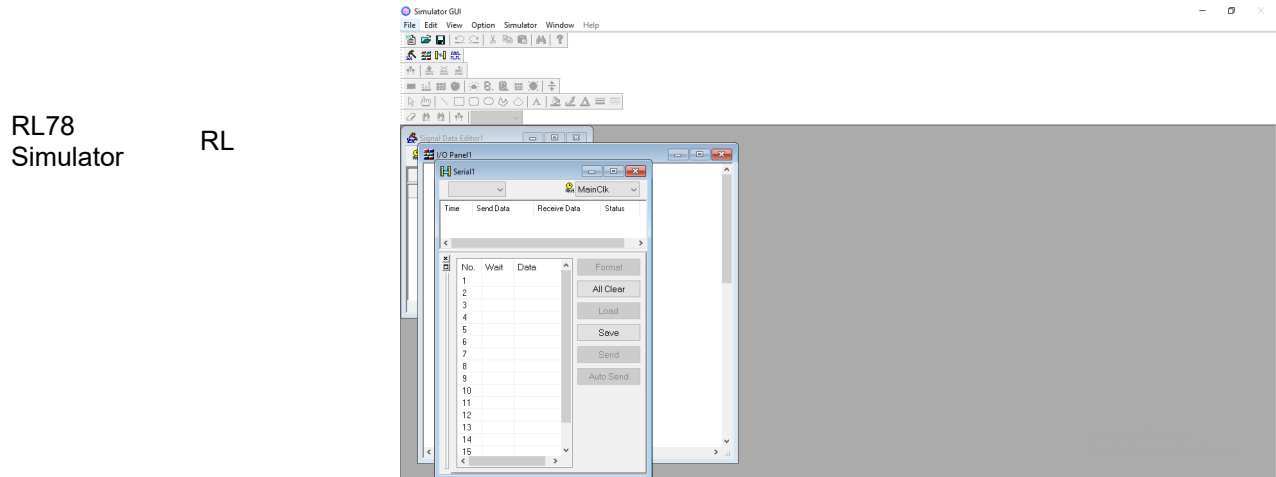
RL78
Simulator

RL

RL78/G10, RL78/G11, RL78/G12, RL78/G13, RL78/G13A, RL78/G14, RL78/G1F, RL78/G23



This feature now allows the state of each window in the simulator GUI to be restored on reconnection. A file is created if it does not already exist. This means that after disconnection and reconnection the Simulator GUI view configured items will be restored and displayed.



CC-RL Builder RL

CC-RL V1.11.00 will be released at the same time of e² studio 2022-01 release. So, you can perform Build and Debugging using CC-RL V1.11.00 on e² studio 2022-01.

Device Support RL

The RL78 device support has been updated. The following devices were added:

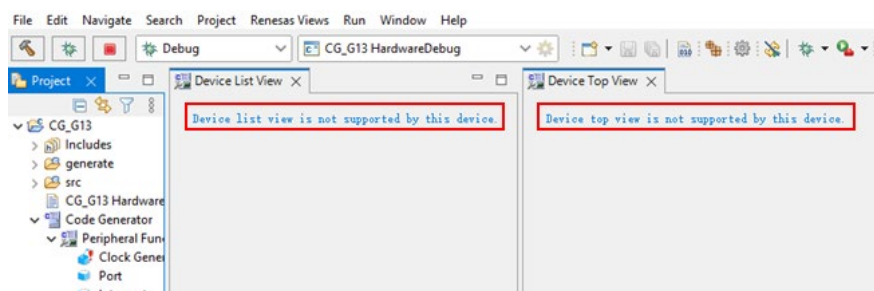
RL78/F24:

R7F124FBJ3xNP, R7F124FBJ4xNP, R7F124FBJ5xNP,
R7F124FGJ3xFB, R7F124FGJ4xFB, R7F124FGJ5xFB,
R7F124FLJ3xFB, R7F124FLJ4xFB, R7F124FLJ5xFB,
R7F124FMJ3xFB, R7F124FMJ4xFB, R7F124FMJ5xFB,
R7F124FPJ3xFB, R7F124FPJ4xFB, R7F124FPJ5xFB

The Code Generator [Device Top View] and [Device List View] panels have been improved to show message when the current device does not support showing pin information.

Code
Generator

RL



Stack
Analysis View

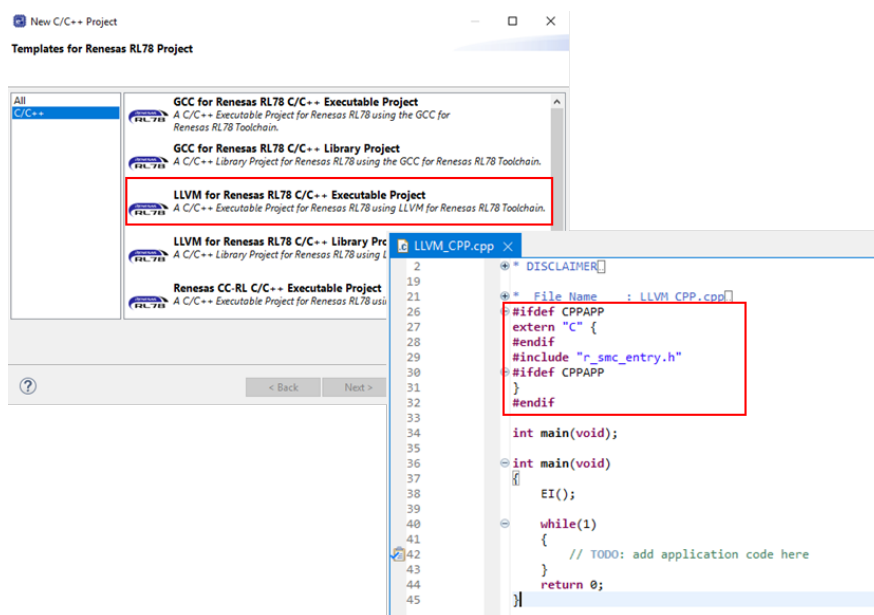
RL

The Stack Analysis plugin now supports projects with the LLVM for RL78 toolchain.

Smart Configurator RL78 generation code supports extern "C" when creating a LLVM C++ project.

Smart
Configurator

RL



RH850 device support has been updated:

Device
Support

RH850

The following devices were added:
RH850 U2A-Eva : R7F702Z19B
RH850 U2A16 : R7F702300A
RH850 U2A8 : R7F702301A

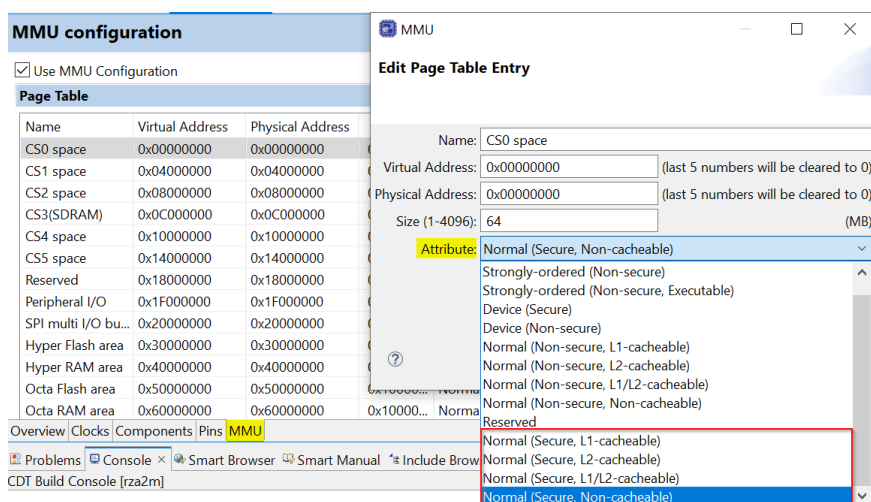
RH850 U2A6 : R7F702302
 RH850 C1M-A : R7F701275, R7F701278

The following devices were updated:

RH850 U2A-Eva R7F702Z19A
 RH850 U2A16 R7F702300
 RH850 U2A8 R7F702301
 RH850 F1KM-S1

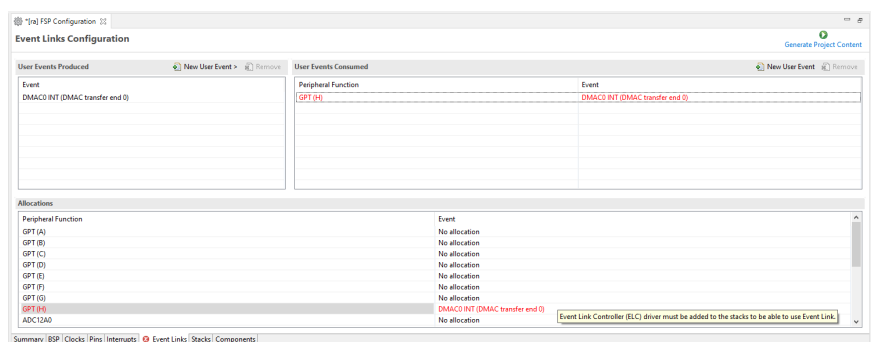
When using RZ/A2M with Smart Configurator, please take note on the following small improvement related to MMU.
 Attribute of MMU setting item at MMU tab of Smart Configurator has been updated to have 4 new attributes for Normal Secure.

Smart Configurator RZ/A2M



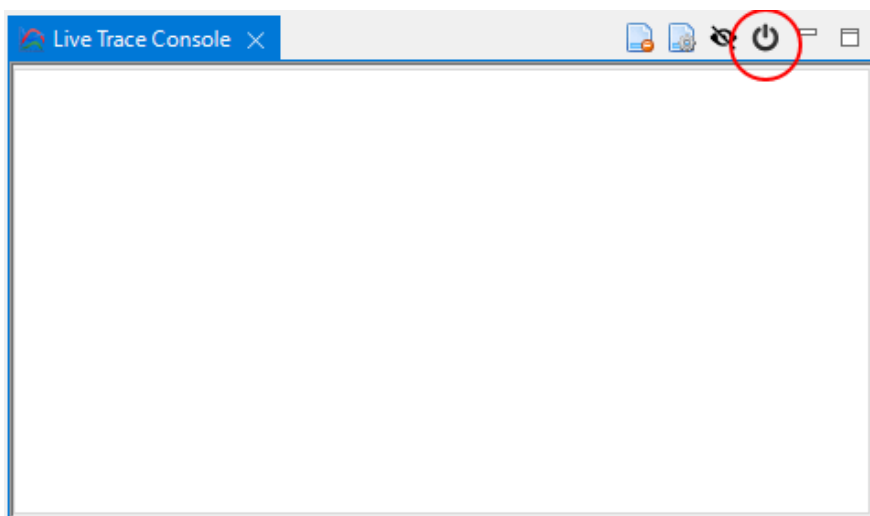
When using the Event Links feature in the FSP Configurator the code(elc_data.c) is not generated unless the r_elc driver is added in Stacks. It has now been made more obvious to add this module by improving the error messages on this tab of the configurator.

Smart Configurator RA, RZ



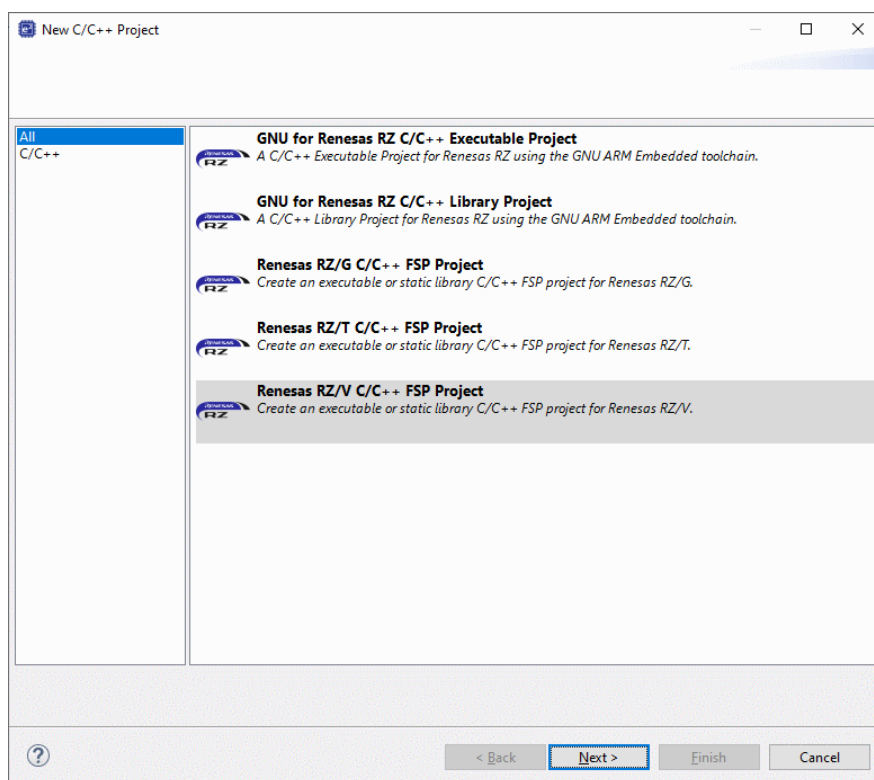
The Smart Configurator in e² studio now supports RZ/V. You can now setup and configure the Flexible Software Platform (FSP) for RZ/V using this tooling.

The ON/OFF button of Live Trace Console view can't be toggled while the program is running to prevent unexpected errors.



The Smart Configurator now supports project generation and configuration of the Flexible Software Platform (FSP) for RZ/V devices.

Smart
Configurator RZ/V



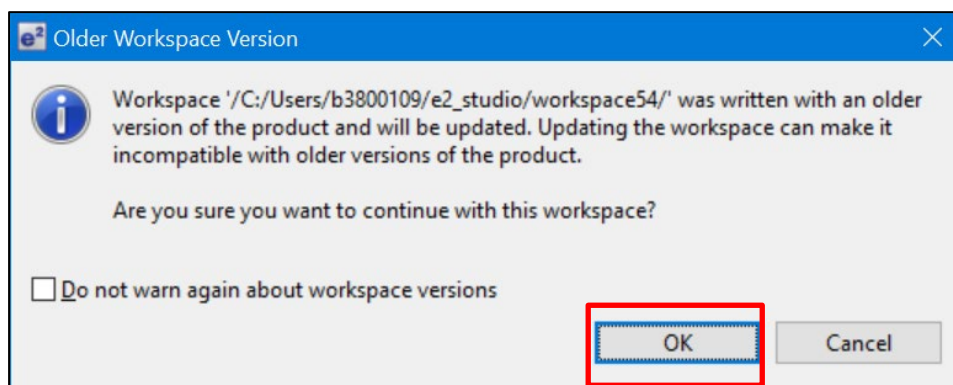
5. Useful workarounds and information for 2022-01

Please visit the Renesas FAQ for e² studio for the latest up to date information:

[Online FAQ link.](#)

| ID | Component | Workaround or information |
|----|---------------------------------|---|
| | Application | When using the check for updates feature within e ² studio and updating from 7.0.x to 7.1.x the initial restart after the update fails. An error message is displayed. Subsequent launches of e ² studio work without issue. This is caused by the update to Java. |
| | SH support | The Renesas SH device family is no longer supported in e ² studio. If you need to use the SH device support, please use e ² studio 5.4 or earlier. |
| | Importing old projects into 6.x | All projects being migrated into the latest e ² studio from e ² studio 5.4 and earlier versions will need to be migrated to the new builder plugins. The new builder plugins have different user interface pages and different option IDs. |

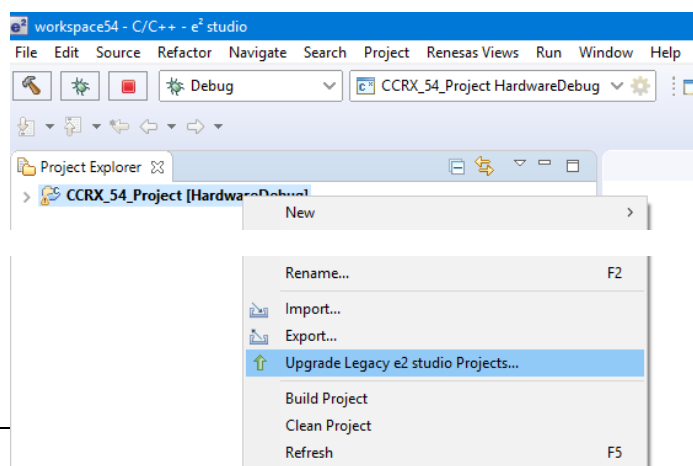
Upon opening an older workspace, the following dialog would be displayed:



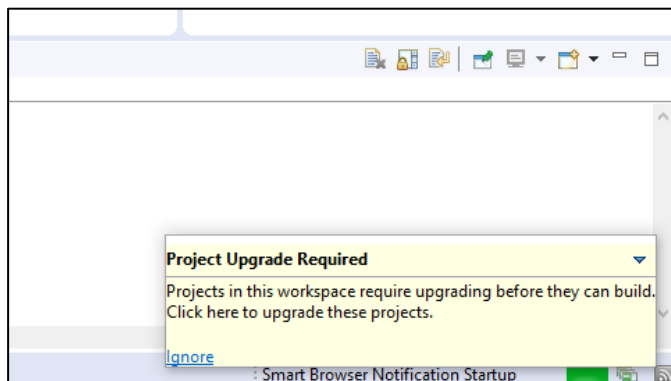
Clicking OK will update the workspace to the newer e² studio.

Importing an existing project to the workspace or opening a workspace with old projects will automatically start the legacy project upgrade procedure.

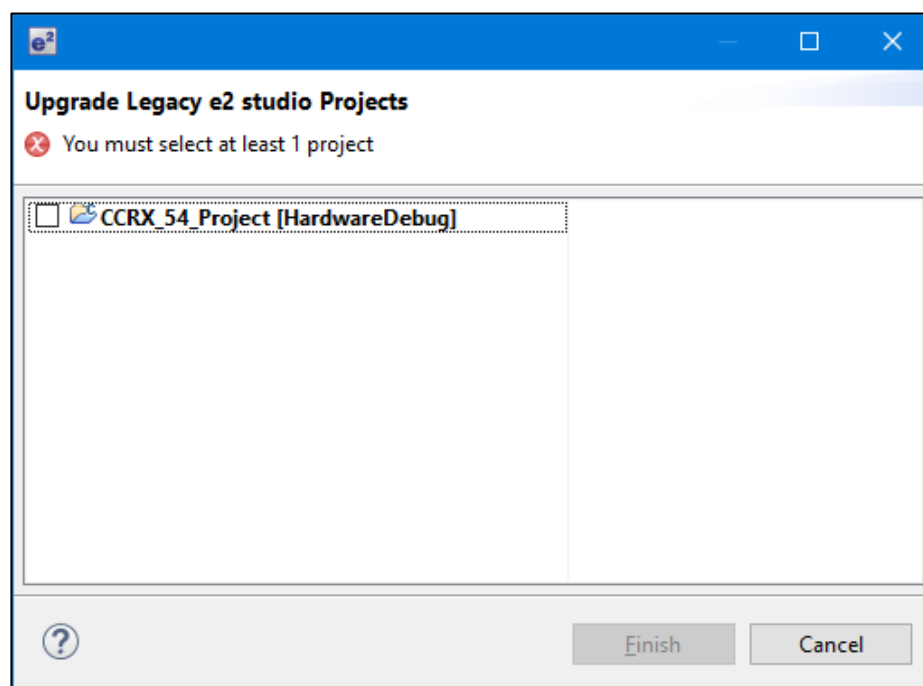
If for some reason this process does not start it is also possible to launch the "Upgrade Legacy of e2 studio Projects..." from the project context menu.



The automatic system pops up a message bubble in the bottom left of the e² studio application window.



After selecting the menu item or clicking the bubble the following dialog will be shown:

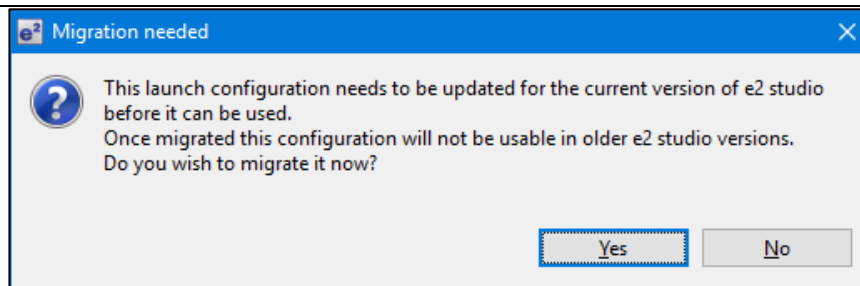


To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

It is possible to upgrade multiple projects in a single operation.

For the GCC toolchains for RX, RL and GNUARM-NONE have been made to the build options which mean we cannot guarantee the same binary output after upgrade. Please consider this before upgrading.

Another consideration for migration is that debug configurations when opened in 6.0 will also need to be migrated. The following message will be displayed.



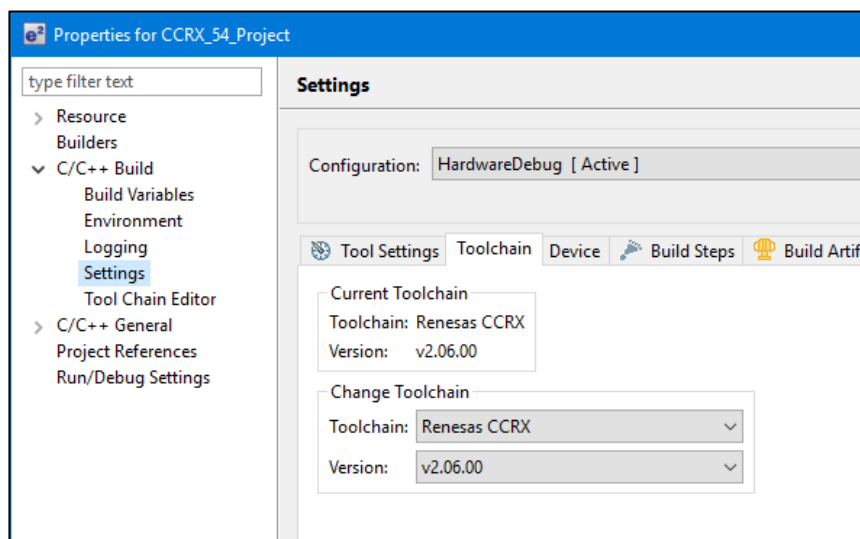
Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

Toolchain Management

Before e² studio 6.0 the toolchain management facility automatically upgraded or downgraded the imported project to the latest tools installed on the host machine.

This no longer happens in the latest e² studio. Instead the toolchain remains the same and user operation is the only way to change the toolchain version.

This operation is now available within the build settings on the toolchain tab. An example of CCRX is shown below:



If the particular toolchain version does not exist and build is performed, then an error message is displayed, and the build will fail.

RZ Toolchain

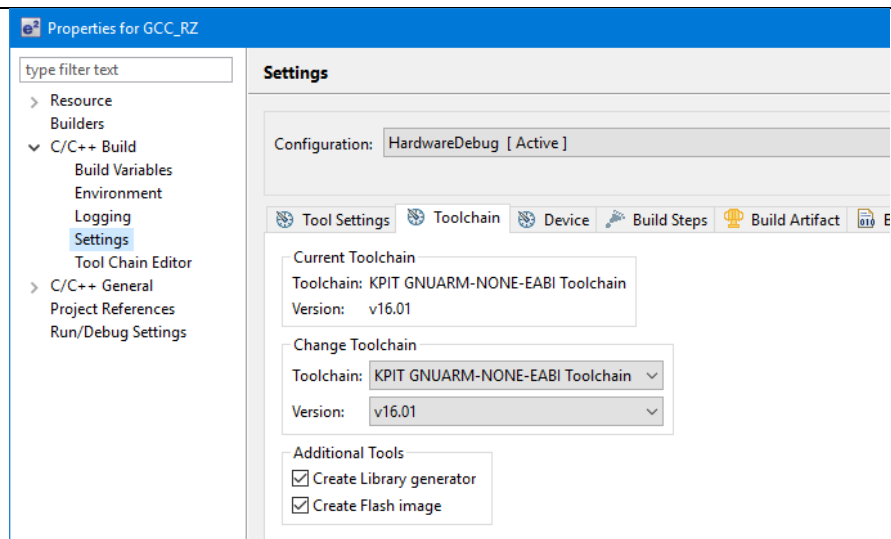
The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e² studio product but now using the gnuarmeclipse plugins.

In addition RZ within e² studio now supports the GNU ARM Launchpad toolchain. Available from <https://launchpad.net/gcc-arm-embedded>.

One drawback of this toolchain is that it does not have a standard library builder provided in the same manner as the legacy KPIT ARM-NONE toolchain. To use this feature for ARM Launchpad and gain access to the more efficient optlib libraries a further download is required.

This can be downloaded within the e² studio installer or directly from here: <https://gcc-renesas.com/rz/rz-download-toolchains/>

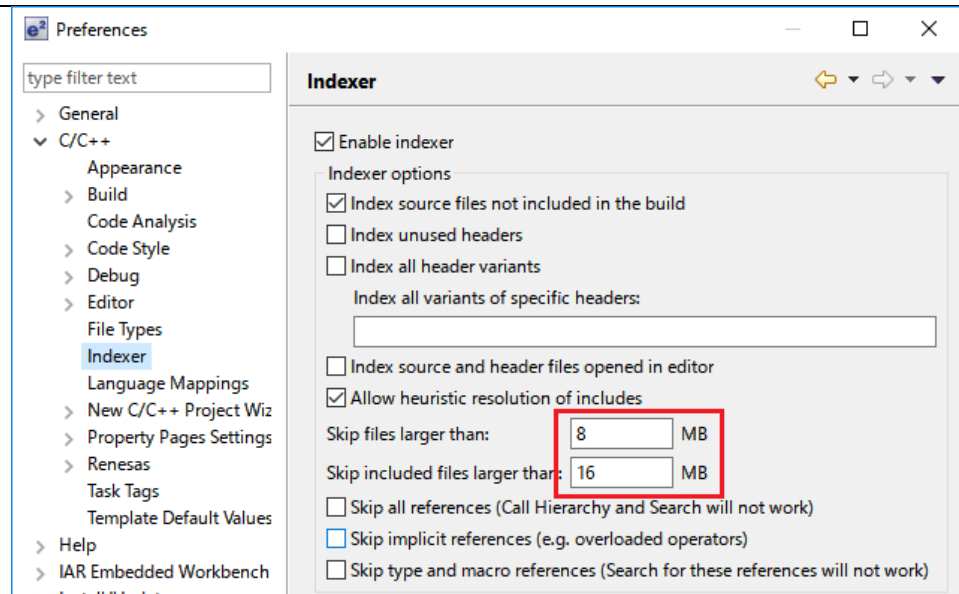
Once integrated it is possible to integrate the library generator from the toolchain tab of the build settings page.



See “Create Library generator” option. Once checked the library generator (libgen) is added to the available tool settings.

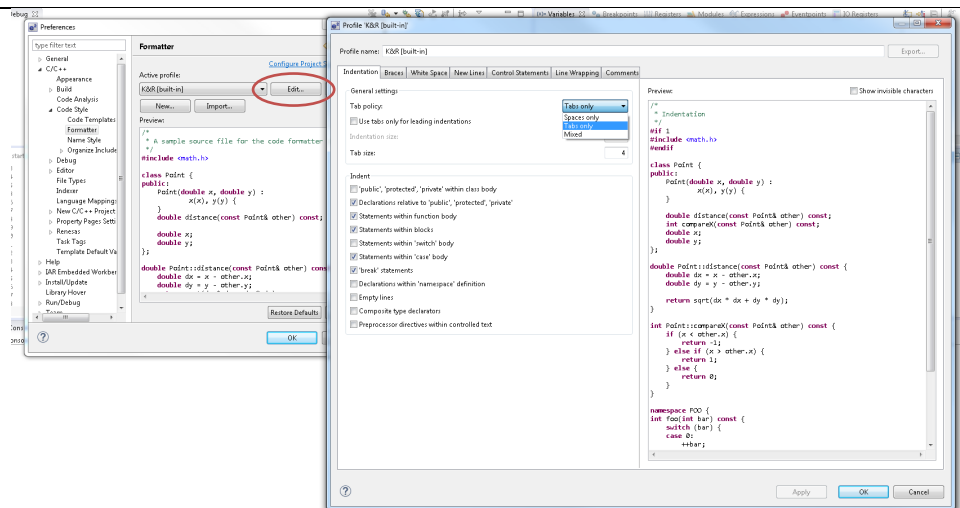
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| QE compatibility | If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1. Other QE series can be used with e ² studio 6.0. |
| | <p>What is QE? https://www.renesas.com/qe</p> |
| | <p>Details of QE for TCP/IP https://www.renesas.com/qe-tcpip</p> |
| 5954 Application | <p>If you experience the error message “org.eclipse.swt.SWTError: No more handles” this can be caused by certain multi-monitor software and the Eclipse framework.</p> <p>If this error occurs there are 2 workarounds:</p> <ol style="list-style-type: none"> 1. Use a single monitor display. 2. Uninstall the multiple monitor software from your graphics chipset vendor and revert to the standard Windows multi-monitor feature. |
| 6981 RL78 Debugging | <p>When debugging IAR C source file with an OCD emulator (E1), the Monitor program area (0x00002-0x00003) is used.</p> <p>Therefore, this area must be excluded from usable address space. Please add '-HFF' in the linker option.</p> <ol style="list-style-type: none"> 1. Open Property. 2. Select [C/C++ build]-[Settings] at left side. 3. Select 'IAR RL78 Xlink linker' at right side, add '-HFF' at the textbox 'command'. <p>Not doing this will cause problems with connection and download when using interrupts.</p> |
| NA Application | <p>If you are experiencing slow building of projects within e² studio there are some possibilities to improve.</p> <p>The system environment will attempt to find the make.exe tool via the system environment. If you ensure the directory, make resides in is at the start of the path variable it will find it more quickly. Especially important if there are network drives in the path.</p> |

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| | | In the project properties, C/C++ Build tab, behavior tab you can switch on parallel build. This will take advantage of the multi-cores on your host machine if it has them. |
| NA | RZ GCC | <p>In 3.0 the KPIT GCC RZ toolchain was supported at version 14.01. This version is no longer supported within e² studio.</p> <p>KPIT modified the name of their ARM toolchain to be ARM-none-eabi to follow standard ARM naming convention like other GCC toolchain vendors.</p> <p>The ARM-none toolchain is available at versions 14.01, 14.02 and 16.01 from the www.gcc-renesas.com website. The binaries in the 14.01 version are identical to those used in the 14.01 RZ toolchain.</p> <p>Once the toolchain is installed your projects will be imported and ported to ensure there is as little disruption as possible due to this change.</p> |
| NA | KPIT GCC | <p>The KPIT toolchains are now no longer supported by the www.kpitgnu tools.com website. Support is now available from the www.gcc-renesas.com website.</p> <p>In addition, there are two new releases for the GNU toolchains for RX and RL78. These are now named Renesas GCC for RX and Renesas GCC for RL78.</p> <p>Both integrate into e² studio and can be selected from the project wizard.</p> |
| 1922 | Application | <p>Symptoms: Project fails to build in first instance after archive project import (not from HEW)</p> <p>Conditions: If an archived project is imported, it may fail to build the first time, due to a residual .d file.</p> <p>Workaround: Clean and Build a second time.</p> |
| 2762 | CODAN | <p>When using assembly code within a C source file, CODAN errors can be observed in the editor. Even though the project builds successfully, or even after rebuild index.</p> <p>Indexer buffer can be insufficient to process whole project. Please try giving larger values for the following configurations.</p> <p>Open preferences dialog through “Window”->“Preferences” menu. In “C/C++”->“Indexer” tree, you will indexer configuration as shown below:</p> |



Put larger values for each red-framed variables, then rebuild project or rebuild index.

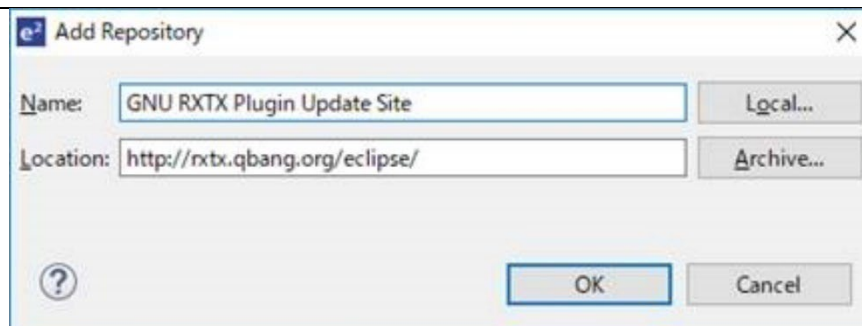
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| 2728 | GDB | <p>Step into does not always work when using the CC-RX 1.02.01 toolchain.</p> <p>To ensure this behaves correctly you will need to use CC-RX 2.00.00 or greater as this issue with the debug information is corrected in this release.</p> |
| NA | Eventpoints | If eventpoints do not always work just after they are set, you can use the "Apply to Target" toolbar button in the Eventpoint view to send the Eventpoints to the target manually. This will always ensure the debugger target has all the required eventpoint updates before execution starts. |
| 5772 | IAR Plugins | <p>The IAR Plugin Manager is included in e² studio and provides support for RX, RL78, RH850 and RZ (ARM).</p> <p>This tool simplifies installation and configuration of IAR toolchain plugins. You can access this through Help -> IAR Embedded Workbench plugin manager.</p> |
| 6184 | RL78/CC-RL debugging | When the load module for RL78/G10 which created at CC-RL is debugged in E1, please specify the following option: [Linker] -> [Device] -> "Set enable/disable on-chip debug by link option" |
| 7217 | Application | The restore default settings does not restore all the options set during project generation. Instead, it sets the defaults to the base settings for the device family in use. |
| 7524 | RZ/T1 Debugging | <p>In a RZ/T1 RAM-based project, the "Reload" function does not work.</p> <p>Reloading or re-downloading during debugging resets the device and the RAM content is erased.</p> <p>To continue the debugging, disconnect and connect the debugger again.</p> |
| | Use spaces as tabs | <p>Eclipse and CDT both have settings for use spaces as tabs. The option on the Editor preferences page conflicts with the CDT formatter settings.</p> <p>To change the use spaces as tabs option in e² studio please use this page:</p> |



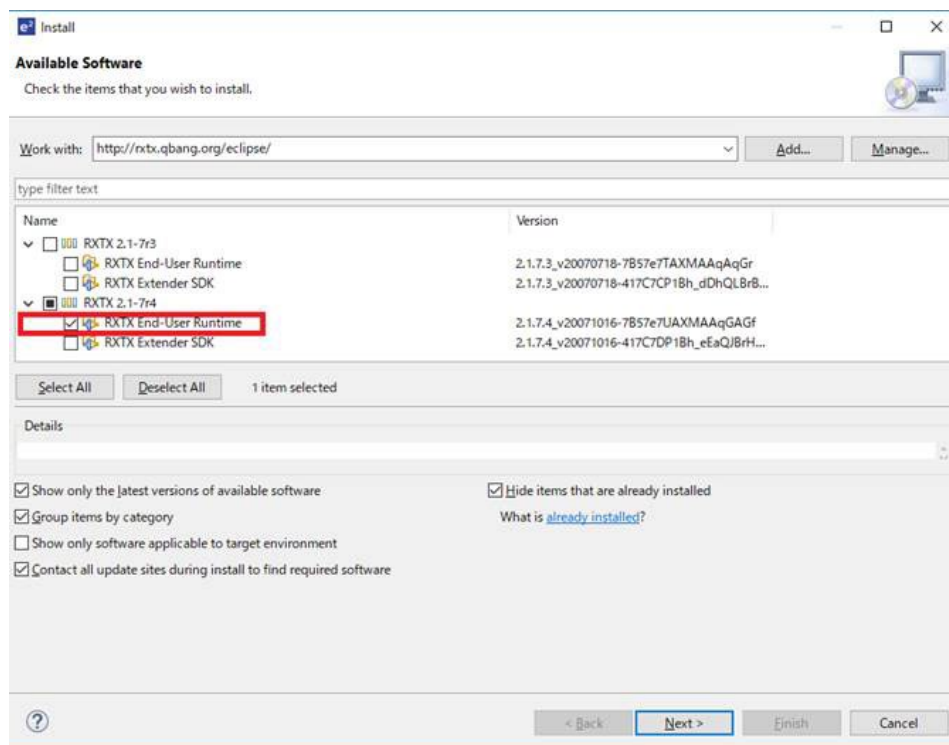
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| | Installer problems | In some situations, the AVG virus checker appears to interfere with the e ² studio installation process. If you experience such a problem, please temporarily disable the AVG tool and try the installation again. |
| | Antivirus | In some situations, the Norton anti-virus tool can interfere with the building of Renesas Synergy projects. If possible, please disable the antivirus program when building Renesas Synergy projects on systems with Norton Antivirus installed. |
| | Green Hills RH850 Projects | <p>When debugging the RH850 object built with the Green Hills compiler in e² studio, specify the following option for the compiler option: -gtws</p> <p>The GUI setting menu is as follows. [GHS C Compiler for V800 Standalone]-[Debugging Option] "Generate Target-Walkable Stack" -> On</p> <p>If this option is not specified, Step Over and Step Return may not work properly.</p> |
| 17052 | Debugging | <p>When debugging using a project with duplicate filenames that are in different source folders problems can be seen with breakpoint setting.</p> <p>When a breakpoint is set at a source line in this file it will also stop at the same source line in the other same named file when execution passes through.</p> |
| 18505 | RZ debugging | <p>When debugging with RZ/T1 in certain situations you may experience problems stepping:</p> <p>If the following conditions are met:</p> <ol style="list-style-type: none"> 1. Code is located close to address 0x0 2. There is very little library code included into the project 3. There are unused functions in the program <p>The possibility arises that the code cannot be debugged. This due to --gc-sections linker option which removes the unused functions but not the related debug information.</p> <p>There are several solutions to this problem:</p> <ol style="list-style-type: none"> a. disable --gc-sections until those functions are used b. remove the unused functions |

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| | RZ GCC Build | <p>In the latest e² studio, the RZ import functionality has been improved. However, there are still possibilities of older projects causing problems when imported into e² studio.</p> <p>In older versions of the RZ build plugins the FPU option was not being handled correctly. When setting the “Soft” Floating point ABI the command line was still receiving <code>-mfpv=vfpv3</code> incorrectly. This can now cause problems with older start-up code in older RZ projects.</p> <p>After import if you see an error relating to this please add <code>-mfpv=vfpv3</code> to the “Other Assembler Flags” page of the Assembler tool.</p> <p>In addition, when migrating some RZ/A1 projects you may experience import problems unless you build the project in 5.4 first.</p> |
| | RZ DS-5 Project Import | <p>When a DS-5 project is imported into e² studio the environment variables for Path and TCInstall are copied from the DS-5 environment.</p> <p>This is not correct. The way to correct this problem is to delete both paths and replace them with correct values to your toolchain. If you are unsure how to correct this, please create a new project and copy the values from this to the converted project.</p> |
| | RX & RL78 GCC Project Import | <p>When importing a KPIT RL78/RX Library C/C++ project from e² studio 5.4 or before the build artifact settings are not correct.</p> <p>The output prefix should be set to “lib” but is in fact empty.</p> |
| | RZ/G debug | <p>In the case of debugging Linux application for RZ/G, the following error messages are shown in GDB server console when pushing [Step in] button or [Step Over] button.</p> <p>These messages can be ignored because the Step debugging should work properly even with these messages.</p> <p>Examples of error messages:</p> <pre>PassthroughTargetCommunication::sendResponse error 42 46 PassthroughTargetCommunication::sendResponse error 10 15 PassthroughTargetCommunication::sendResponse error 42 46</pre> |
| 21863 | RX & RL Debugging | <p>In previous releases there were some problems with stepping in some situations when using the CCRX and CCRL toolchains.</p> <p>A fix has been made to the debug object converter. To see this improvement please clean and rebuild the project. The debug information will then be updated, and the stepping will be more correct and reliable.</p> |
| | Code Generator registration | <p>When using multiple installations of e² studio on your machine you may find that subsequent installations do not work correctly with the code generator.</p> <p>The effect is that the code generator cannot be created or added to projects. Existing projects can be used by the code generator views appear empty.</p> <p>If this is the case, then the code generator must be manually registered. To do this execute the following tool:</p> <p>e.g.</p> <pre>C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601-1047\CodeGenerator\Tools\register COM.bat</pre> |

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| 25278 | Synergy debugging | <p>When loading Symbols from multiple .elf files compiled using the IAR toolchain, the user will need to add ".text" before place in FLASH_region command inside the .icf Script.</p> <p>e.g.</p> <pre> .text": place in FLASH_region { block LOCK_LOOKUP, ro, ro section .rodata, block QSPI_NON_RETENTIVE_INIT_BLOCK, block RAM_INIT_CODE, block USB_DEV_DESC_BLK }; </pre> |
| 25273 | RZ Device Migration | <p>When changing the device from a RZ/A1 and attempting to swap to a RZ/T1 the device migration is not successful.</p> <p>The source code is not migrated successfully, and the build fails. This is due to the different start-up code structure between these devices.</p> <p>In this case please create a new project and copy the required source to the newly created project.</p> |
| 25195 | RZ/A2M Smart Configurator | <p>When creating a project of RZ / A2M, the following Warning is displayed in the Problems view for the src / renesas / configuration folder.</p> <p>"Invalid project path: Include path not found"</p> <p>[Workaround] Delete the specification of this folder with the compile option include path setting.</p> |
| 24883 | R2/A2M | RZ / A2M project generated by e ² studio does not support GCC ARM 7.x or later. Please use GCC ARM 6.3. |
| 27913 | GDB server RL78 | When debugging with an EZ cube, real-time refresh significantly slows down debugging features and it makes e ² studio look like suspended. |
| 12123 | Linker Script Editor | <p>The Linker Script Editor may report errors when using some Wild Identifiers such as 1file.o and *filename.o .</p> <p>Although these are valid file names and valid identifiers according to the Linker Script syntax, they need to be quoted when using the Linker Script Editor. (e.g. "1file.o" and "*filename.o").</p> |
| | RZ/G Linux Platform Tools | <p>When using RZ/G Linux Platform Tools, gnu.io.rtx plug-ins should be installed same as Nebula plug-ins.</p> <p>Please follow the below steps to install gnu.io.rtx plug-ins.</p> <p>Start the e² studio and select [Help] -> [Install New Software] from the menu bar to open the [Install] dialog box.</p> <p>Click on the [Add] button, enter "GNU RXTX Plugin Update Site" as a name and "http://rtx.qbang.org/eclipse/" as a location, and click on the [OK] button.</p> |



Select [RXTX 2.1-7r4] -> [RXTX End-User Runtime] from the list, click on the [Next] button, confirm the license, and install the plug-ins.



- 32564 MyRenesas Due to differences in the login data between 7.8 and the 2020-04 e² studio (or later) version the FreeRTOS download feature does not work in 7.7/8 if the user has logged into MyRenesas or changed their login data details using 2020-04. If you previously used 7.7/8 prior to using 2020-04 and have not changed your login details, then both versions will work correctly.

If you need to use MyRenesas in older versions of e² studio after logging in using 2020-04 then you will need to close all e² studio instances and delete the file "%USERPROFILE%\eclipse\org.eclipse.equinox.security\secure_storage". Be aware that doing this will remove stored passwords for any Eclipse-based application.

- 32543 QE When updating e² studio versions using an installer any installed QE tools are removed and then must be reinstalled. To preserve QE tools during an update use the "Check for Updates" function in the "Help" menu to perform an in-place online update.

- 30613 RH850 When viewing flash memory in the Memory View, it can be confusing as the values for this memory type can be random for unwritten blank flash memory regions.

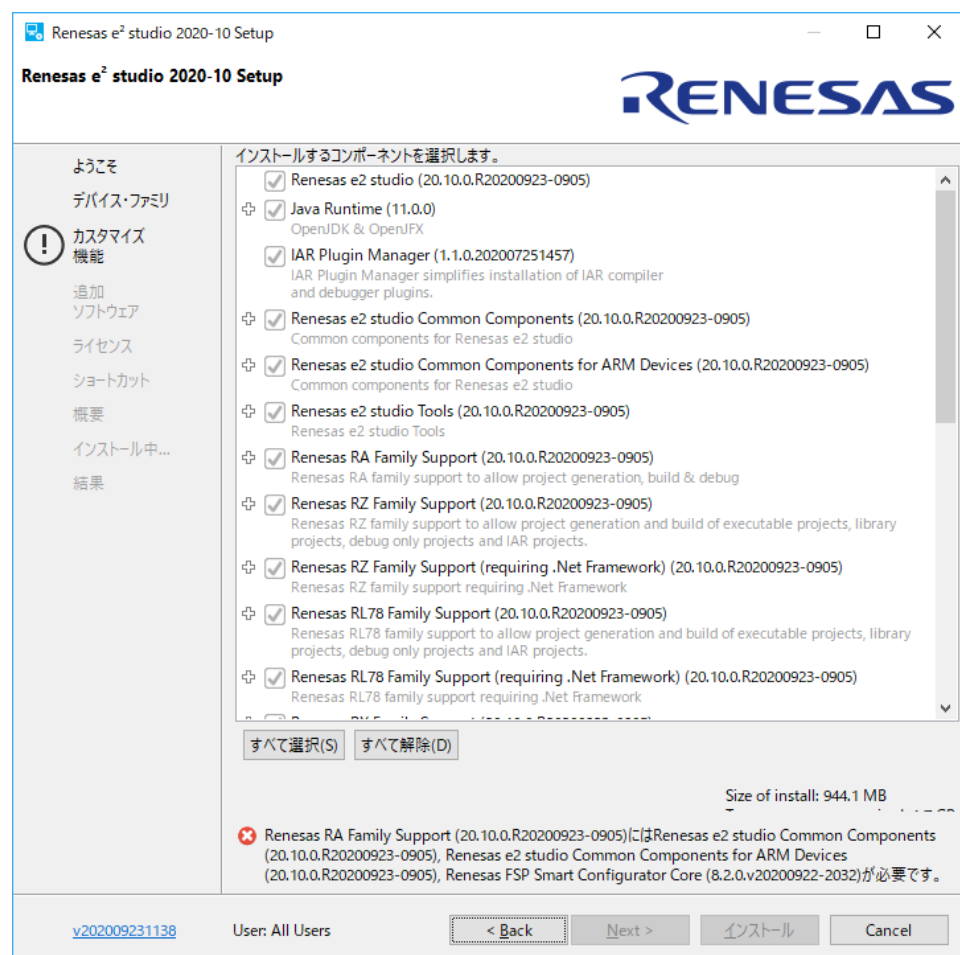
This can then result in many false positives for memory changes, resulting in more memory changes than expected. (red text)

To fix this the debugger supports detection and filling of blank addresses areas with a user specified hex byte value.

There is currently no user interface support for this feature. So, you need to add the following command parameters to the additional commands section of the debug configuration. The GDB command line option is: `-uBlankFlashFill=BB` with the blank fill value being 0xBB. Specifying this value enables the feature, by default it is off.

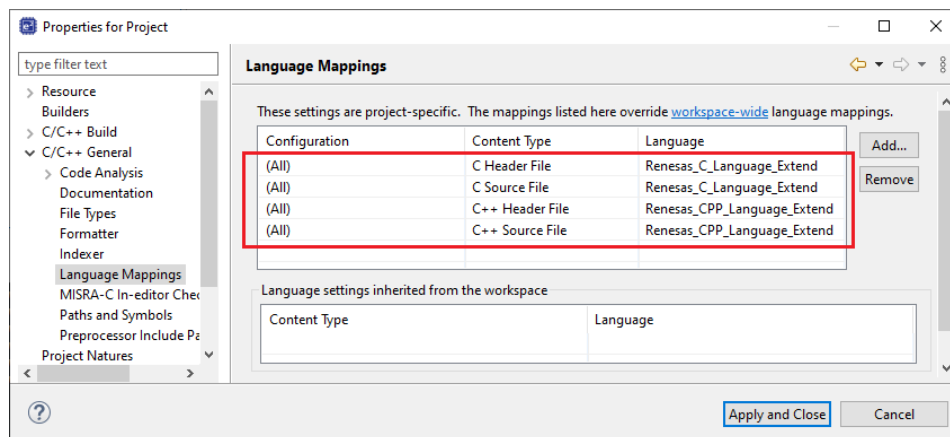
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| 37443 | RA (Linux) | CMSIS Pack Import feature does not work for RA on Linux |
| 36999 | RA | Deleting the Debug folder from an NS project causes build failure when reference NSC guard functions. |
| 36007 | RA | When debugging a secure and non-secure project - the Non-secure callable functions do not have debug information. This means you cannot set breakpoints in the secure function. |
| 35767 | RA, RZ (Linux) | When importing an image using the "Image" Rendering on Linux Host the action fails. If you need to import an image on Linux please use the Raw Image memory rendering instead. |
| 38324 | RA | When upgrading an e ² studio 2020-04 or 2020-07 containing RA Family support to 2020-10 or later using the installer you may encounter on the features page. |

To avoid this, you either need to re-select RA on the Device Family selection page or uncheck and check again "Renesas FSP Smart Configuration Core" on the Features page.



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| IDE-39932 | RX | The Renesas ITRON debug views is only supported with e ² studio 32bit version such as 7.8.0 currently. Enabling the Renesas ITRON debug views on e ² studio 64bit version is under planning. |
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| IDE-42025 | RL | After conversion of legacy GCC projects to LLVM, the generated linker_script and start.S files should be moved to src folder. "generate" folder needs to be deleted and the path to the linker script from Settings-> Linker-> Linkerscript should be change to "\${ProjDirPath}/src/linker_script.ld" |
| | RA | When migrating from FSP versions before 3.0 the way pin configuration files are handled has changed. Previously the projects maintained ".pincfg" files within the project directory which contained the pin data. When migrating to FSP 3.0 and the subsequently saving the migrated configuration.xml the pin data is migrated from these files to the configuration.xml file. The ".pincfg" files will still appear in the pin tab until they are subsequently removed. |
| IDE-44277 | All | From e ² studio 2021-07 the RTOS debugging integration has been switched off by default due to some debug stability problems. This feature can be unstable with some RA projects. If you wish to switch this back as it may work for you, you can do so from the debug configuration settings pages. This can be accessed via the Run->Debug Configurations menu item or via the project context menu Debug As->Debug Configurations. |
| IDE-43524 | | Symbols of inline assembler instruction could not be resolved on C/CPP standard language. They can be resolved on Renesas C/CPP Language Extend. +Renesas C/CPP Language Extends are added in Language Mappings of new project on e ² studio v2021-07. +Renesas C/CPP Language Extends need to be added manually, if old project is imported to e ² studio v2021-07. |



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| IDE-43405 | RA, Synergy | Microsoft have updated and improved the TraceX tool which can now be downloaded from the Microsoft Store. If you are using a new version of TraceX when configuring the tool, ensure you have checked the "Use TraceX installed from Microsoft Store" option. If you are using an older version, then uncheck this box. The configuration dialog is available in the preferences dialog. (Window->Preferences) (Renesas->TraceX category) |
| IDE-34814 | RL, RX | The CCRX and CCRL build components now support multiple output formats for Converter tool instead of one format as previous version. If you migrate an old project to the new e ² studio and then return to the old e ² studio with the old output format. You will need to modify the settings as desired. |

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| IDE-43454 | RA, RZ | <p>The Linux installer for e2 studio cannot be run as root by default, including using "sudo". If you wish to run it as root, then you need to add "--appimage-extract-and-run" as the 1st argument. e.g., "sudo ./e2studio_installer-2021-07.AppImage --appimage-extract-and-run"</p> |
| IDE-47790 | RH850 | <p>Synchronous mode is supported in e2 studio 2022-01 for debugging RH850 multi-core devices.</p> <p>There is no need to manually switch between synchronous mode and asynchronous mode, and the mode automatically switches to the optimum mode depending on the debug operation.</p> <p>Basic specifications for mode switching:</p> <p>When all cores are stopped and [Resume All], the operation mode becomes synchronous mode.</p> <p>Resume for one core switches to asynchronous mode and continues in asynchronous mode until all cores have stopped.</p> <p>Always use sync mode under the following conditions:</p> <ul style="list-style-type: none"> * In that case, the operation of the [Resume] button will be the same as the operation of the [Resume All] button. -Software breakpoint has been set. -Connected with a hot plugin connection. -Connected with a Initial Stop State debugging enabled. <p>Synchronous mode specifications:</p> <ul style="list-style-type: none"> -The [Resume All] button executes all cores. -When a core is suspended due to a breakpoint or the [Suspend] button, all cores are suspend. -For the [Step Into] button, all cores will step in. -For the [Step Over] button, all cores will be executed. Then, when the currently active core completes the step over execution, all cores will be suspend. -For the [Step Return] button, all cores will be executed. Then, when the currently active core completes the step return execution, all cores will be suspend. <p>Asynchronous mode specifications:</p> <ul style="list-style-type: none"> -[Resume] button executes the currently active core. -Suspend on one core due to a breakpoint or the [Suspend] button does not affect the behavior of the other cores. -Unable to set software breakpoints. <p>Specifications of each button related to execution control:</p> <p>[Resume] button: Switch to asynchronous mode and run the core currently being debugged.</p> <p>[Suspend] button: In asynchronous mode, stop the core currently being debugged. In synchronous mode, stop all cores.</p> <p>[Resume all] button: Switch to synchronous mode and run all cores.</p> <p>[Suspend all] button: Stop all cores and switch to synchronous mode.</p> <p>Limitations:</p> <ul style="list-style-type: none"> -When use Step Into in synchronous mode, cores that are not debugged are also stepped, but the execution addresses of those cores are not reflected in the debug view. Check the register view for the correct PC value. |
| IDE-48013 | RX | <p>The following BSP packages have been removed from the RX Smart Configurator:</p> <ul style="list-style-type: none"> ● r_bsp_gcc_v1.00.zip |

- r_bsp_gcc_v1.10.zip
- r_bsp_gcc_v1.20.zip
- r_bsp_gcc_v1.30.zip
- r_bsp_iar_v1.00.zip
- r_bsp_iar_v1.10.zip
- r_bsp_iar_v1.20.zip
- r_bsp_user_v1.10.zip
- r_bsp_user_v1.20.zip
- r_bsp_user_v1.30.zip
- r_bsp_v3.80.zip
- r_bsp_v3.91.zip
- r_bsp_v4.00.zip
- r_bsp_v4.01.zip
- r_bsp_v5.20.zip
- r_bsp_v5.21.zip
- r_bsp_v5.40.zip
- r_bsp_v5.50.zip
- r_bsp_v5.61.zip
- r_bsp_v5.62.zip
- r_bsp_v5.63.zip
- r_bsp_v5.64.zip

To continue using the above listed BSP packages, please use the download function in Smart Configurator to download the exact version.

IDE-46896 GCC Plugins

Projects imported from Windows fail when being built in Linux.

If copying a project with its build output directory between Windows & Linux, or moving it to a new location, you need to do a clean and rebuild to avoid build errors.

If storing a project under version control avoid including the build output directories. At a minimum exclude the *.d files which may contain system specific paths.

6. Linux version

6.1 How to install

For information on how to install the Linux product please refer to FAQ below.

English : <https://en-support.renesas.com/knowledgeBase/19934358>

Japanese : <https://ja-support.renesas.com/knowledgeBase/19934356>

6.2 How to run

- A. Run 'terminal' application of Linux.
- B. Move installed directory and Run 'e² studio' binary file.

6.3 Register toolchain to e² studio

6.3.1 GNU ARM Embedded

Install the GNU ARM Embedded toolchain to a shared folder as follows:

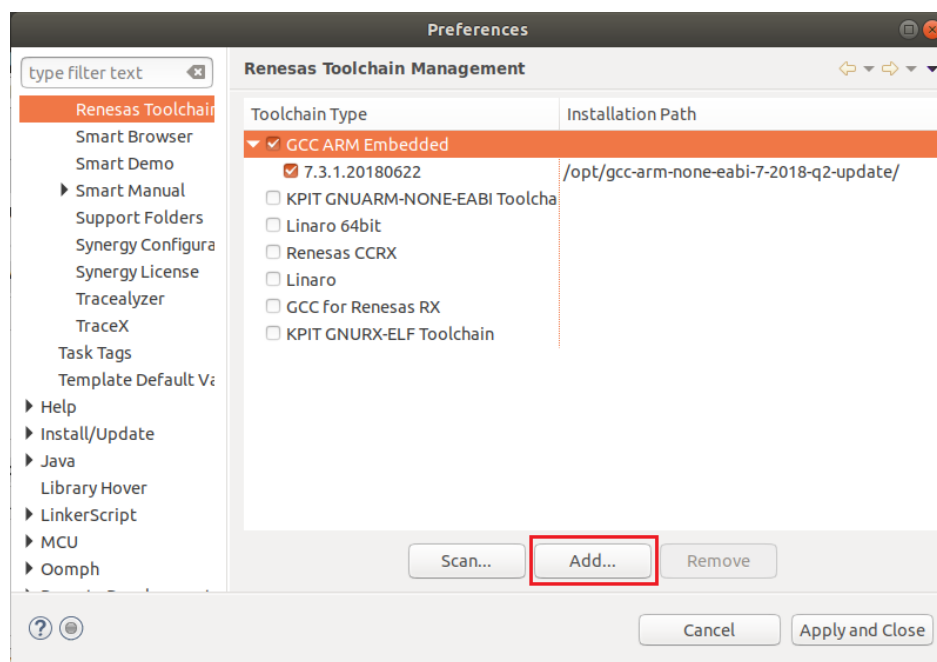
```
sudo mkdir -p /opt
```

```
cd /opt
```

```
sudo tar jxf ~/Downloads/gcc-arm-none-eabi-7-2018-q2-update-linux.tar.bz2
```

(assuming the toolchain has been downloaded to your Downloads folder)

On first invocation you will be prompted to specify a workspace location, you will also be advised that there are no new toolchains available for integration. Open the Renesas Toolchain Management preference page using the Help → Add Renesas Toolchains menu item, then click on the Add... button and navigate to the root folder of the GNU ARM Embedded toolchain installation at /opt/gcc-arm-none-eabi-7-2018-q2-update in order to register the toolchain with e² studio:



6.3.2 Linaro

- Download and extract a toolchain package file to arbitrary directory.
- Run 'e² studio' and select 'Help – Add Renesas Toolchains'
- Select 'Toolchain Type' and 'Add' Location of toolchain.

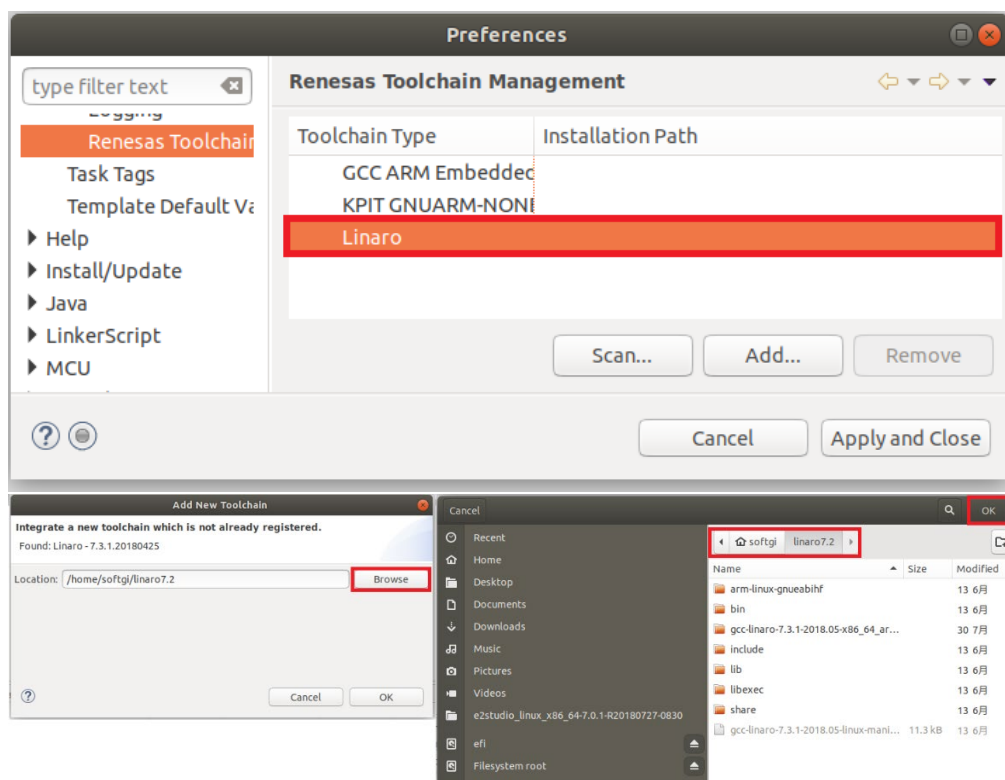


Figure 2. Register Toolchain: Browse toolchain location

- Click checkbox of added toolchain and restart e² studio.

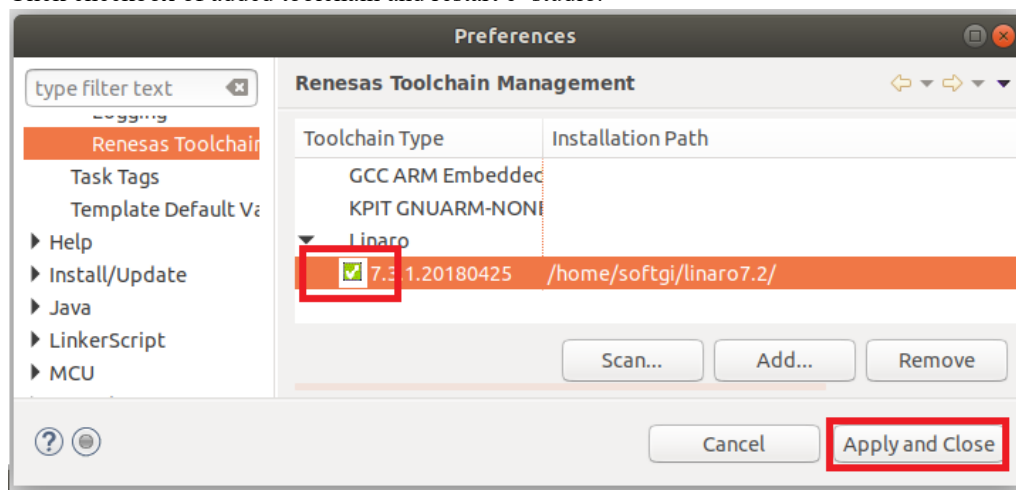


Figure 3. Register Toolchain: ex) Linaro

6.4 How to build and debug RA applications Overview

6.4.1 Build

Open the New project wizard and chose an RA project.

If this is unavailable it is likely the FSP has not been installed correctly. In this case, quit e² studio, reinstall the pack(s) and restart e² studio again

Once the wizard completes a sample project will have been created, as well as a debug configuration for connecting the debugger.

6.4.2 Debug

Once the project has successfully built and produced a build artefact for debug, open the Debug Configurations dialog and a browse to the Renesas Hardware Debug section

The debug configuration will match the project name – check that the settings are correct and hit Debug to connect to the device.

Checks if connection fails.

If the debug connection fails it is often for one of two reasons:

1. If using a virtual machine, make sure that the device is tied into the VM rather than the host machine.
2. If the Segger library has not installed as part of the FSP correctly open the
“/home/user/.eclipse/com.renesas.platform_XXXXXXX/DebugComp/RA/ARM/Segger”
folder and copy and paste the 'libjlinkarm.so' into the other Segger folders - e.g. 'Segger_v6.50.1'.
Alternatively, take the latest file from the Segger Tools installation folder and install to the same place.

6.5 How to build and debug RZ Linux application Overview

e² studio for Linux supports building and debugging Linux applications for devices of RZ/A Group and RZ/G Group. For debugging by GDB (the GNU Project Debugger), please add Linux programs gdb-server program to Linux file system of devices and run as background process automatically. (ssh-server, tcf-agent will be needed for connection between host system and target device.) For detail about building Linux image for RZ family devices, refer to embedded Linux wiki pages (<https://elinux.org>) or Renesas Rulz web pages about RZ family (<https://renesasrulz.com/rz>). Descriptions in below is based on RZ/A1H case.

6.5.1 How to add gdb-server to RZ/A Linux root file system

- A. Build root file system of RZ/A1 Linux-4.9 BSP.
(path example: ~/rza_linux-4.9_bsp/, command example: ./build.sh buildroot)
- B. Move to 'buildroot-***' directory in 'output'.
(path example: ~/rza_linux-4.9_bsp/output/buildroot-2017.02)
- C. Run menuconfig (make menuconfig) and add gdb-server.
(Select 'Toolchain—Copy gdb server to the Target' menu)

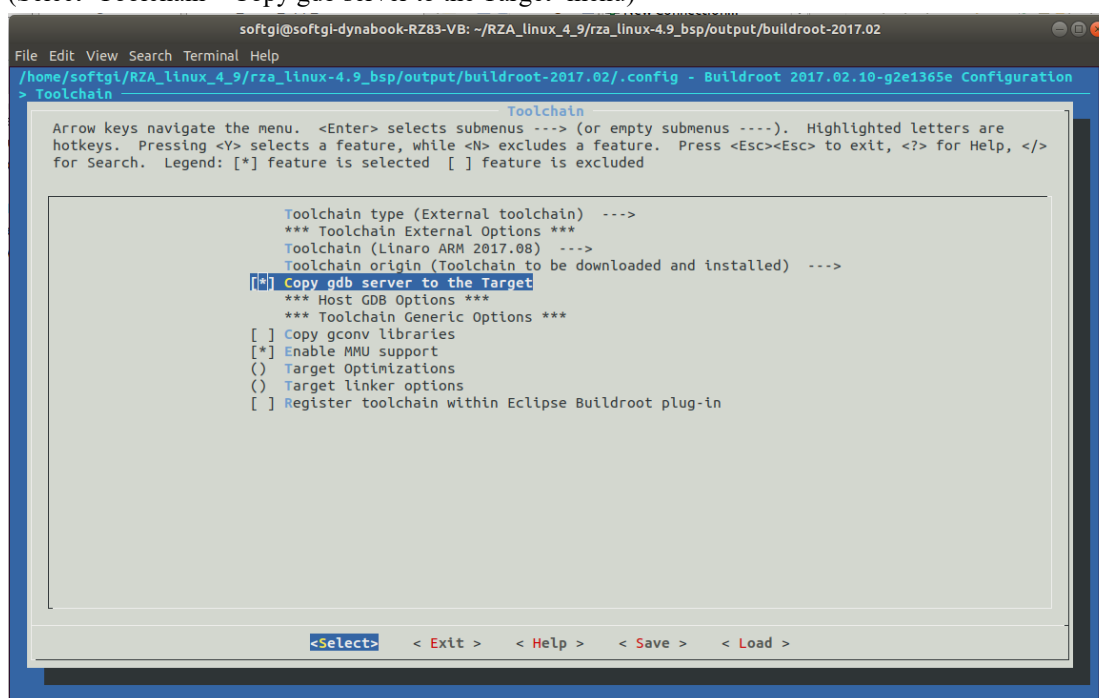


Figure 4. Menuconfig: set 'copy gdb server to the target'

- D. Move to 'target' directory in 'output' of 'buildroot-****'.
(path example: ~/rza_linux-4.9_bsp/output/buildroot-2017.02/output/target)
- E. Add new file with a line as command at '/etc/init.d' directory

| |
|---|
| File name: S51gdbserver Command: /usr/bin/gdbserver --multi --remote-debug /dev/ttySC0 |
|---|

- F. Delete or disable below contents from etc/inittab.

| |
|---|
| <pre># Put a getty on the serial port # ttySC0::respawn:/sbin/getty -L ttySC0 115200 vt100 # GENERIC_SERIAL</pre> |
|---|

- G. Move 'Linux-4.9 BSP root' (path example: ~/rza_linux-4.9_bsp/) and build root file system again. Download root file system at target device.

6.5.2 Linux C/C++ Project generation and build

- A. Connect target device which is run as Linux, via Serial port.
- B. Select 'File – New - RZ Linux C/C++ project' menu and make new RZ/A1H Linux C/C++ project. In phase of 'RZ Linux connection settings', the serial port which is used for connecting target device, will be selected automatically.

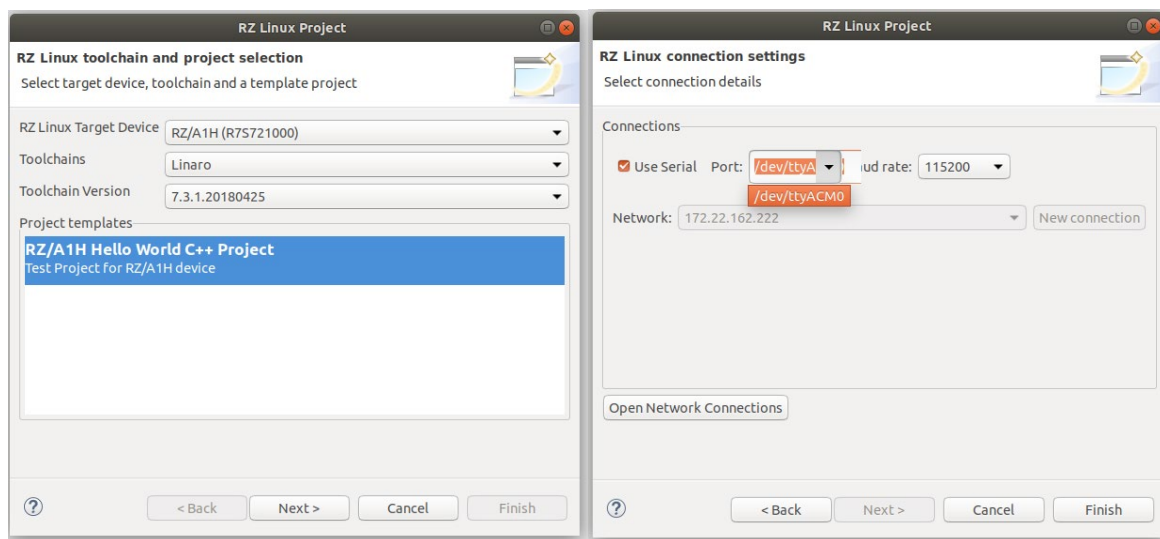


Figure 5. New RZ Linux project & connection setting: Serial port

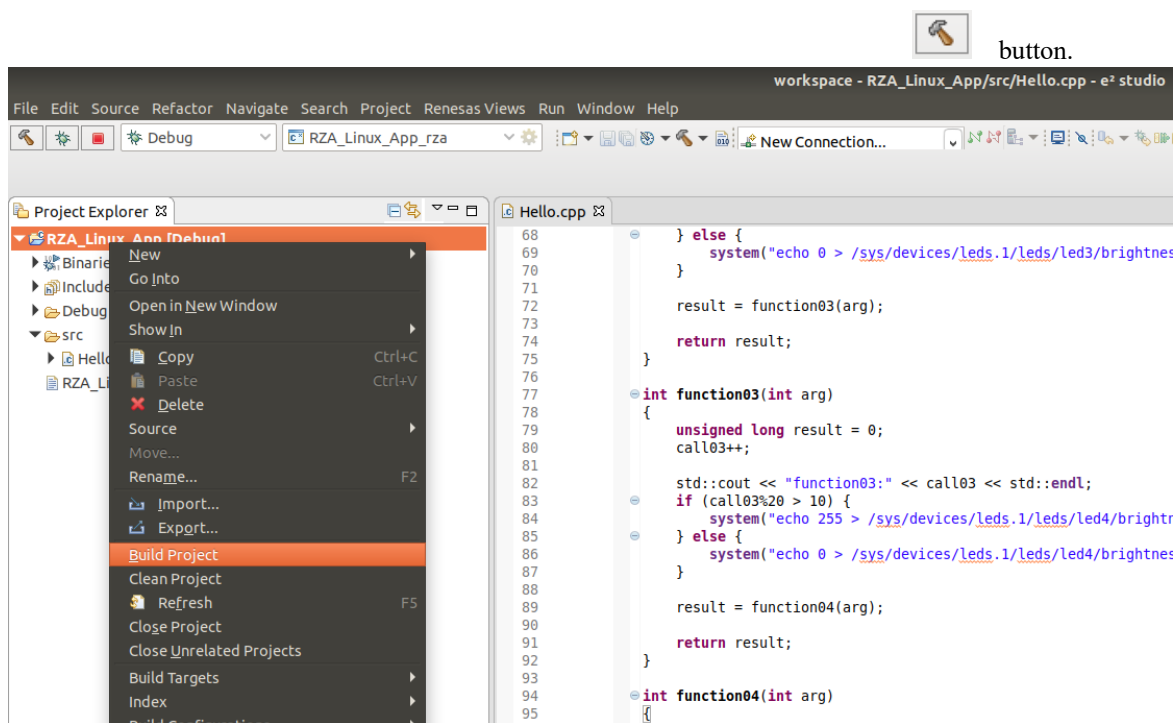


Figure 6. Build Project

6.5.3 GDB debug by using serial port communication

- Terminate all processes use serial port communication such as Minicom.
- Open 'Configuration' and check 'Serial' is selected as 'Connection'.

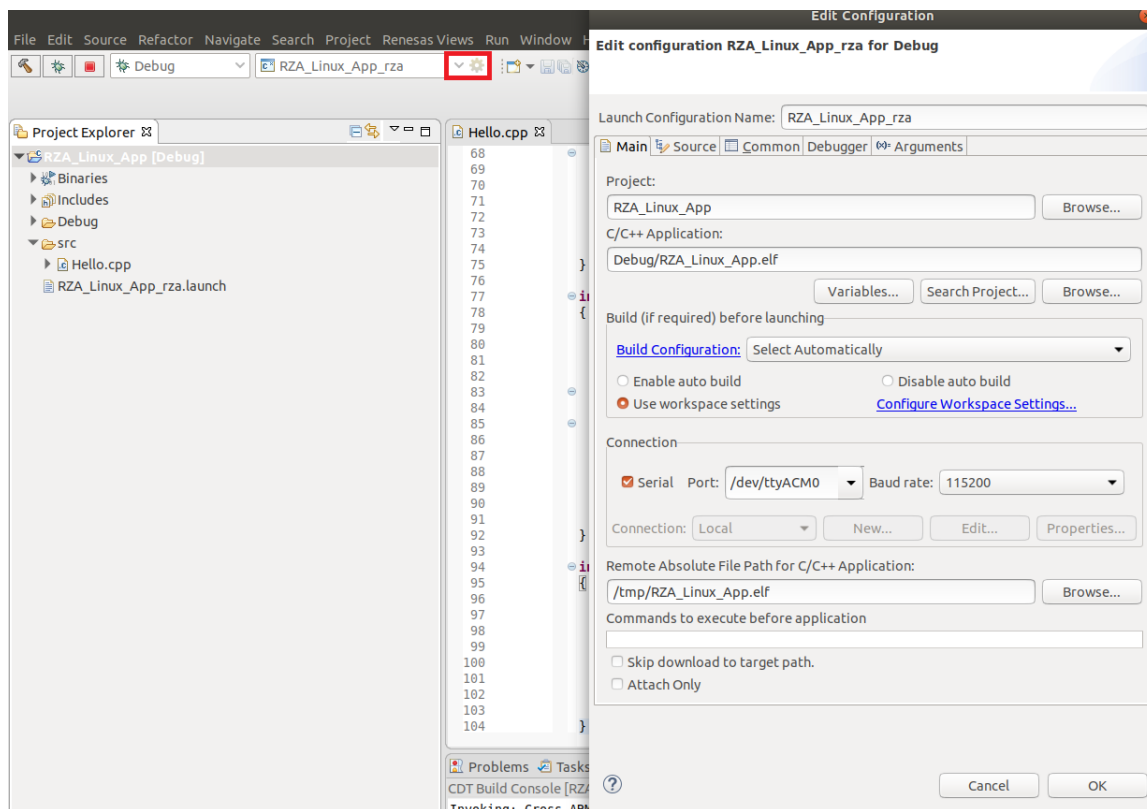


Figure 7. Connection configuration: Serial

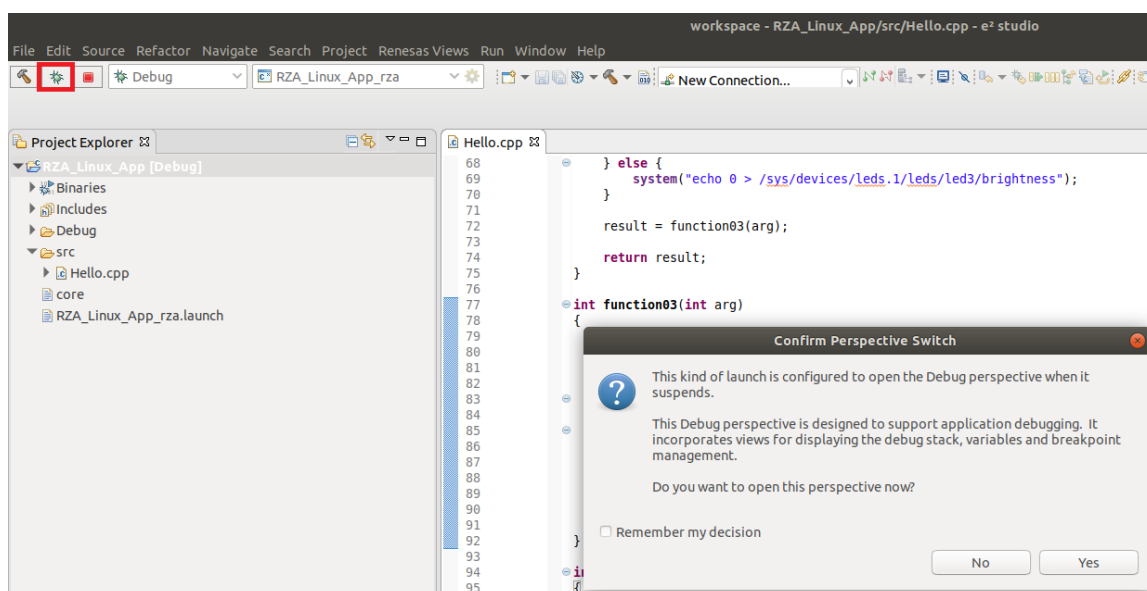


Figure 8. Debug: Perspective Switch

- D. ‘Debug Perspective’ provide ways for flow controls and configurations. This public beta version e² studio for Linux doesn’t have console view for showing result of the program.
(Under development) For more detail, please see user manuals of e² studio Windows edition.

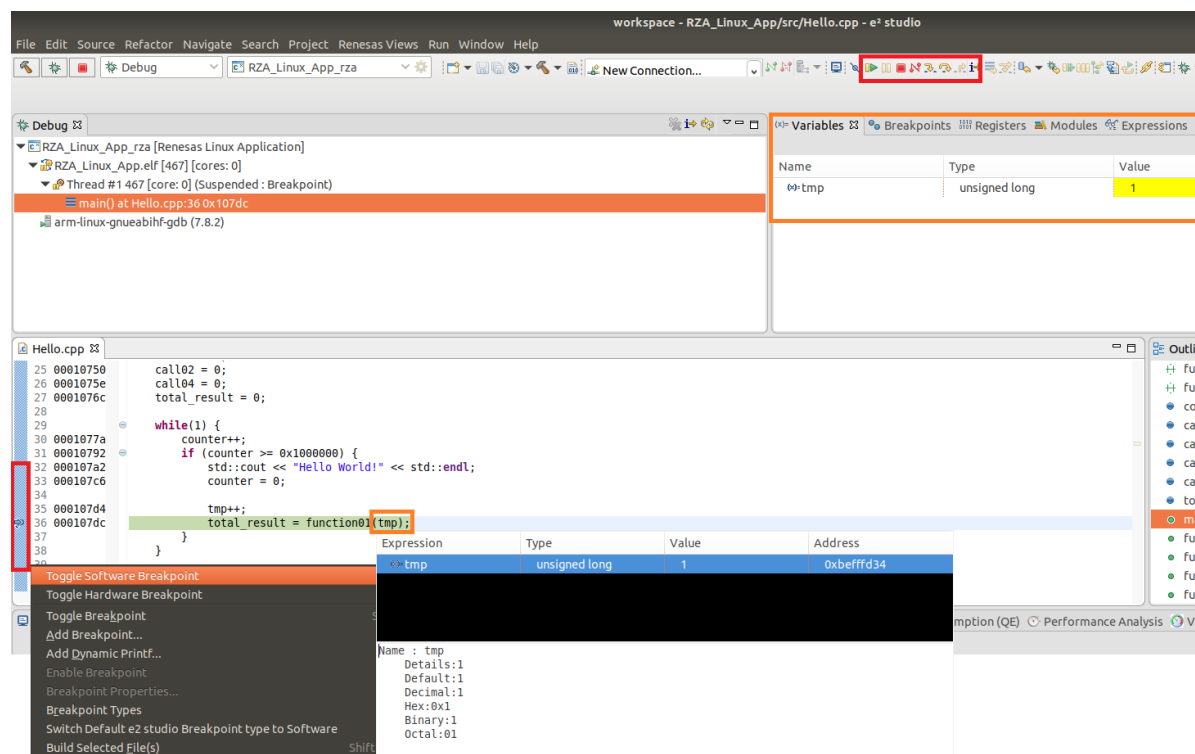


Figure 9. Debug: Control buttons, views, setting break point

7. Open Issues in 2022-01

Open issues in the e² studio 2022-01 product will be kept up to date [here](#):

Please visit to see the latest open issue list.

8. Appendix

8.1 Website and Support

Renesas Electronics Website

<http://www.renesas.com/>

Inquiries

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Corporate Headquarters

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