e² studio 2023-07 (2023-07.R20230714-1443)

Release Note

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Introduction

This document outlines the device support, new features added in 2023-07, fixed issues and open issues in e² studio 2023-07.

Contents

1. Product Information

1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Windows 10 64-bit
- Windows 11 64-bit

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

- Ubuntu 20.04 LTS
- Ubuntu 22.04 LTS

No other Linux distributions are officially supported by e² studio.

e² studio now runs on Java 17 & 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 (32-bit) of e² studio are compatible with 64-bit e² studio.

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

- System: x64 based processor, 2 GHz or faster, CPU has dual cores or more
  - Windows® 11 (64-bit version)
  - Windows® 10 (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. This software will be installed at the same time as the e² studio.

For Linux

- System: x64 based processor, 2 GHz or faster, CPU has dual cores or more
  - Ubuntu 20.04 LTS Desktop (64-bit version)
  - Ubuntu 22.04 LTS Desktop (64-bit version)
- 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 some different levels of tooling.

The Linux product supports RX, RL78, RH850, RA, RZ and DA.

Synergy and RE are not supported under Linux host OS.

RX, RH850, RL78 are added in 2023-01 for the first time for Linux host OS. The feature set for these families are reduced under Linux.

- RX: Toolchain support only GCC, debug support E2/E2 Lite Emulator and Segger J-link. No Renesas simulator support.
- RL78: Toolchain support only GCC and LLVM, debug support for E2/E2 Lite Emulator. No Renesas simulator support.
- RH850: No toolchain support apart from Green Hills and IAR. Debug support for E2 Emulator.

The Code Generator is not supported under the Linux host OS.

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	Yes
RL78	Yes	Yes
RX	Yes	Yes
RZ	Yes (No RZ/G Linux Platform Tools)	Yes
Synergy	Yes	No
DA	Yes	Yes

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	Yes	No
	RX	Yes (CC-RX)	No	Yes	Yes	No
	RH850	Yes (CC-RH)	No	No	Yes	Yes
	RZ/ARM	No	No (*1)	Yes	Yes	No
	Synergy/ARM	No	Yes	No	Yes	No
	RA/ARM	No	Yes	No	Yes	No
	RE/ARM	No	Yes	No	Yes	No

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:

*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.

Device Family	GCC distribution and version
RZ/A1, A2	9.3.1 (2020 q2)
RZ/A3UL	FSP 1.0.0: AArch64 bare-metal 10.3.2021.07 FSP 1.1.0: AArch64 bare-metal 10.3.2021.07 FSP 1.2.0: AArch64 bare-metal 10.3.2021.07 FSP 1.2.1: AArch64 bare-metal 10.3.2021.07 FSP 2.0.0: AArch64 bare-metal 10.3.2021.07
RZ/G1, G2 (Cortex-A)	Linaro 7.4.1
RZ/G2L (Cortex-M33)	FSP 1.0.0: 9.2.1(2019q4) FSP 1.1.0: 9.2.1(2019q4) FSP 1.2.0: 9.2.1(2019q4)
RZ/N2L	FSP 1.0.0: 9.3.1(2020q2) FSP 1.1.0: 9.3.1(2020q2) FSP 1.2.0: 9.3.1(2020q2)
RZ/T2M	FSP 1.0.0: 9.3.1(2020q2) FSP 1.1.0: 9.3.1(2020q2) FSP 1.2.0: 9.3.1(2020q2)
RZ/T2L	FSP 1.2.0: 9.3.1(2020q2)
RZ/V2L	FSP 1.0.0: 9.2.1(2019q4) FSP 1.1.0: 9.2.1(2019q4)
Synergy	SSP 1.6.x: 7.2.1 SSP 1.7.x: 7.2.1 SSP 2.0, 2.1, 2.2 <-> 2.2: 9.2.1 and 7.2.1 SSP 2.3, 2.4: 10.3-2021.10
RA	FSP 3.5.0: 10.3-2021.10 FSP 3.6.0: 10.3-2021.10 FSP 3.7.0: 10.3-2021.10 FSP 3.8.0: 10.3-2021.10 FSP 3.9.0: 10.3-2021.10 FSP 4.0.0: 10.3-2021.10 FSP 4.1.0: 10.3-2021.10 FSP 4.2.0: 10.3-2021.10 FSP 4.3.0: 10.3-2021.10 FSP 4.4.0: 10.3-2021.10 FSP 4.5.0: 10.3-2021.10
RE	RE SDK 1.1.0: 6.3.1(2017 q2)

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)
- GNU Tools for ARM Embedded Processors for RA 10.3-2021.10
- GCC for Renesas 8.3.0.202204-GNURX Linux Toolchain (ELF)
- LLVM for Renesas RL78 10.0.0.202301 Linux Toolchain (ELF Format)

2. Device Support

2.1 Project Generator Support

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

Family	Group	Devices
DA	DA1459x	DA14595,(Debug Support Only)
	DA1469x	DA14691, DA14695, DA14697, DA14699,(Debug Support Only)
	DA1470x	DA14701, DA14705, DA14706, DA14708,(Debug Support Only)
	DA16200	DA16200,(Debug Support Only)
	DA16600	DA16600,(Debug Support Only)
EC-1	EC-1	R9A06G043
RA	RA2	R7FA2A1AB, R7FA2E1A5, R7FA2E1A7, R7FA2E1A8, R7FA2E1A9, R7FA2E2A3, R7FA2E2A5, R7FA2E2A7, R7FA2L1A9, R7FA2L1AB
	RA4	R7FA4E10B, R7FA4E10D, R7FA4E2B9, R7FA4M1AB, R7FA4M2AB, R7FA4M2AC, R7FA4M2AD, R7FA4M3AD, R7FA4M3AE, R7FA4M3AF, R7FA4T1B9, R7FA4T1BB, R7FA4W1AD
	RA6	R7FA6E10D, R7FA6E10F, R7FA6E2B9, R7FA6E2BB, R7FA6M1AD, R7FA6M2AD, R7FA6M2AF, R7FA6M3AF, R7FA6M3AH, R7FA6M4AD, R7FA6M4AE, R7FA6M4AF, R7FA6M5AG, R7FA6M5AH, R7FA6M5BF, R7FA6M5BG, R7FA6M5BH, R7FA6T1AB, R7FA6T1AD, R7FA6T2AB, R7FA6T2AD, R7FA6T2BB, R7FA6T2BD, R7FA6T3BB
RE	RE01B	R7F0E01BD2DNB
	RE01_1500KB	R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN
	RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG
RH850	C1H	R7F701260, R7F701270
	C1M	R7F701263, R7F701271
	C1M-A1	R7F701278
	C1M-A2	R7F701275
	D1L1	R7F701401, R7F701421
	D1L2	R7F701402, R7F701422
	D1M1	R7F701404, R7F701405
	D1M1-V2	R7F701442, R7F701462
	D1M2	R7F701408, R7F701410, R7F701428, R7F701430
	E1L	R7F701201, R7F701205
	E1M-S	R7F701202, R7F701204
	E1M-S2	R7F701215, R7F701216
	-	R7F701Z05, R7F701Z06, R7F701Z07
	F1H	R7F701501, R7F701502, R7F701503, R7F701506, R7F701507, R7F701508, R7F701511, R7F701512, R7F701513, R7F701526, R7F701527, R7F701528, R7F701529, R7F701530, R7F701531, R7F701534
	-	R7F701521, R7F701522, R7F701524, R7F701525

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
F1KH	R7F701708, R7F701709, R7F701710, R7F701711, R7F701714, R7F701715
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, R7F701A55, R7F701A56, R7F701A57, R7F701A58, R7F701A59, R7F701A60
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
F1M	R7F701544, R7F701545, R7F701548, R7F701549, R7F701552, R7F701553, R7F701564, R7F701565, R7F701568, R7F701569, R7F701572, R7F701573
P1H-C	R7F701370AEEBG, R7F701371EABG, R7F701372EABG, R7F701396EABG
P1L-C	R7F701388, R7F701389, R7F701390, R7F701391
P1M	R7F701304, R7F701305, R7F701310, R7F701311, R7F701312, R7F701313, R7F701314, R7F701315, R7F701318, R7F701319, R7F701320, R7F701321, R7F701322, R7F701323
P1M-C	R7F701373xABG, R7F701374xAFP, R7F701397xABG
P1M-E	R7F701375, R7F701376, R7F701377, R7F701378, R7F701379, R7F701380, R7F701381, R7F701382, R7F701383, R7F701384, R7F701385, R7F701386
-	R7F701060xAFP, R7F701062xAFP, R7F701064xAFP, R7F701065xAFP, R7F701067xAFP, R7F701069xAFP, R7F701071xAFP
U2A-EVA	R7F702Z19A, R7F702Z19B
U2A16	R7F702300, R7F702300A, R7F702300B
U2A6	R7F702302
U2A8	R7F702301, R7F702301A, R7F702301B
U2B10	R7F70254x_Fusa, R7F70254x_Performance, R7F702Z21, R7F702Z26

	U2B24	R7F702Z23, R7F702Z28
	U2B6	R7F70255x, R7F702Z22
RL78	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
	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
	F1A	R5F114GC, R5F114GD, R5F114GE, R5F114GF, R5F114GG
	F1E	R5F11KLE, R5F11KLF, R5F11KLG, R5F11LLE, R5F11LLF, R5F11LLG
	F23	R7F123FBG, R7F123FGG, R7F123FLG, R7F123FMG,(Debug Support Only)
	F24	R7F124FBJ, R7F124FGJ, R7F124FLJ, R7F124FMJ, R7F124FPJ
	FGIC	RAJ240055, RAJ240057, RAJ240090, RAJ240100, RAJ240310,(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

G13	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
G13A	R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL, R5F140PK, R5F140PL
G14	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
G15	R5F12007, R5F12008, R5F12017, R5F12018, R5F12047, R5F12048, R5F12067, R5F12068

G16	R5F1211A, R5F1211C, R5F1214A, R5F1214C, R5F1216A, R5F1216C, R5F1217A, R5F1217C, R5F121BA, R5F121BC
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
G1K	R5F11VBG, R5F11VLG
G1M	R5F11W67, R5F11W68
G1N	R5F11Y67, R5F11Y68
G1P	R5F11Z7A, R5F11ZBA
G22	R7F102G4C, R7F102G4E, R7F102G6C, R7F102G6E, R7F102G7C, R7F102G7E, R7F102G8C, R7F102G8E, R7F102GAC, R7F102GAE, R7F102GBC, R7F102GBE, R7F102GCC, R7F102GCE, R7F102GEC, R7F102GEE, R7F102GFC, R7F102GFE, R7F102GGC, R7F102GGE
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
G24	R7F101G6E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G8G, R7F101GAE, R7F101GAG, R7F101GBE, R7F101GBG, R7F101GEE, R7F101GEG, R7F101GFE, R7F101GFG, R7F101GGE, R7F101GGG, R7F101GJE, R7F101GJG, R7F101GLE, R7F101GLG
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, 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
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, R5F51405, R5F51406
	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
	23E-B	R5F523E5B, R5F523E6B
	23T	R5F523T3, R5F523T5
	23W	R5F523W7, R5F523W8
	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE
	24U	R5F524UB, R5F524UC, R5F524UE
	26T	R5F526T8, R5F526T9, R5F526TA, R5F526TB, R5F526TF, R5F526TF_DUAL
	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)
	65W-A	R5F565WE, R5F565WE_DUAL,
	660	R5F56604A, R5F56604B, R5F56604C, R5F56604D, R5F56604E, R5F56604F, R5F56604G, R5F56604H, R5F56609A, R5F56609B, R5F56609C, R5F56609D, R5F56609E, R5F56609F, R5F56609G, R5F56609H
	66N	R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL
	66T	R5F566TA, R5F566TAXXFL, R5F566TE, R5F566TEXXFL, 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
	-	R0E5571MLDMBXX,(Debug Support Only)
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
	A3UL	R9A07G063U01, R9A07G063U02
	G1E	R8A77450, R8A77450_Core1,(Debug Support Only)
	G1M	R8A77430, R8A77430_Core1,(Debug Support Only)
	G2L	R9A07G044C12GBG_CM33, R9A07G044C22GBG_CM33, R9A07G044L13GBG_CM33, R9A07G044L14GBG_CM33, R9A07G044L23GBG_CM33, R9A07G044L24GBG_CM33, R9A07G044LC_M33, R9A07G044L_M33
	G2UL	R9A07G043U11GBG_CM33, R9A07G043U12GBG_CM33
	N2L	R9A07G084M04, R9A07G084M08

	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
	T2L	R9A07G074M01, R9A07G074M04, R9A07G074M05, R9A07G074M08
	T2M	R9A07G075M01, R9A07G075M05, R9A07G075M21_CPU0, R9A07G075M21_CPU1, R9A07G075M22_CPU0, R9A07G075M22_CPU1, R9A07G075M24_CPU0, R9A07G075M24_CPU1, R9A07G075M26_CPU0, R9A07G075M26_CPU1, R9A07G075M27_CPU0, R9A07G075M27_CPU1, R9A07G075M28_CPU0, R9A07G075M28_CPU1
	V2L	R9A07G054L13GBG_CM33, R9A07G054L13_M33, R9A07G054L14GBG_CM33, R9A07G054L14_M33, R9A07G054L23GBG_CM33, R9A07G054L23_M33, R9A07G054L24GBG_CM33, R9A07G054L24_M33
Synergy	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
	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

2.2 Code Generator Support – Windows Host Only

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

G13	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
G13A	R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL, R5F140PK, R5F140PL
G14	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
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
	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

Family	Group	Devices
RL78	F23	R7F123FBG, R7F123FGG, R7F123FLG, R7F123FMG
	F24	R7F124FBJ, R7F124FGJ, R7F124FLJ, R7F124FMJ, R7F124FPJ
	G15	R5F12007, R5F12008, R5F12017, R5F12018, R5F12047, R5F12048, R5F12067, R5F12068
	G16	R5F1211A, R5F1211C, R5F1214A, R5F1214C, R5F1216A, R5F1216C, R5F1217A, R5F1217C, R5F121BA, R5F121BC
	G22	R7F102G4C, R7F102G4E, R7F102G6C, R7F102G6E, R7F102G7C, R7F102G7E, R7F102G8C, R7F102G8E, R7F102GAC, R7F102GAE, R7F102GBC, R7F102GBE, R7F102GCC, R7F102GCE, R7F102GEC, R7F102GEE, R7F102GFC, R7F102GFE, R7F102GGC, R7F102GGE
	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
	G24	R7F101G6E, R7F101G6G, R7F101G7E, R7F101G7G, R7F101G8E, R7F101G8G, R7F101GAE, R7F101GAG, R7F101GBE, R7F101GBG, R7F101GEE, R7F101GEG, R7F101GFE, R7F101GFG, R7F101GGE, R7F101GGG, R7F101GJE, R7F101GJG, R7F101GLE, R7F101GLG
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, R5F51405, R5F51406
	230	R5F52305, R5F52306
	231	R5F52315, R5F52316, R5F52317, R5F52318
	23E-A	R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S
	23E-B	R5F523E5B, R5F523E6B
	23T	R5F523T3, R5F523T5
	23W	R5F523W7, R5F523W8
	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE
	24U	R5F524UB, R5F524UC, R5F524UE
	26T	R5F526T8, R5F526T9, R5F526TA, R5F526TB, R5F526TF, R5F526TF_DUAL
	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
	660	R5F56604A, R5F56604B, R5F56604C, R5F56604D, R5F56604E, R5F56604F, R5F56604G, R5F56604H, R5F56609A, R5F56609B, R5F56609C, R5F56609D, R5F56609E, R5F56609F, R5F56609G, R5F56609H
	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
	A3UL	R9A07G063U01, R9A07G063U02
	N2L	R9A07G084M04, R9A07G084M08
	T2L	R9A07G074M01, R9A07G074M04, R9A07G074M05, R9A07G074M08
	T2M	R9A07G075M01, R9A07G075M05, R9A07G075M21_CPU0, R9A07G075M21_CPU1, R9A07G075M22_CPU0, R9A07G075M22_CPU1, R9A07G075M24_CPU0, R9A07G075M24_CPU1, R9A07G075M26_CPU0, R9A07G075M26_CPU1, R9A07G075M27_CPU0, R9A07G075M27_CPU1, R9A07G075M28_CPU0, R9A07G075M28_CPU1
	G2L	R9A07G044C12GBG_CM33, R9A07G044C22GBG_CM33, R9A07G044L13GBG_CM33, R9A07G044L14GBG_CM33, R9A07G044L23GBG_CM33, R9A07G044L24GBG_CM33, R9A07G044LC_M33, R9A07G044L_M33
	G2UL	R9A07G043U11GBG_CM33, R9A07G043U12GBG_CM33
	V2L	R9A07G054L13GBG_CM33, R9A07G054L13_M33, R9A07G054L14GBG_CM33, R9A07G054L14_M33, R9A07G054L23GBG_CM33, R9A07G054L23_M33, R9A07G054L24GBG_CM33, R9A07G054L24_M33
Synergy	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
	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	RA2	R7FA2A1AB, R7FA2E1A5, R7FA2E1A7, R7FA2E1A8, R7FA2E1A9, R7FA2E2A3, R7FA2E2A5, R7FA2E2A7, R7FA2L1A9, R7FA2L1AB
	RA4	R7FA4E10B, R7FA4E10D, R7FA4E2B9, R7FA4M1AB, R7FA4M2AB, R7FA4M2AC, R7FA4M2AD, R7FA4M3AD, R7FA4M3AE, R7FA4M3AF, R7FA4T1B9, R7FA4T1BB, R7FA4W1AD
	RA6	R7FA6E10D, R7FA6E10F, R7FA6E2B9, R7FA6E2BB, R7FA6M1AD, R7FA6M2AD, R7FA6M2AF, R7FA6M3AF, R7FA6M3AH, R7FA6M4AD, R7FA6M4AE, R7FA6M4AF, R7FA6M5AG, R7FA6M5AH, R7FA6M5BF, R7FA6M5BG, R7FA6M5BH, R7FA6T1AB, R7FA6T1AD, R7FA6T2AB, R7FA6T2AD, R7FA6T2BB, R7FA6T2BD, R7FA6T3BB
RE	RE01B	R7F0E01BD2DNB
	RE01_1500KB	R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN
	RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG

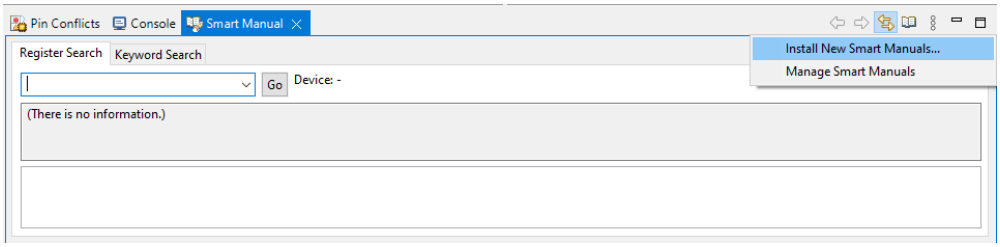
3. Smart Manual Support

Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of January 2023:

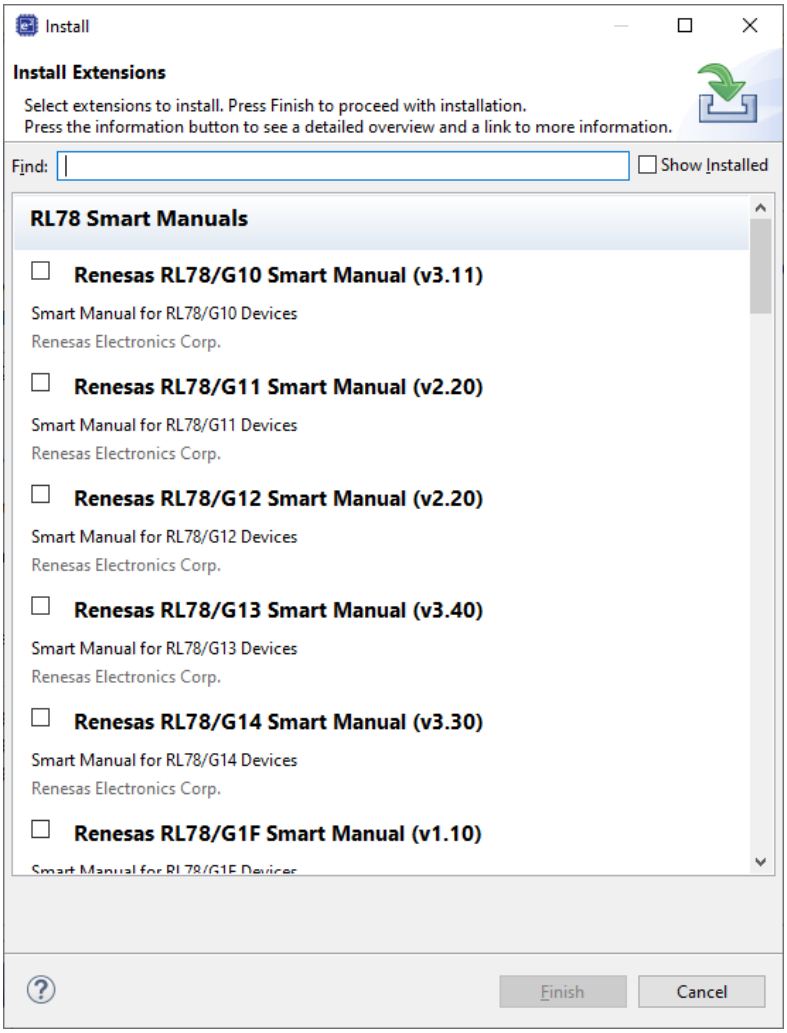
- RX110
- RX111
- RX113
- RX130
- RX13T
- RX140
- RX210
- RX220
- RX230
- RX231
- RX23E-A
- RX23W
- RX24T
- RX24U
- RX26T
- RX62G
- RX62T
- RX631
- RX63N
- RX63T
- RX64M
- RX651
- RX65N
- RX660
- RX66T
- RX66N
- RX671
- RX71M
- RX72M
- RX72N
- RX72T
- RL78/G10
- RL78/G11
- RL78/G12
- RL78/G13
- RL78/G14
- RL78/G15
- RL78/G16
- RL78/G1F
- RL78/G22
- RL78/G23
- RL78/L12
- RL78/L13
- RZ/A1H
- RZ/A1L
- RZ/A2M
- RZ/T1
- RZ/T2M
- RZ/N2L
- RA2E1
- RA2E2
- RA2L1
- RA4E1
- RA4E2
- RA4M2
- RA4T1
- RA6E1
- RA6E2
- RA6M4
- RA6M5
- RA6T2
- RA6T3

To view the Smart Manual support in e² studio please use the following method:

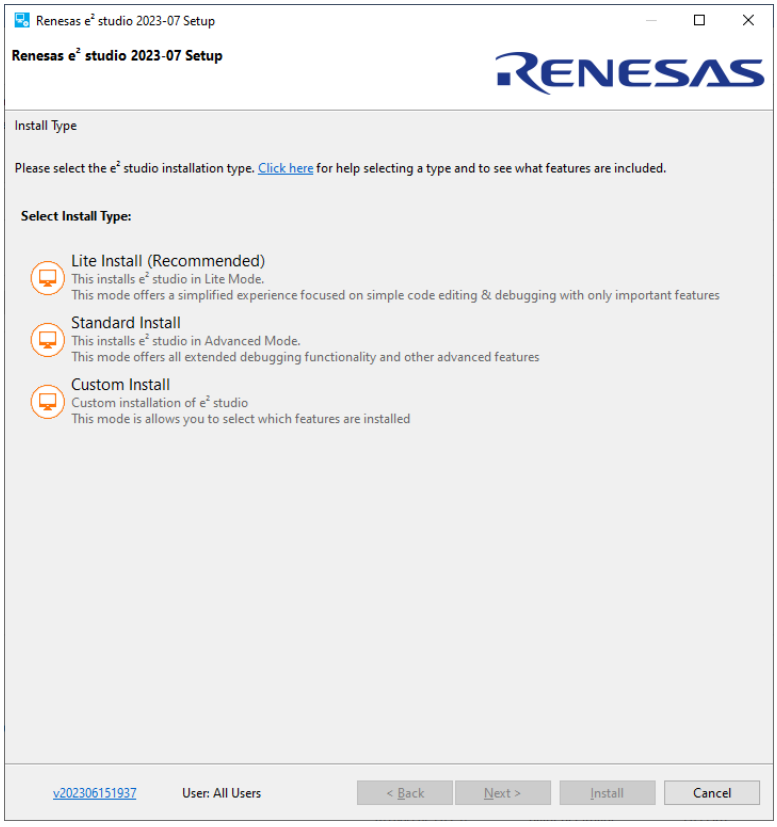
1. Please open the Smart Manual view. Available on the Renesas Views->Solution Toolkit->Smart Manual menu from the Menu bar.
2. Then use the “Install new Smart Manual…” option seen in the figure below:

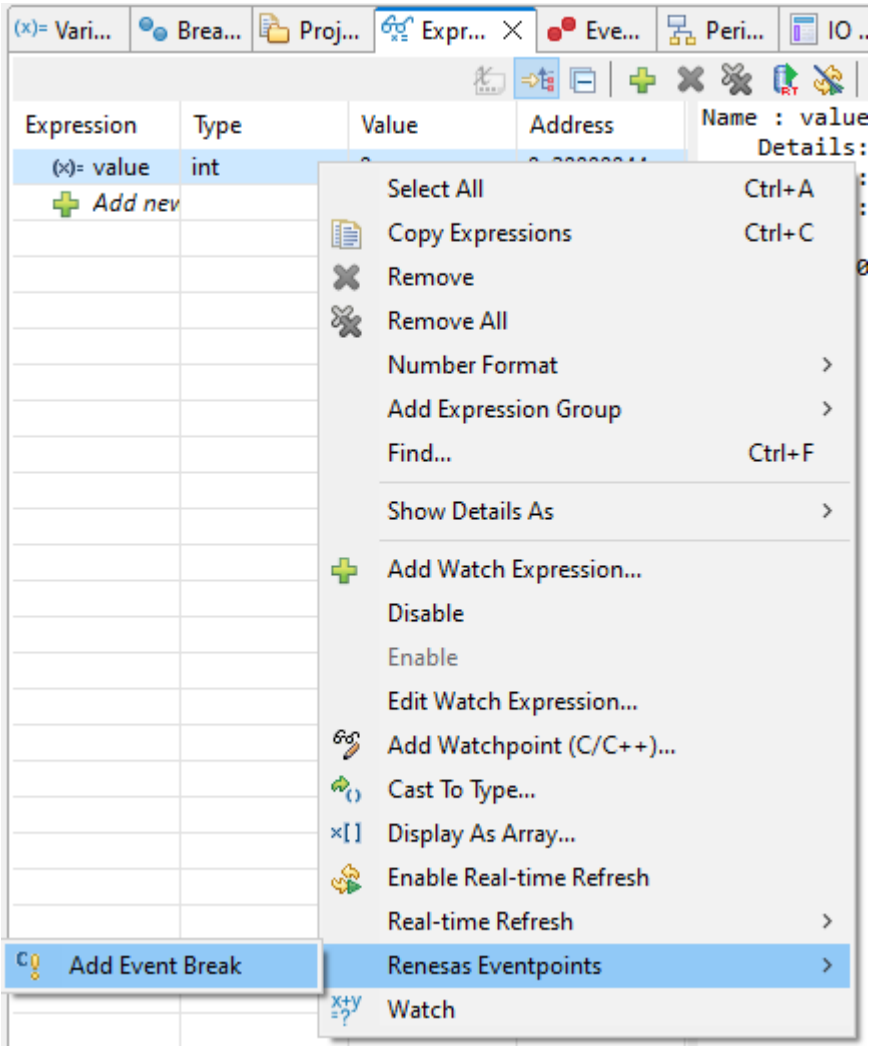


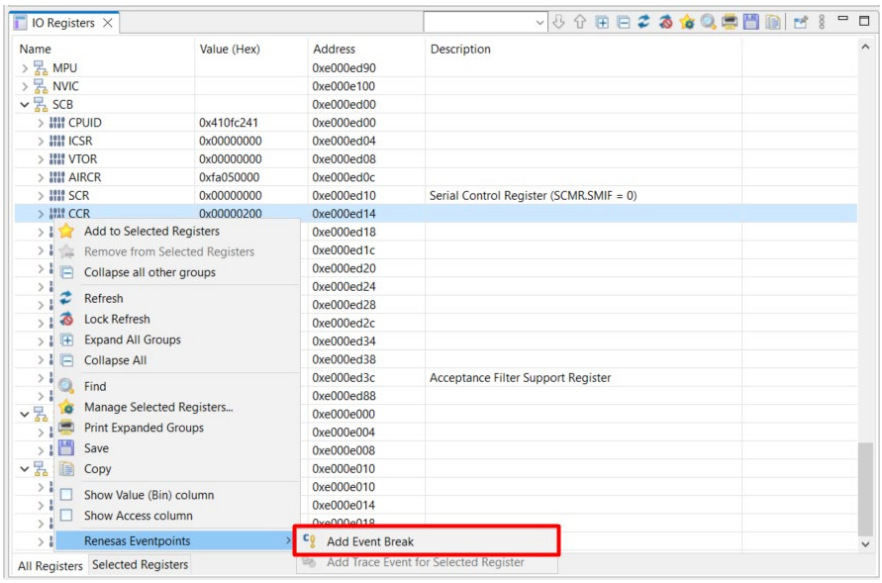
3. A dialog is then displayed which shows all available Smart Manuals.

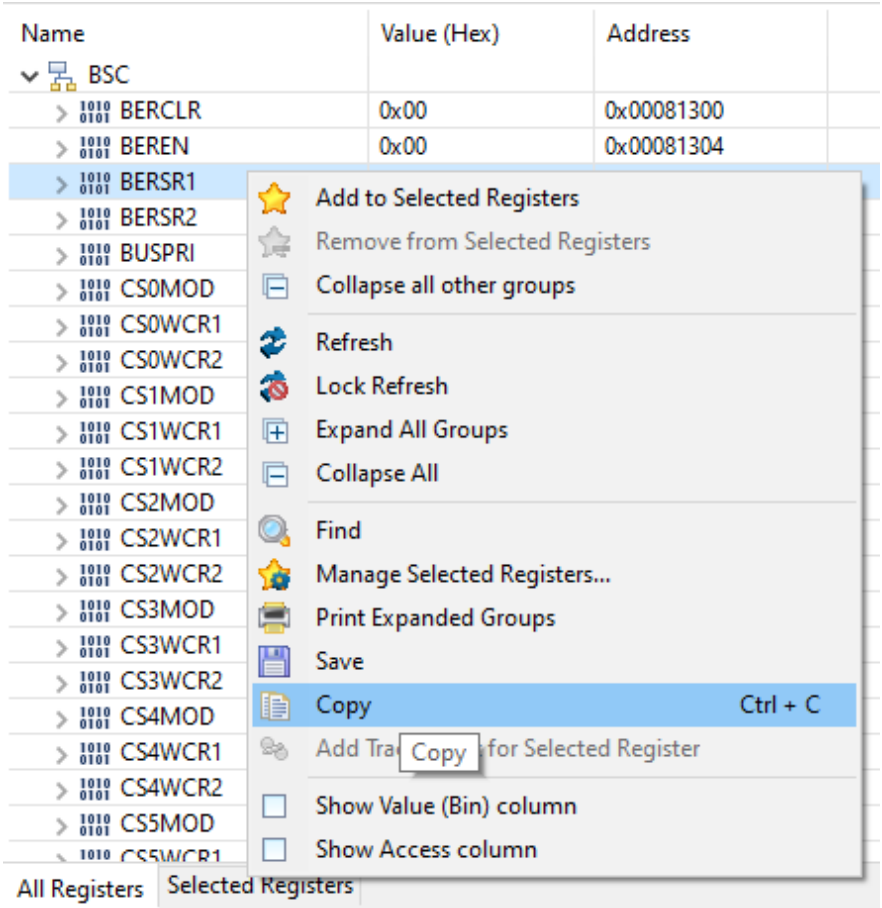


4. What is new in 2023-07?

Component	Device	Description
		The e² studio installer has been revised to include different modes of install to improve the ease of use for different use cases. We now have 3 modes to choose from: • Lite Install (Recommended) • Standard Install • Custom Install Lite Install mode provides a simplified experience focusing on simple coding and debugging. It includes all important features for normal development. The Standard Install mode provides everything you get in the Lite Install with additional features for more advanced and in-depth debugging. The Custom Install Mode gives you more control over what is installed and gives you various choices to customize your e² studio product install. A detailed list of what is installed in each mode is here: Renesas e² studio Features List
Installer	All	

CDT	All	CDT has been updated to 11.1.1. See CDT 11.1 New and Noteworthy
Eclipse	All	Eclipse Platform has been updated to 4.27. Details can be found here: Eclipse platform Release Information
Eventpoints	All	Improvements have been made to the IO Registers, Expressions view and Memory view that allows a faster way to create a hardware eventpoint for the selection in the view. The feature is available via the view pop-up menu and is named "Add Event Break". 
IO Registers	All	Configuring event points from the Eventpoints view is not always easy. The IO Registers view now provides the ability to create an event break on a selected register to the Eventpoints. Some event settings will also be automatically configured based on the register's information.



IO Registers	All	While debugging/analyzing problems often it is needed to save the state of the I/O registers so they can be later be analyzed/differenced with another state. It is now possible to select registers in the IO Registers window and copy to clipboard. 
IO Registers	All	You can now save all IO register info to a text file. Output from this feature can be seen below:

```
==========|===============|=============|=============|==========|==========|
Module     Register        Address       Value         Access     Size
==========|===============|=============|=============|==========|==========|
+BSC

           BERCLR          0x00081300    00            RW         B
               STSCLR        [0]           0
           BEREN           0x00081304    00            RW         B
               TOEN          [1]           0
               IGAEN         [0]           0
           BERSR1          0x00081308    00            RW         B
               MST           [6:4]         0
               TO            [1]           0
               IA            [0]           0
           BERSR2          0x0008130a    0000          RW         W
               ADDR          [15:3]        0
           BUSPRI          0x00081310    0000          RW         W
               BPEB          [13:12]       0
               BPFB          [11:10]       0
               BPHB          [9:8]         0
               BPGB          [7:6]         0
               BPIB          [5:4]         0
               BPRO          [3:2]         0
               BPRA          [1:0]         0
```

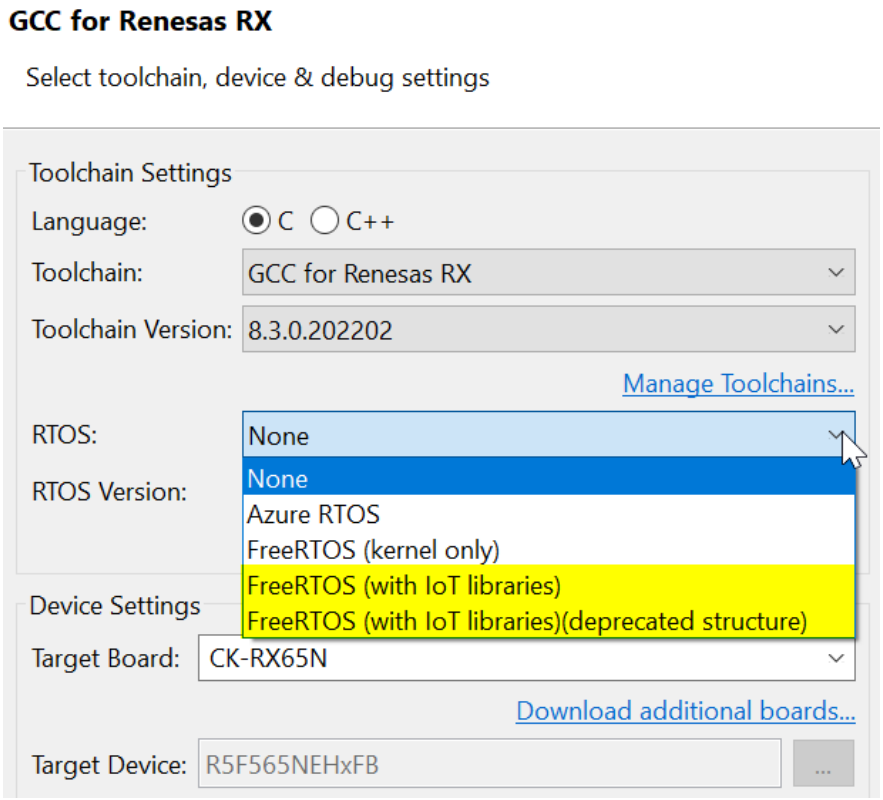
There is an improvement on project generation for FreeRTOS (with IoT libraries).

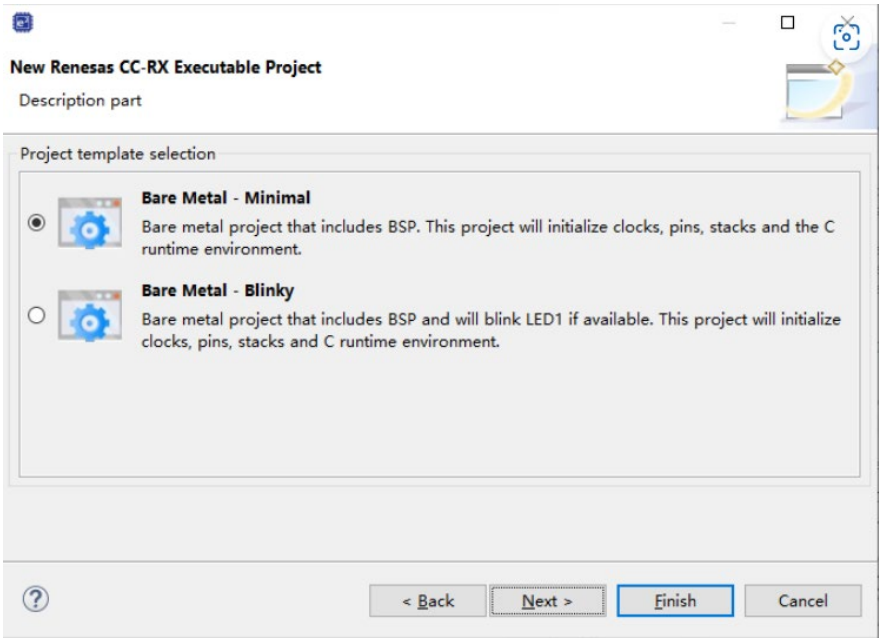
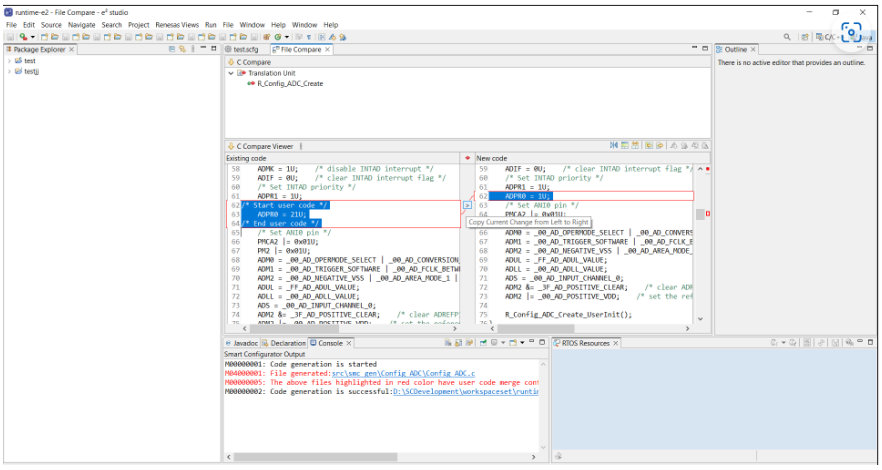
The previous project generation is renamed to "FreeRTOS (with IoT libraries)(deprecated structure)".

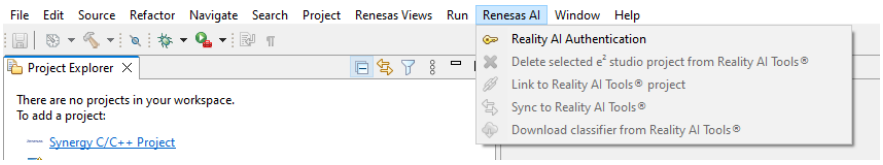
The new "FreeRTOS (with IoT libraries)" uses FreeRTOS LTS for the project generation.

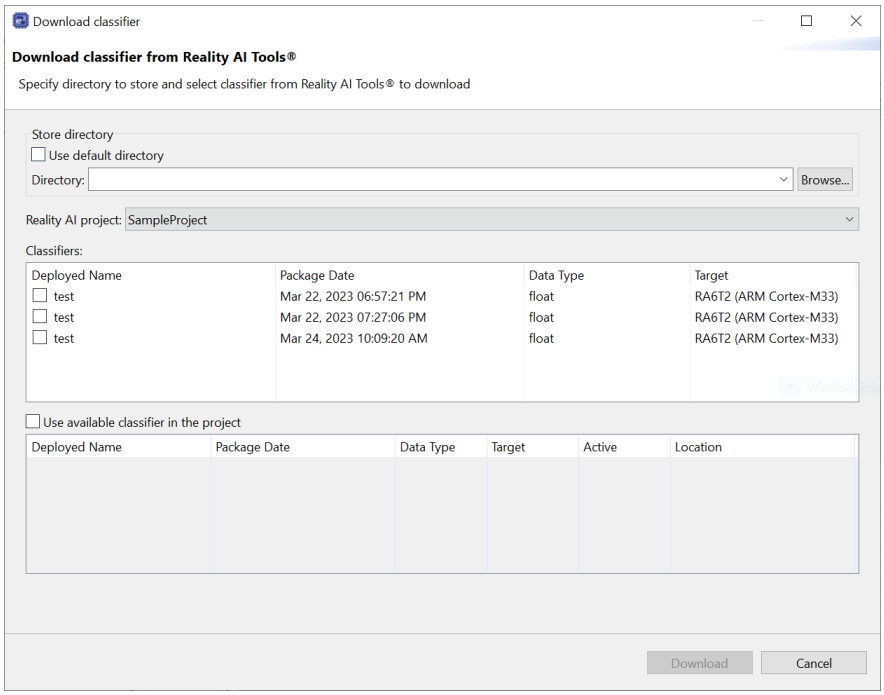
Application selection is also available when creating new "FreeRTOS (with IoT libraries)" project.

RTOS Configurator RX

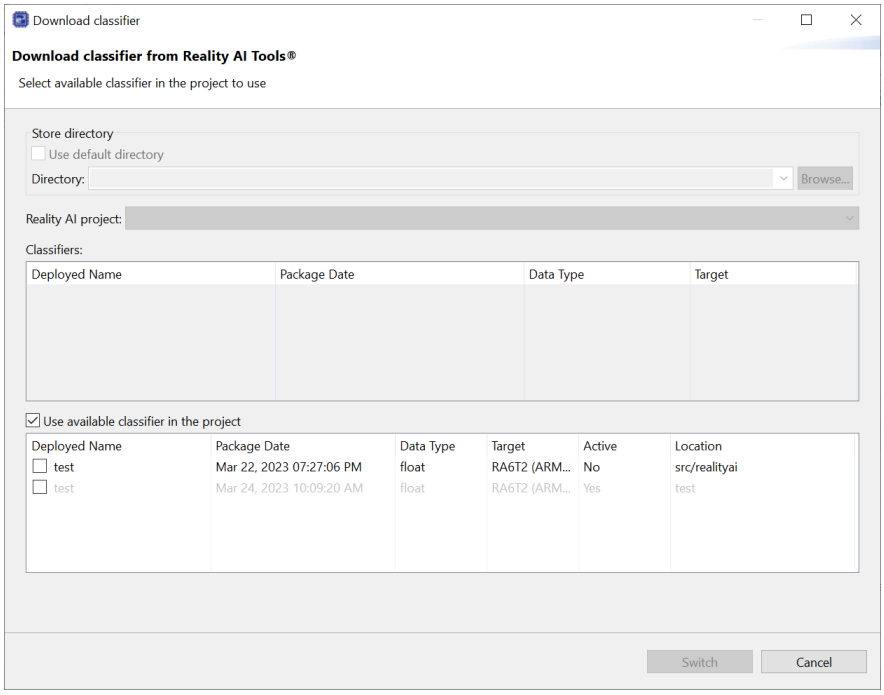


Smart Configurator	RX	Smart Configurator for RX updated to V2.18.0. • BSP rev7.41 is supported and will be added as default BSP when creating Smart Configurator RX project. • RX26T (RAM size 48K) devices have been supported in Smart Configurator • GPT has been supported in Motor component for RX66T • Sample project can be selected for creation for Smart Configurator RX project, there are two kinds of sample projects are available as below:  • The blinky project can be selectable when the selected boards contain LED pin information. • Compare view has been supported for helping user resolving the user code merge conflict after generating codes for CG components. You can easily compare the code differences before and after, then resolve the conflict by a simple click or manual editing on the right panel. 

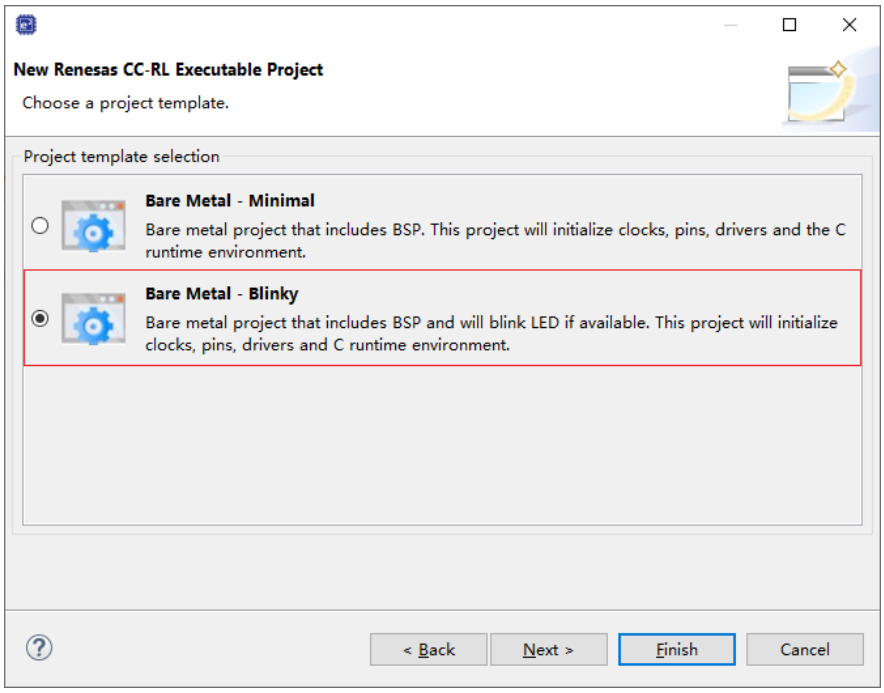
		• RSCI peripheral function has been supported for RX26T in SCI/SCIF Asynchronous Mode, SCI/SCIF Clock Synchronous Mode, SPI Clock Synchronous Mode, SCI Smart Card Interface Mode and I2C Master Mode.
Reality AI	RA, RX	The Reality AI features have been moved to a new top level menu item "Renesas AI". This is to aid usability and discoverability of these features. The menus are disabled until you have authenticated with the Reality AI website via the "Reality AI Authentication" menu: 
Reality AI	RA, RX	The Reality AI plugins are no longer included as default within the e² studio product. These can be added when installing the product or added via the "Install New Software..." feature when projects needing these plugins are detected. This separation allows us to update the Reality AI feature when the website is also changed.
Reality AI	RA, RX	In the previous version of e² studio it was possible to download the zip file package from the Reality AI website via the e² studio user interface. After this point you needed to extract and integrate this with your project manually. It is now possible for e² studio to manage this operation with a new feature and user interface. You can manage multiple classifiers and decide which is to be integrated with the project. When added to the project the build settings are configured to match the classifier selected.



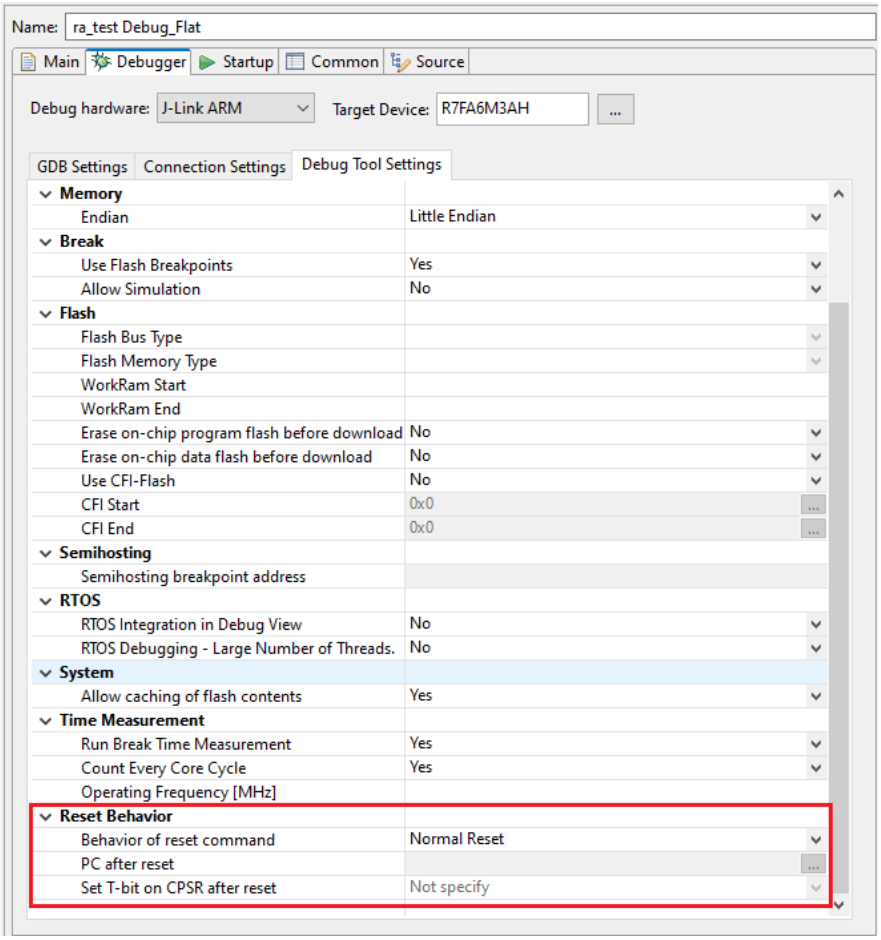
Also, can switch between downloaded models/classifiers in the current project.



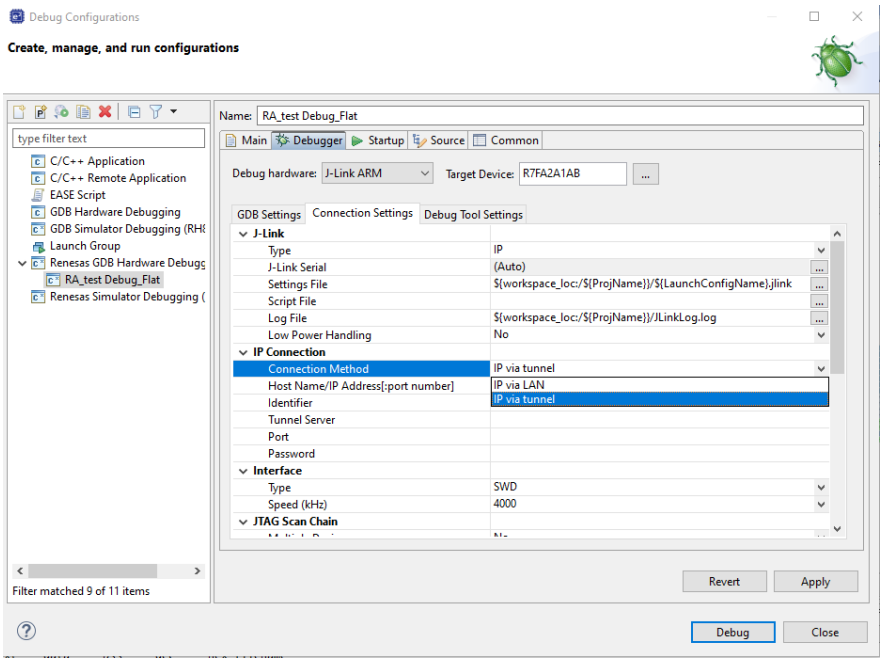
		Smart Configurator updated to V1.7.
Smart Configurator	RL78	• RL78/G16 and RL78/G24 UM Rev1.0 catch-up. • Support RL78/G24 TMKB3, DALI, TRD (Timer KB3 PWM Output Gate Mode) and A/D (Advanced A/D mode). • Support new blinky project generation feature when selected the target board with LED resource in project generation wizard.



Smart Configurator	RH850	Smart Configurator updated for RH850 to v1.9. User manual updated for RH850U2A and RH850/F1KM.
ARM J-link Debug Configuration	RA, RZ, DA, RE, Synergy	Improved reset behavior options available in the ARM J-link Debug Configuration "Reset Behavior" category is added to Debug Tool Settings tab to set the reset behavior for the debug models of the project.



Developer Assist	RZ/T and RZ/N	When using The Flexible Software Package (FSP) for RZ/T and RZ/N, Developer Assistance support is now available within the Project Explorer view and Properties view.
GDB	RZ, RA, DA, RE, Synergy	GDB for the RZ device family has been updated to revision 12. This now contains Python 3.10.
ARM J-link Debug Configuration	RA, RZ, DA, RE, Synergy	The e² studio Segger J-link ARM debug configuration now allows you to setup connection via a tunneling server. SEGGER J-Link support a remote debug system that allows a PC in one location to register J-Link units connected to it with a central server, making them available for use from a debugger running on another PC anywhere in the world. More background information on this feature can be found at: J-Link Remote Server



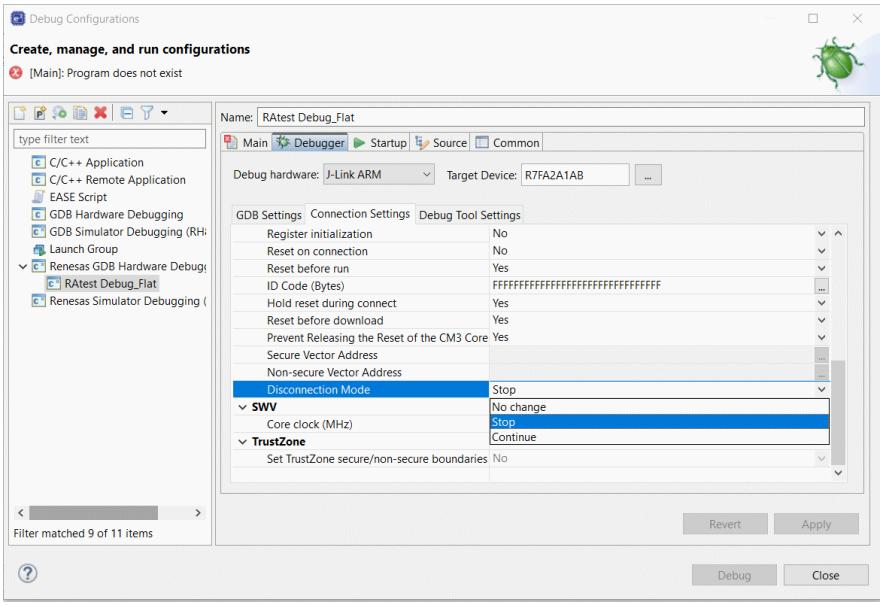
The Terminate and Disconnect buttons in the user interface have been improved. The Terminate button will stop the device.

The disconnect button will leave the device in the state defined in the debug configuration. This has been implemented for the Segger J-link debugger for ARM based devices.

The "Disconnection Mode" has options for No change, Stop and Continue.

Pressing the Disconnect button will perform the option set in the Disconnection Mode setting.

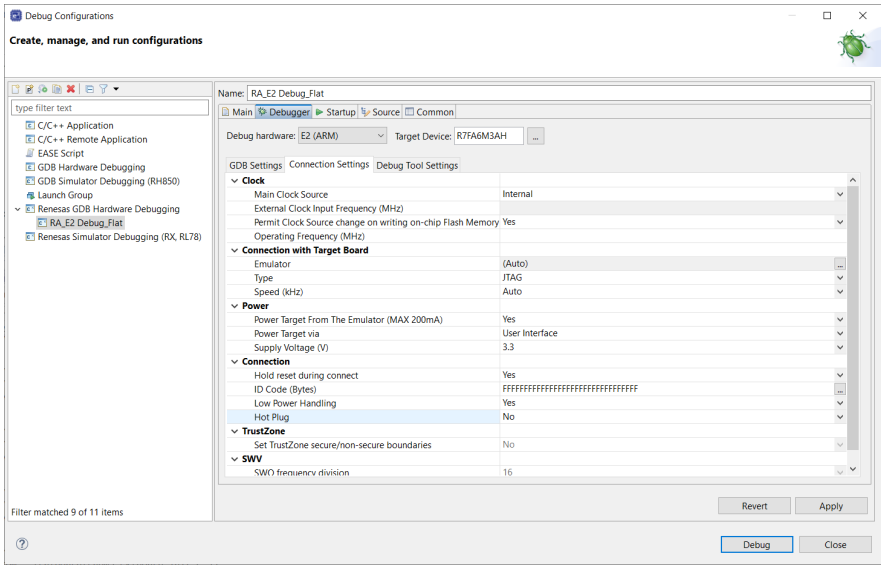
Debugger	RA, RZ, DA, RE, Synergy



ARM E2 Emulator Debug Configuration	RA, RZ, DA, RE, Synergy

When using E2 Emulator debugging it is now possible to perform a hot plug connection to an already running target.

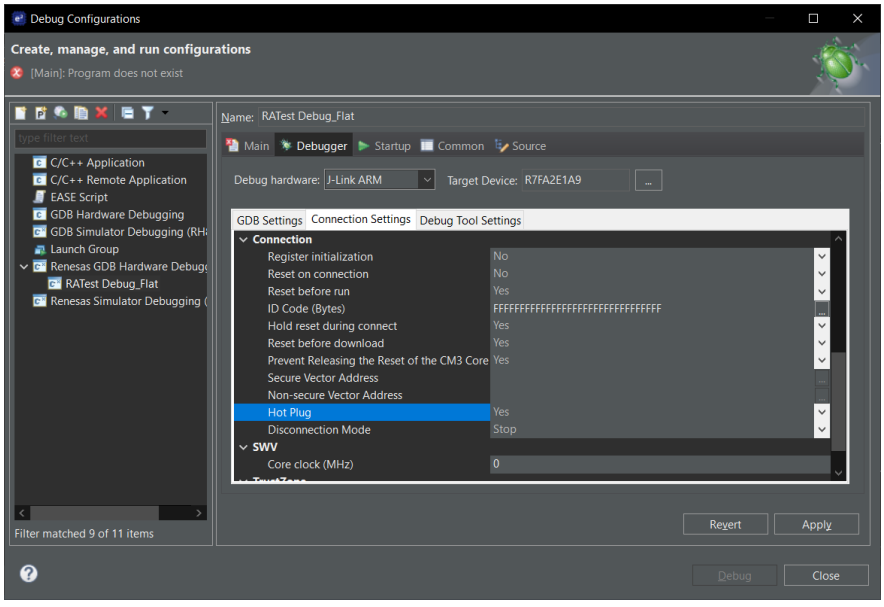
This is available for selection in the E2 (ARM) debug configuration settings dialog.



When using Segger J-link debugging it is now possible to perform a hot plug connection to an already running target.

This is available for selection in the J-link ARM debug configuration settings dialog.

ARM J-link Debug Configuration — RA, RZ, DA, RE, Synergy

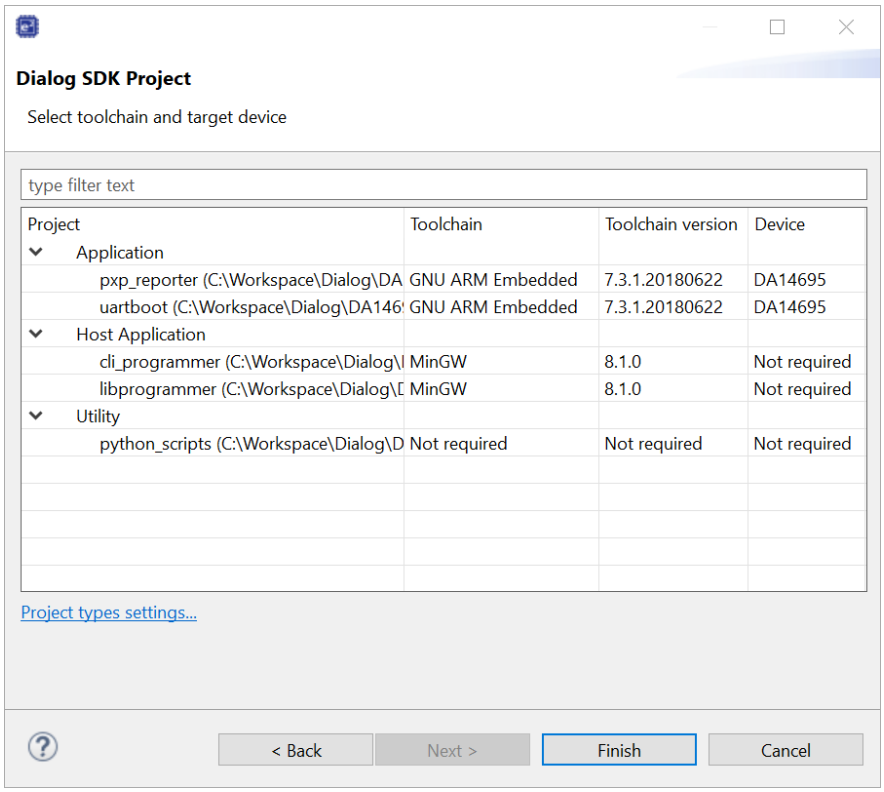


DA support — DA

DA device support for project import and debugging added for DA14592/4.

The DA14706 device is now also supported in e² studio.
The SDK for this device can be imported using the File->Import->Dialog SDK Project, Once imported the debug configuration will be migrated to the Renesas GDB Hardware debugging configuration for Segger J-link.

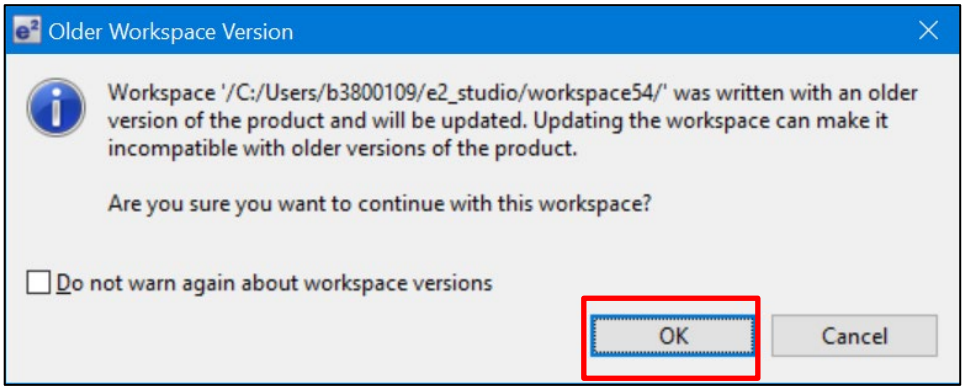
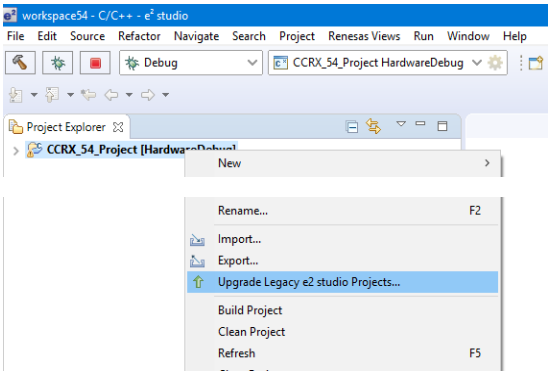
This will allow RAM and Flash based debugging.

Dialog SDK project importer	DA	From e² studio 2023-07, all projects in a Dialog SDK can be imported using the "Dialog SDK Project" importer. Projects will be categorized into different types, and you can change the setting of each project type or each individual project. 
Host project build	DA	When using the Dialog SDK importer there are some projects delivered which are for building on the host platform with minGW. Now these projects can be imported as part of the Dialog SDK Import procedure. These can then be built using an integrated minGW toolchain in e² studio.

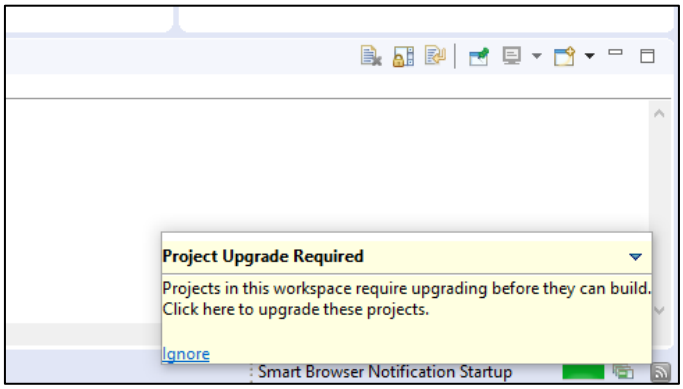
5. Useful workarounds and information for 2023-07

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

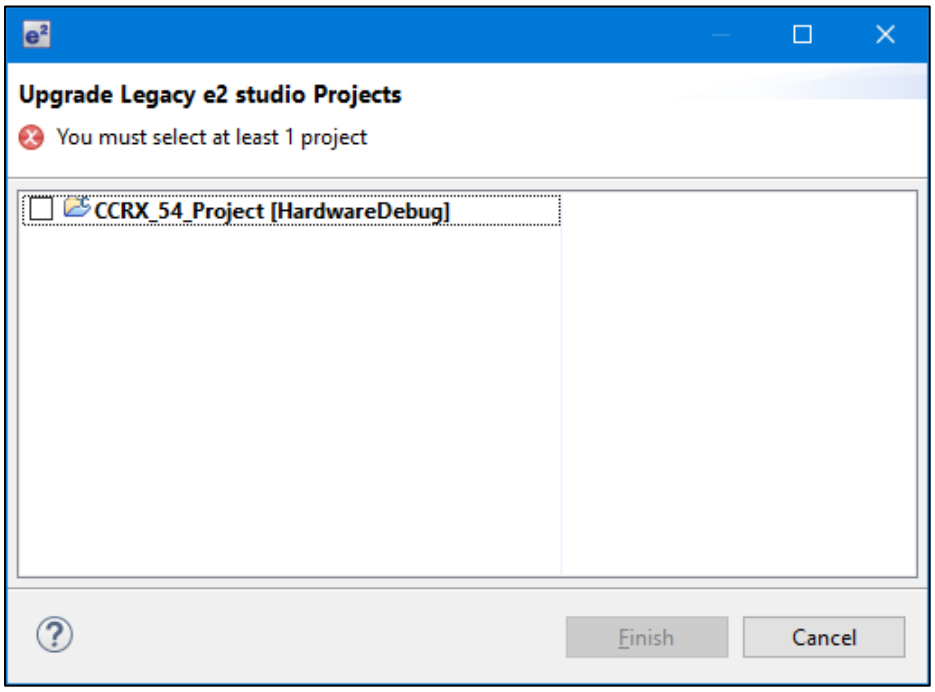
Online FAQ link.

ID	Component	Workaround or information
	Application	When using the check for updates feature within e² 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 e² studio work without issue. This is caused by the update to Java.
	SH support	The Renesas SH device family is no longer supported in e² studio. If you need to use the SH device support, please use e² studio 5.4 or earlier.
	Importing old projects into 6.x	All projects being migrated into the latest e² studio from e² 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:

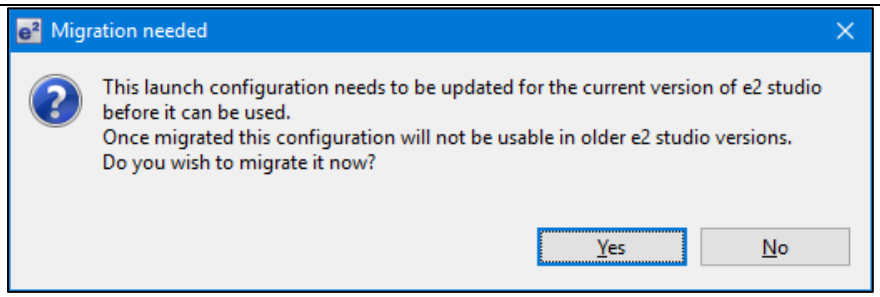


To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

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

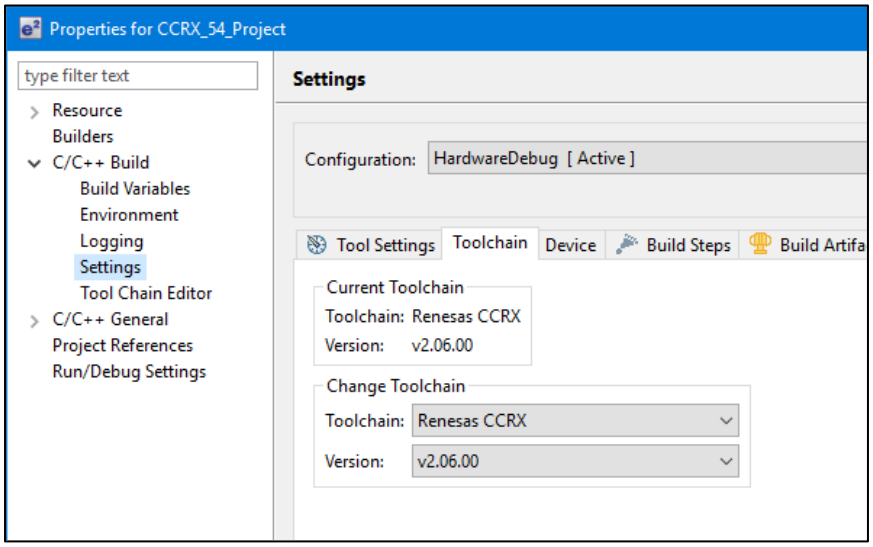
For the GCC toolchains for RX, RL78 and GNUARM-NONE have been made to the build options which mean we cannot guarantee the same binary output after upgrade. Please consider this before upgrading.

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.



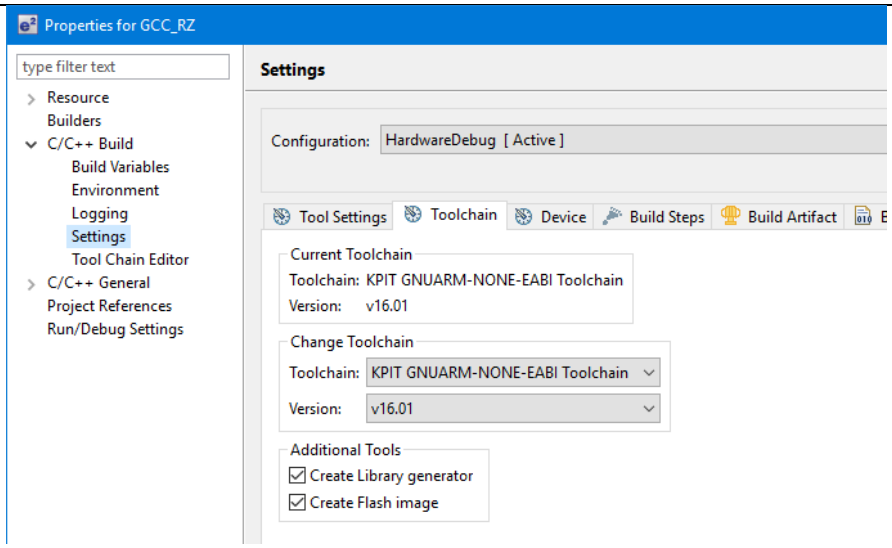
Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

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.

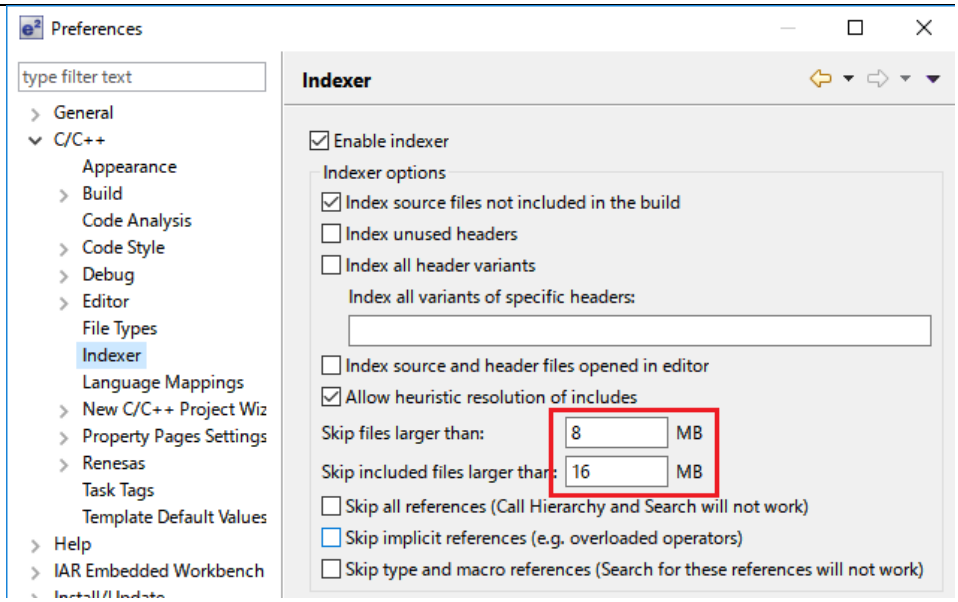
RZ Toolchain	The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e² studio product but now using the gnuarmeclipse plugins. In addition RZ within e² studio now supports the GNU ARM Launchpad toolchain. Available from https://launchpad.net/gcc-arm-embedded. One drawback of this toolchain 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://llvm-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.

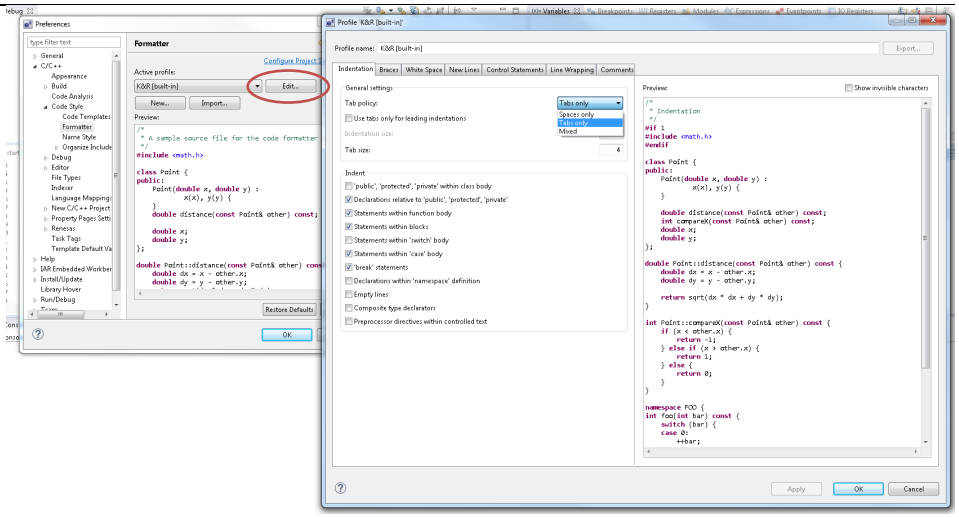
	QE compatibility	If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1. Other QE series can be used with e² studio 6.0. What is QE? https://www.renesas.com/qe Details of QE for TCP/IP https://www.renesas.com/qe-tcpip
5954	Application	If you experience the error message “org.eclipse.swt.SWTError: No more handles” this can be caused by certain multi-monitor software and the Eclipse framework. If this error occurs there are 2 workarounds: 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	When debugging IAR C source file with an OCD emulator (E1), the Monitor program area (0x00002-0x00003) is used. Therefore, this area must be excluded from usable address space. Please add '`-HFF`' in the linker option. 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'. Not doing this will cause problems with connection and download when using interrupts.
NA	Application	If you are experiencing slow building of projects within e² studio there are some possibilities to improve. 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.

		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	In 3.0 the KPIT GCC RZ toolchain was supported at version 14.01. This version is no longer supported within e² studio. KPIT modified the name of their ARM toolchain to be ARM-none-eabi to follow standard ARM naming convention like other GCC toolchain vendors. 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. 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.
NA	KPIT GCC	The KPIT toolchains are now no longer supported by the www.kpitgnutools.com website. Support is now available from the llvm-gcc-renesas.com website. 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. Both integrate into e² studio and can be selected from the project wizard.
1922	Application	Symptoms: Project fails to build in first instance after archive project import (not from HEW) Conditions: If an archived project is imported, it may fail to build the first time, due to a `residual .d` file. Workaround: Clean and Build a second time.
2762	CODAN	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. Indexer buffer can be insufficient to process whole project. Please try giving larger values for the following configurations. Open preferences dialog through “Window”->” Preferences” menu. In “C/C++” -> “Indexer” tree, you will indexer configuration as shown below:



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

2728	GDB	Step into does not always work when using the CC-RX 1.02.01 toolchain. 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.
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	The IAR Plugin Manager is included in e² studio and provides support for RX, RL78, RH850 and RZ (ARM). This tool simplifies installation and configuration of IAR toolchain plugins. You can access this though Help -> IAR Embedded Workbench plugin manager.
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	In a RZ/T1 RAM-based project, the "Reload" function does not work. Reloading or re-downloading during debugging resets the device and the RAM content is erased. To continue the debugging, disconnect and connect the debugger again.
	Use spaces as tabs	Eclipse and CDT both have settings for use spaces as tabs. The option on the Editor preferences page conflicts with the CDT formatter settings. To change the use spaces as tabs option in e² studio please use this page:



	Installer problems	In some situations, the AVG virus checker appears to interfere with the e² 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	When debugging the RH850 object built with the Green Hills compiler in e² studio, specify the following option for the compiler option: `-gtws` The GUI setting menu is as follows. [GHS C Compiler for V800 Standalone]-[Debugging Option] "Generate Target-Walkable Stack" -> On If this option is not specified, Step Over and Step Return may not work properly.
17052	Debugging	When debugging using a project with duplicate filenames that are in different source folders problems can be seen with breakpoint setting. 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.
18505	RZ debugging	When debugging with RZ/T1 in certain situations you may experience problems stepping: If the following conditions are met: 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 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. There are several solutions to this problem: a. disable `--gc-sections` until those functions are used b. remove the unused functions

	RZ GCC Build	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. 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 `-mfpu=vfpv3` incorrectly. This can now cause problems with older start-up code in older RZ projects. After import if you see an error relating to this please add `-mfpu=vfpv3` to the “Other Assembler Flags” page of the Assembler tool. In addition, when migrating some RZ/A1 projects you may experience import problems unless you build the project in 5.4 first.
	RZ DS-5 Project Import	When a DS-5 project is imported into e² studio the environment variables for Path and TCInstall are copied from the DS-5 environment. 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.
	RX & RL78 GCC Project Import	When importing a KPIT RL78/RX Library C/C++ project from e² studio 5.4 or before the build artifact settings are not correct. The output prefix should be set to “lib” but is in fact empty.

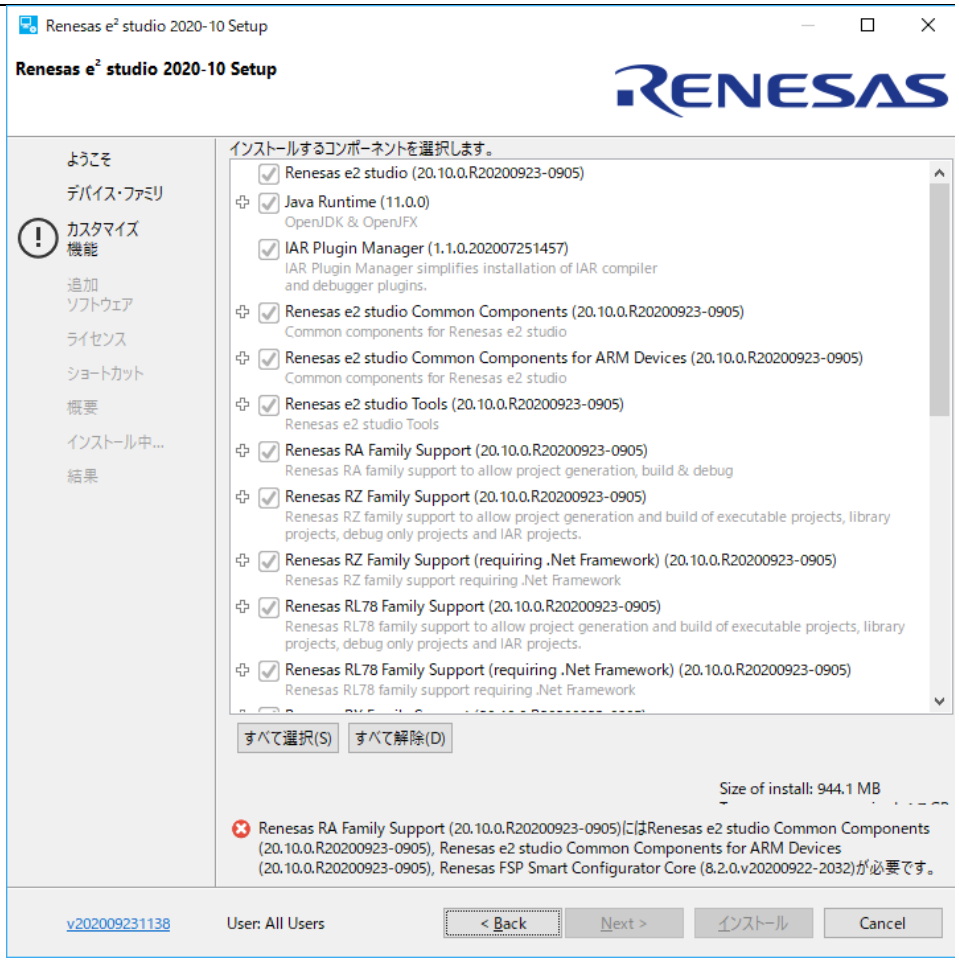
	RZ/G debug	In the case of debugging Linux application for RZ/G, the following error messages are shown in GDB server console when pushing [Step in] button or [Step Over] button.
		These messages can be ignored because the Step debugging should work properly even with these messages.
		
		Examples of error messages:
		`PassthroughTargetCommunication::sendResponse error 42 46`
		`PassthroughTargetCommunication::sendResponse error 10 15`
		`PassthroughTargetCommunication::sendResponse error 42 46`

21863	RX & RL78 Debugging	In previous releases there were some problems with stepping in some situations when using the CCRX and CCRL toolchains. 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.
	Code Generator registration	When using multiple installations of e² studio on your machine you may find that subsequent installations do not work correctly with the code generator. 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. If this is the case, then the code generator must be manually registered. To do this execute the following tool: e.g. `C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601-1047\CodeGenerator\Tools\register COM.bat`

25278	Synergy debugging	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.
		e.g.
		`".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 };`

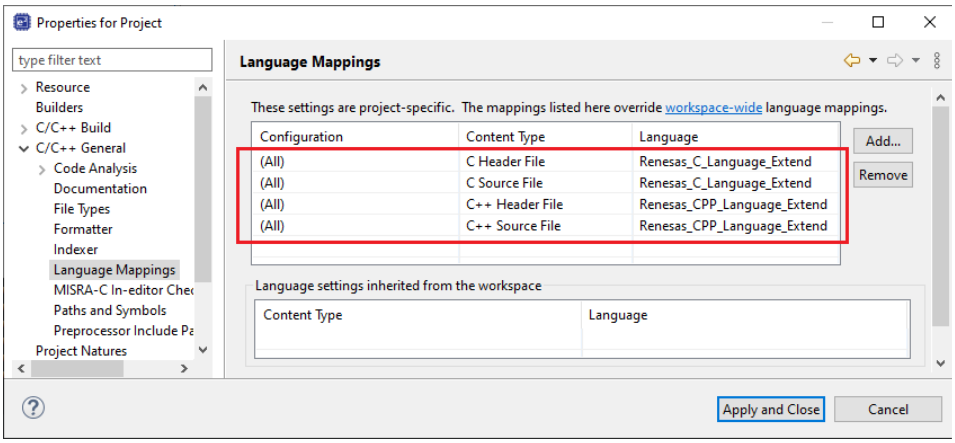
25273	RZ Device Migration	When changing the device from a RZ/A1 and attempting to swap to a RZ/T1 the device migration is not successful. The source code is not migrated successfully, and the build fails. This is due to the different start-up code structure between these devices. In this case please create a new project and copy the required source to the newly created project.
25195	RZ/A2M Smart Configurator	When creating a project of RZ / A2M, the following Warning is displayed in the Problems view for the src / renesas / configuration folder. `"Invalid project path: Include path not found"` [Workaround] Delete the specification of this folder with the compile option include path setting.
24883	R2/A2M	RZ / A2M project generated by e² 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 e² studio look like suspended.
12123	Linker Script Editor	The Linker Script Editor may report errors when using some Wild Identifiers such as `1file.o` and `*filename.o` . 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"`).
	RZ/G Linux Platform Tools	When using RZ/G Linux Platform Tools, gnu.io.rxtx plug-ins should be installed same as Nebula plug-ins. Please follow the below steps to install gnu.io.rxtx plug-ins. Start the e² studio and select [Help] -> [Install New Software] from the menu bar to open the [Install] dialog box. Click on the [Add] button, enter “GNU RXTX Plugin Update Site” as a name and “http://rxtx.qbang.org/eclipse/” as a location, and click on the [OK] button. 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: -`uBlankFlaskFill=BB` with the blank fill value being 0xBB. Specifying this value enables the feature, by default it is off.
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 e² 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.



IDE-39932	RX	The Renesas ITRON debug views is only supported with e² studio 32bit version such as 7.8.0 currently. Enabling the Renesas ITRON debug views on e² studio 64bit version is under planning.
IDE-42025	RL78	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 e² 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 e² studio v2021-07. +Renesas C/CPP Language Extends need to be added manually, if old project is imported to e² studio v2021-07.



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	RL78, 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 e² studio and then return to the old e² studio with the old output format. You will need to modify the settings as desired.
IDE-43454	RA, RZ	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"
IDE-47790	RH850	Synchronous mode is supported in e² studio 2022-01 for debugging RH850 multi-core devices. 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. Basic specifications for mode switching: When all cores are stopped and [Resume All], the operation mode becomes synchronous mode. Resume for one core switches to asynchronous mode and continues in asynchronous mode until all cores have stopped. Always use sync mode under the following conditions: * 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. Synchronous mode specifications: -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. Asynchronous mode specifications: -[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. Specifications of each button related to execution control: [Resume] button: Switch to asynchronous mode and run the core currently being debugged. [Suspend] button: In asynchronous mode, stop the core currently being debugged. In synchronous mode, stop all cores. [Resume all] button: Switch to synchronous mode and run all cores. [Suspend all] button: Stop all cores and switch to synchronous mode. Limitations: -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	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.
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.
	FSP Smart Configurator	When using the FSP Smart Configurator the linker script is now generated in the build configuration folder rather than the script folder. This change should be automatically picked up when the project content is generated from the FSP Smart Configurator tool. This should ensure that existing projects continue to work as expected. When using the IAR toolchain for your project this new behavior can cause issues. In this case the IAR linker uses the “memory_regions.icf” file available in the script folder rather than the script file generated in the build configurations folder. To work around this please delete the file present in the script folder, then the tool will use the file in the build configuration folder.
IDE-55553	RL78 GCC	The RL78 GCC toolchain has been deprecated in favor of the RL78 LLVM toolchain. This toolchain offers much better performance and is recommended for new projects.
IDE-59034	Synergy Configurator	The Synergy Package view will need to be opened manually from version 2023-01 onwards, as it is not opened by default (since Synergy now uses a different Pin Configurator than in earlier e² studio versions). The Synergy Package view is named "Synergy Package (experimental)".

	Synergy Configurator	Renesas Synergy no longer supports Synergy Software Platform (SSP) version 1.x. Only Synergy Software Platform (SSP) version 2.0 and later will be available for new Synergy projects. Existing Synergy 1.x projects will prompt to upgrade upon opening them in the Synergy Configurator, if a later version (2.0 or later) is available. This means that it is no longer possible to build SSP 1.x projects in e² studio 2023-01.
	Synergy Configurator	The Pin Editor component for Renesas Synergy projects has been modified to use the same pin configurator as the RA device family. Any existing projects that were using the Synergy Pin Editor will have their projects automatically upgraded upon opening them in the Renesas Synergy Configurator. This will allow Synergy users to access the more advanced feature set of the RA pin configurator and enjoy an updated user experience.
IDE-62045	GreenHills	Plugins for GHS Multi are no longer installed with e² studio. Please see the GHS Multi manual for instructions on how to install the plugins if you want to use them.
IDE-61688	Application	Toolbar buttons with functions that are accessible via a menu item have been hidden by default for new workspaces. You can add them back via Windows -> Perspective -> Customize Perspective This change will not impact perspectives in existing workspaces unless the perspective is reset.
IDE-56105	FAA RL78 support	For RL78 FAA LLVM project, FAA source level debug is not available. Please use Disassembly view for FAA debugging.

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

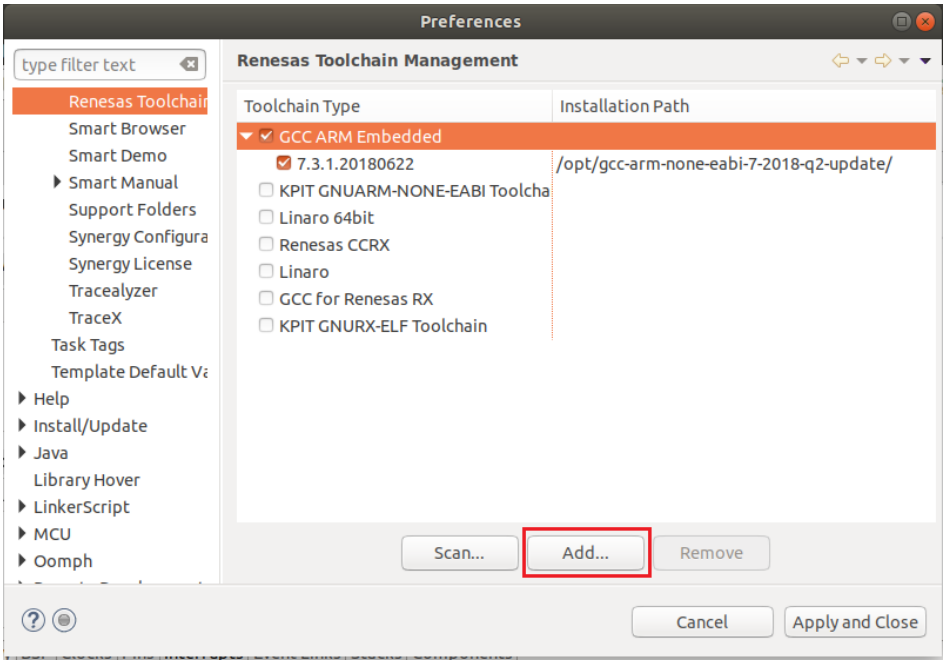
6.3.1 GNU ARM Embedded

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

A. Download and extract a toolchain package file to arbitrary directory.
B. Run ‘e² studio’ and select ‘Help – Add Renesas Toolchains’
C. Select ‘Toolchain Type’ and ‘Add’ Location of toolchain.

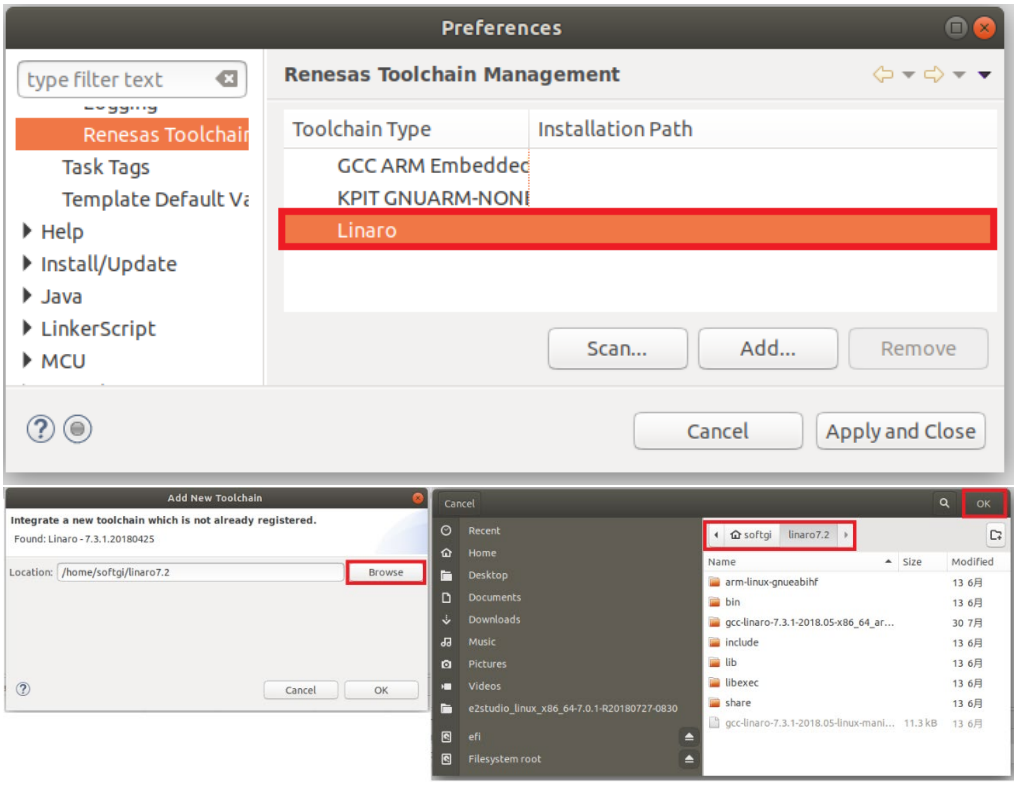


Figure 2. Register Toolchain: Browse toolchain location

D. Click checkbox of added toolchain and restart e² studio.

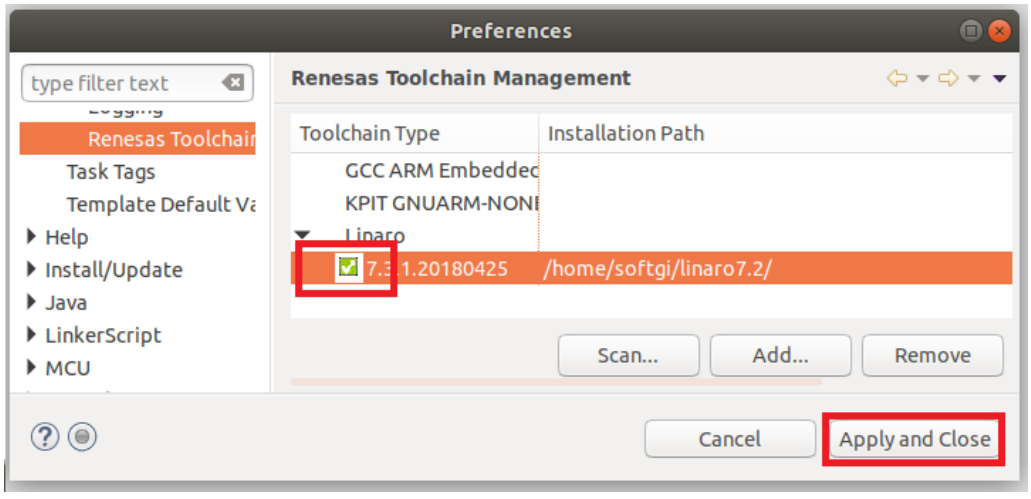


Figure 3. Register Toolchain: ex) Linaro

6.4 How to build and debug RA applications Overview

6.4.1 Build

Open the New project wizard and choose 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 it in 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://community.renesas.com/). 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)

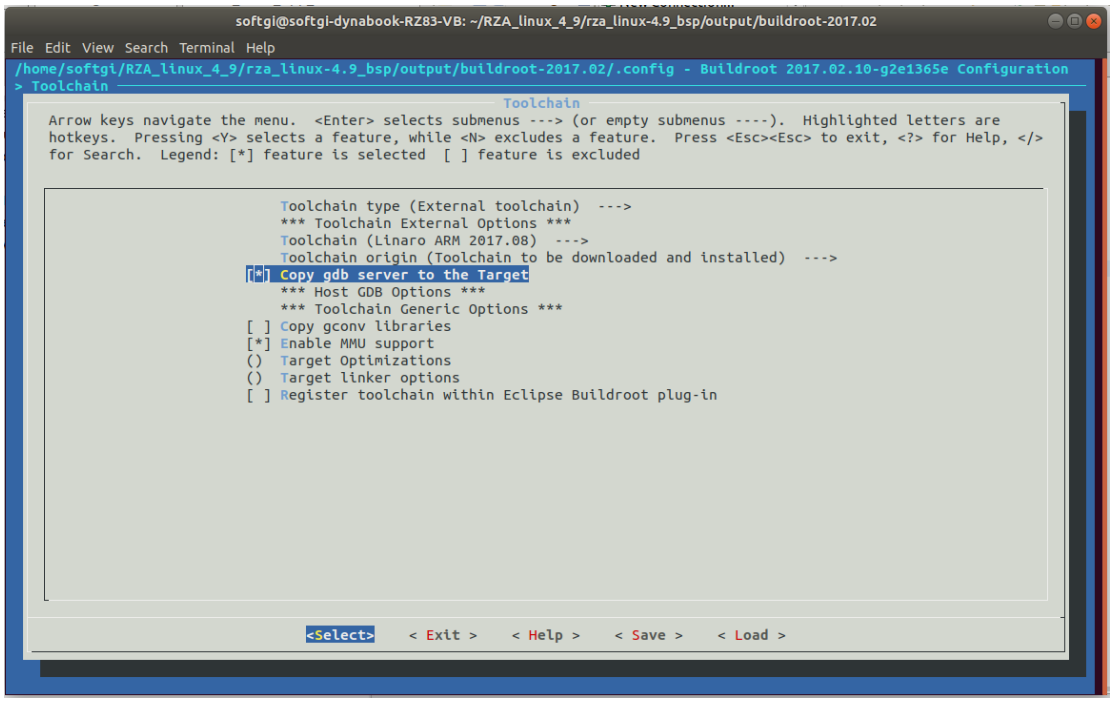


Figure 4. Menuconfig: set 'copy gdb server to the target'

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.

```
# Put a getty on the serial port
# ttySC0::respawn:/sbin/getty -L ttySC0 115200 vt100 # GENERIC_SERIAL
```

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.

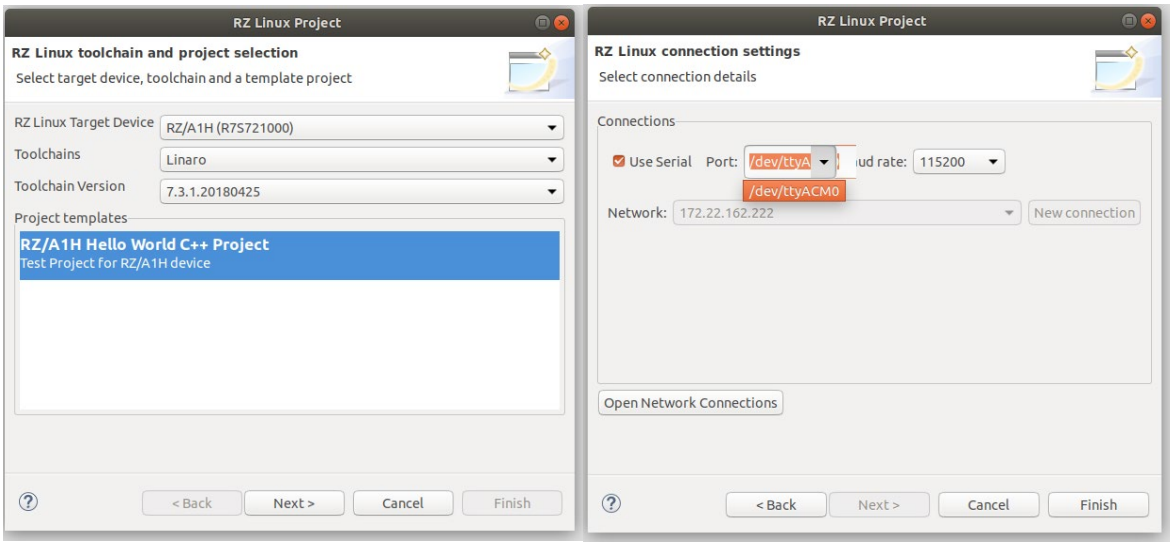


Figure 5. New RZ Linux project & connection setting: Serial port

C. After editing codes, build by selecting ‘Build Project’ in right-click menu or push  button.

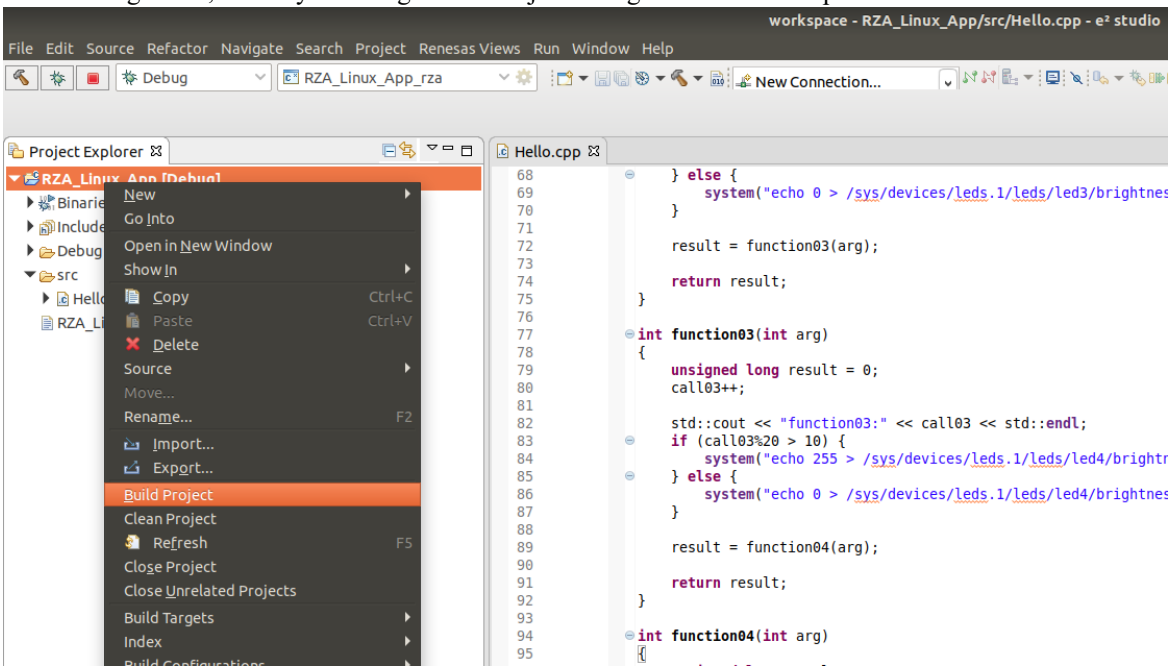


Figure 6. Build Project

6.5.3 GDB debug by using serial port communication

A. Terminate all processes use serial port communication such as Minicom.

B. Open ‘Configuration’ and check ‘Serial’ is selected as ‘Connection’.

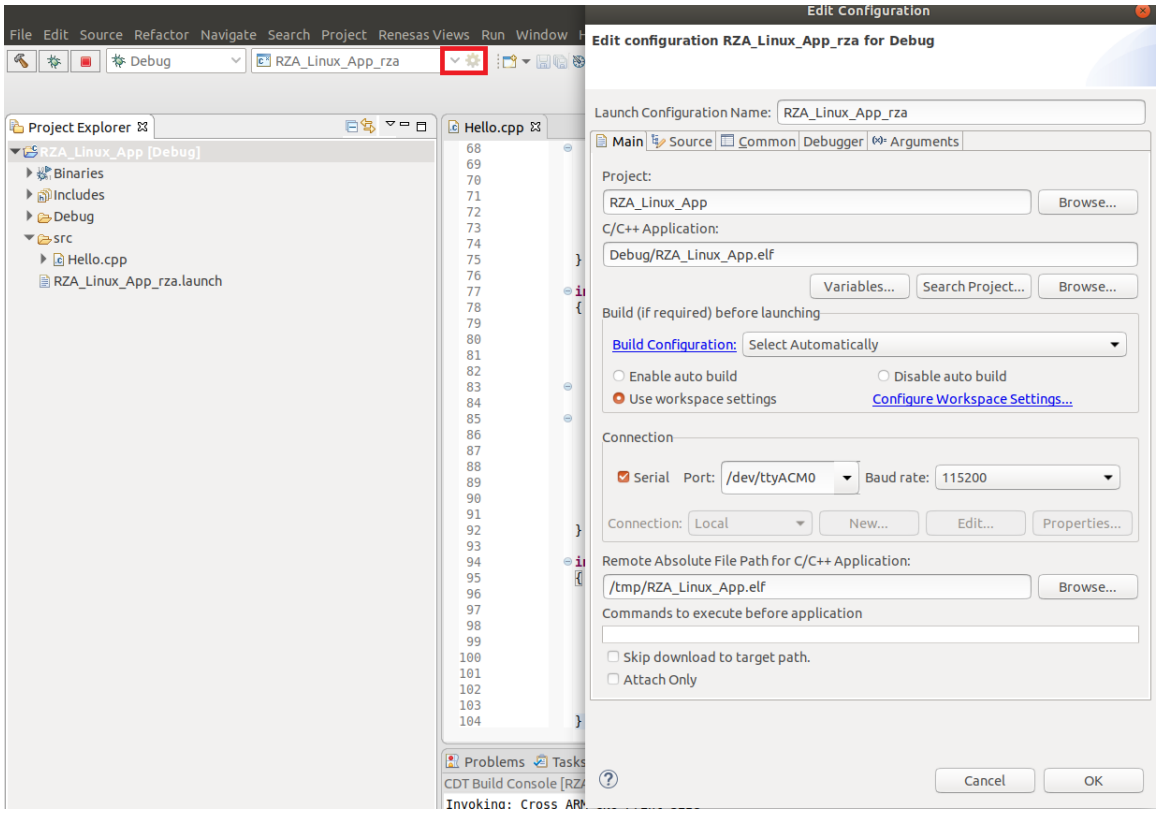


Figure 7. Connection configuration: Serial

C. Run debug by push button  . It takes 10 or more seconds for transferring binary files to target device. Pop up message for switching to debug perspective will be shown after transferring binary files.

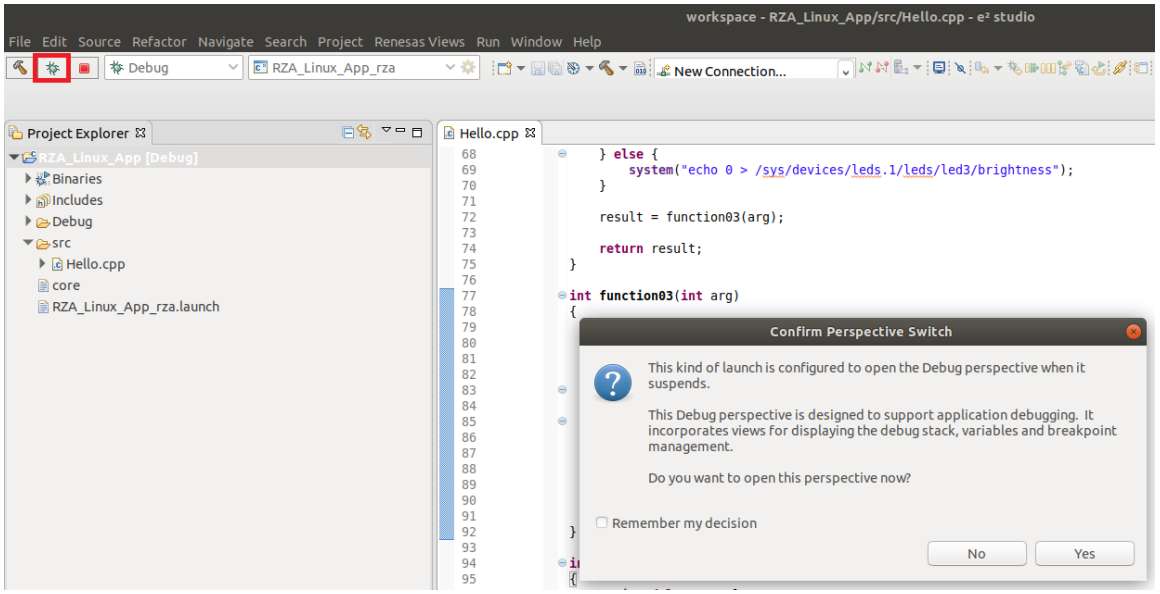


Figure 8. Debug: Perspective Switch

D. ‘Debug Perspective’ provide ways for flow controls and configurations.

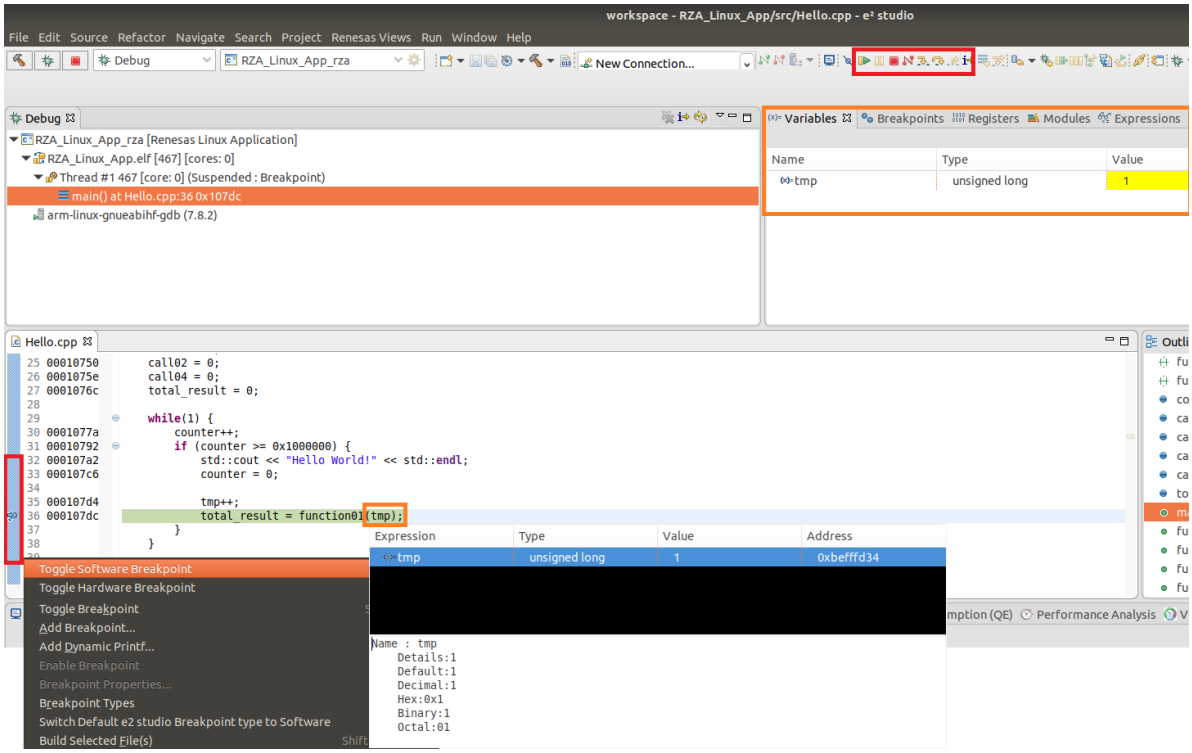


Figure 9. Debug: Control buttons, views, setting break point

7. Open Issues in 2023-07

Open issues in the e² studio 2023-07 product will be kept up to date here:

Please visit to see the latest open issue list.

8. Appendix

8.1 Website and Support

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http://www.renesas.com/

Inquiries
http://www.renesas.com/contact/

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