

e² studio 2021-04 (R20210330-1207)

R20UT4966EG0100

Rev.1.00

1st April 2021

Release Note

Introduction

This document outlines the device support, new features added in 2021-04, fixed issues and open issues in e² studio 2021-04.

Contents

1. Product Information	3
1.1 Supported Operating Systems	3
1.1.1 Windows 64-bit product version	3
1.1.2 System requirements	3
1.1.3 Linux version	5
1.2 Supported Toolchains – Windows Hosted	6
1.3 Supported Toolchains – Linux Hosted	7
2. Device Support	8
2.1 Project Generator Support – Windows Hosted	8
2.2 Code Generator Support – Windows Host	17
2.3 Smart Configurator Support – Windows Host	21
2.4 Project Generator Support – Linux Hosted	24
2.5 Smart Configurator Support – Linux Host	26
3. Smart Manual Support	28
4. What is new in 2021-04?	2
5. Useful workarounds and information for 2021-04	16
6. Linux version	27
6.1 How to install	27
6.2 How to run	27
6.3 Register toolchain to e² studio	27
6.3.1 GNU ARM Embedded	27
6.3.2 Linaro	28
6.4 How to build and debug RA applications Overview	29
6.4.1 Build	29
6.4.2 Debug	29
Checks if connection fails	29
6.5 How to build and debug RZ Linux application Overview	30
6.5.1 How to add gdb-server to RZ/A Linux root file system	30
6.5.2 Linux C/C++ Project generation and build	31
6.5.3 GDB debug by using serial port communication	32

7. Open Issues in 2021-04	34
8. Appendix.....	35
8.1 Website and Support	35
8.2 Web Access and Privacy Policy	35

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 2021-04 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 for 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.

In addition, the Windows 64-bit installer no longer supports the RZ/G family of devices. This family is available in the e² studio 7.8 installer.

The RZ/G family is available in the 7.8 installer and the Linux version of 2021-04. 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. 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 2021-04 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 in 2021-04.

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 2021-04.

	Renesas	GNU Arm Embedded (*2)	Renesas GCC/ GNURZ/ARM (*3)	IAR (*4)	Green Hills (*5)
RL78	Yes (CC-RL)	No	Yes	Yes	No
RX	Yes (CC-RX)	No	Yes	Yes	No
RH850	No	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:

Device Family	GCC distribution and version
RZ/A1, A2	6.3.1 (2017 q2)
RZ/G1, G2	Linaro 7.3.1
Synergy	SSP 1.6.x: 7.2.1
	SSP 1.7.x: 7.2.1
RA	FSP 1.1.0: 9.3.1

*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 2021-04:

- Linaro GCC – tested version 7.3.1-201805
- GNU Arm Embedded – tested version 7.3.1.2018.06022

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	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
	RE01B		R7F0E01BD2DNB
	RE		RE01_1500KB

RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG
C1H	R7F701260, R7F701270,(Debug Support Only)
C1M	R7F701263, R7F701271,(Debug Support Only)
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)
RH850	- 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)
U2A-EVA	R7F702Z19A,(Debug Support Only)
U2A16	R7F702300,(Debug Support Only)
U2A8	R7F702301,(Debug Support Only)
RL78	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
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, 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
	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
	G23	R7F100GLF, R7F100GLG
	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
	110	R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J
	111	R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J
RX	113	R5F51135, R5F51136, R5F51137, R5F51138
	130	R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308
	13T	R5F513T3, R5F513T5

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_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, R5F566TE, R5F566TF, R5F566TK
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
	G1E	R8A77450, R8A77450_Core1,(Debug Support Only)
	G1M	R8A77430, R8A77430_Core1,(Debug Support Only)
Synergy	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
	S1JA	R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ
	S124	R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF
Synergy	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

CPU	Family	Devices
	D1A	R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLL, 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
RL78	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

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, R5F10WMMG
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
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
RX 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 – Windows Host

Family	Group	Devices
RL78	G23	R7F100GLF, R7F100GLG
	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
	230	R5F52305, R5F52306
	231	R5F52315, R5F52316, R5F52317, R5F52318
	23E-A	R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S
	23T	R5F523T3, R5F523T5
	23W	R5F523W7, R5F523W8
RX	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
	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
	S1JA	R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ
	S124	R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF
Synergy	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
RA2A1	R7FA2L1AB3CFP, R7FA2L1AB3CFN, R7FA2L1AB3CFM, R7FA2L1AB3CFL, R7FA2L1AB3CNE, R7FA2L1AB2DFP, R7FA2L1AB2DFN, R7FA2L1AB2DFM, R7FA2L1AB2DFL, R7FA2L1AB2DNE
RA 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

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
Synergy	RZ	R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058
	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	RA2A1 R7FA2L1AB3CFP, R7FA2L1AB3CFN, R7FA2L1AB3CFM, R7FA2L1AB3CFL, R7FA2L1AB3CNE, R7FA2L1AB2DFP, R7FA2L1AB2DFN, R7FA2L1AB2DFM, R7FA2L1AB2DFL, R7FA2L1AB2DNE	

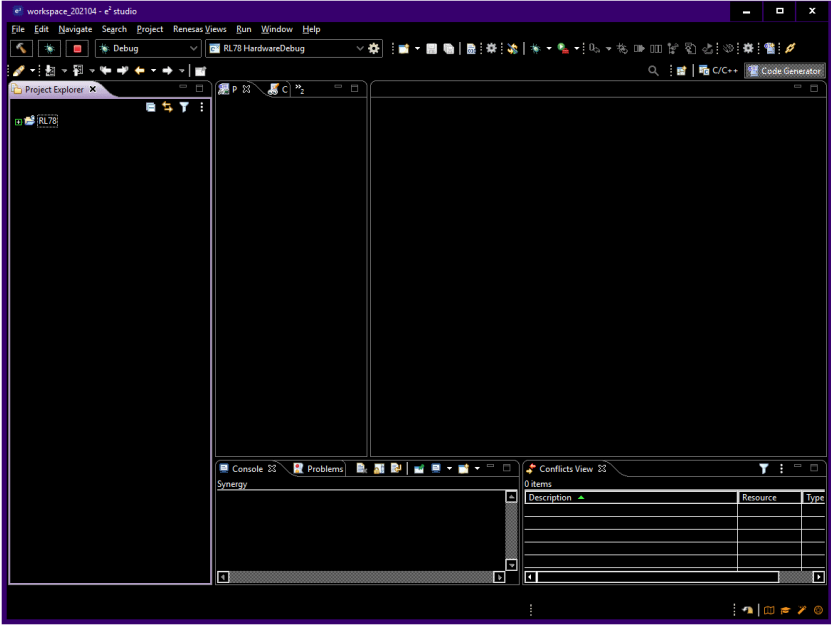
RA2E1	R7FA2E1A93CFM, R7FA2E1A93CFK, R7FA2E1A93CFL, R7FA2E1A93CFJ, R7FA2E1A93CNH, R7FA2E1A93CBU, R7FA2E1A93CLM, R7FA2E1A93CBV, R7FA2E1A93CNE, R7FA2E1A92DFM, R7FA2E1A92DFK, R7FA2E1A92DFL, R7FA2E1A92DFJ, R7FA2E1A92DNH, R7FA2E1A92DBU, R7FA2E1A92DLM, R7FA2E1A92DBV, R7FA2E1A92DNE, R7FA2E1A83CFM, R7FA2E1A83CFK, 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

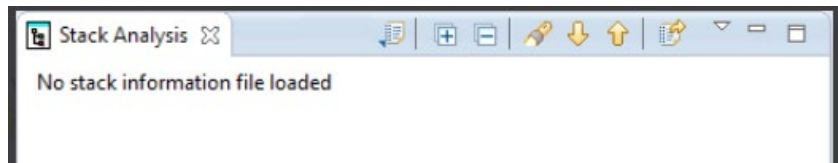
3. Smart Manual Support

Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of April 2021:

- RX110
- RX111
- RX113
- RX130
- RX210
- RX220
- RX230
- RX231
- RX23E-A
- 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
- RZ/A1H
- RZ/A1L
- RZ/A2M
- RZ/T1

4. What is new in 2021-04?

Component	Device	Description
		The Eclipse Platform has been updated to 2020-12 & CDT to 10.1.0.
Application	All	
RZ Configurator, Smart Configurator	RZ	<p>This following issue have been improved in e² studio 2021-04.</p> <p>When using e² studio 2020-10 or 2021-01 with Smart Configurator RZ/A2M project, MMU GUI settings can be lost after Smart Configurator operation.</p> <p>This issue does not affect to e² studio 2020-07 and earlier versions.</p>



Stack Analysis View All

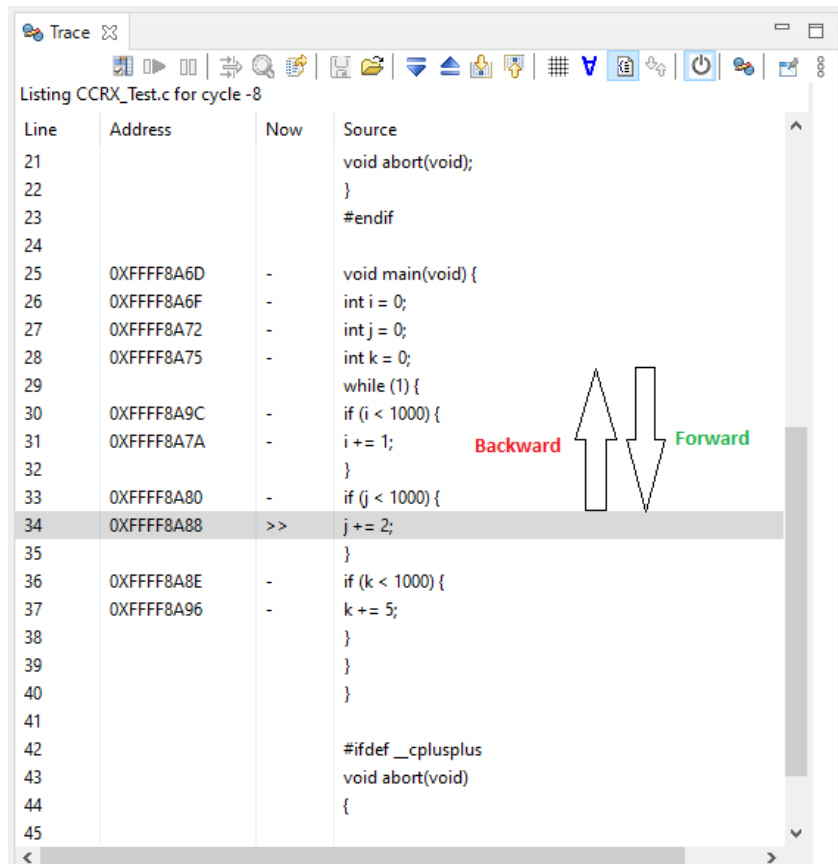
When selecting the stack analysis view and there is no selected project context a misleading message is displayed.

This message says: No stack information file loaded. Instead, when no valid project context is found you will get a message instructing you to select a valid project.

The Step/Run Forward/Backward function of the Trace view has been improved to match the debugger.

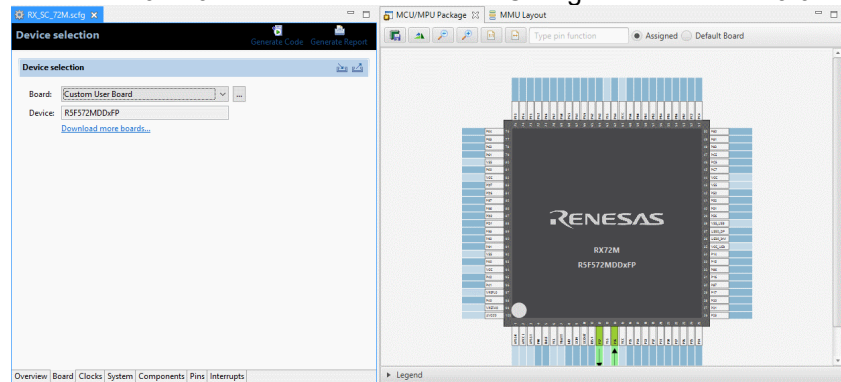
Trace

RX, RH,
RL



From version 2021-04, the Forward/Backward orientation of Run/Step on Trace view are swapped. Run/Step Forward on trace data has same orientation with Resume/Step feature when debugging.

e2 studio 2021-04 includes the RX Smart Configurator version 2.9.0.



Smart Configurator RX

(1) RX72M Low pin count packages as below are supported by Smart Configurator CG components*

144 pin packages as below:

R5F572MDDxFB
R5F572MDHxFB
R5F572MNDxFB
R5F572MNHxFB

100 pin packages as below:

R5F572MDDxFP
R5F572MDHxFP
R5F572MNDxFP
R5F572MNHxFP

(2) Build and link options (lib) will be set automatically according to MDF configurations of FIT components when generating codes*

The RTOS Configurator has been improved for e2 studio 2021-04.

RTOS Configurator,
Smart Configurator RX

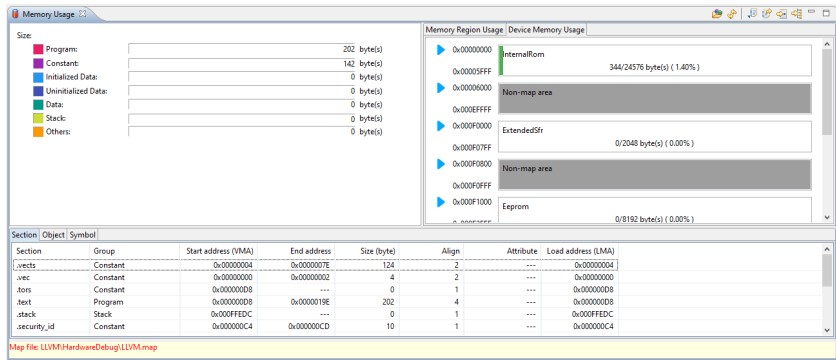
Property	Value
▼ Configurations	
# Enable threadx max priority	<input type="checkbox"/> Disable
# Max priority	32
# Enable threadx minimum stack	<input type="checkbox"/> Disable
# Minimum stack	0
# Enable threadx stack size	<input type="checkbox"/> Disable
# Timer stack size	128
# Enable threadx timer priority	<input type="checkbox"/> Disable
# Timer priority	1

From e2 studio 2021-04, you can create new GCC RX and CCRX project with Azure RTOS,

Azure RTOS software packages can be downloaded by clicking "Manage RTOS Versions..." link.

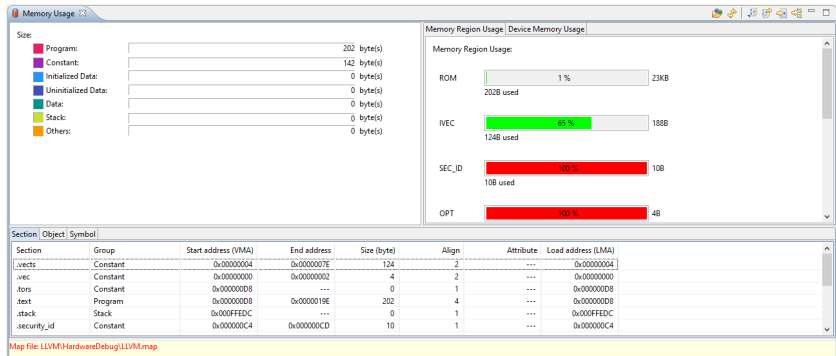
After project generation, you can add/remove Azure RTOS library (e.g., NetX Duo, FileX)
And you are able to configure it by using the user interface.

Memory Usage is now supporting the LLVM RL78 toolchain.

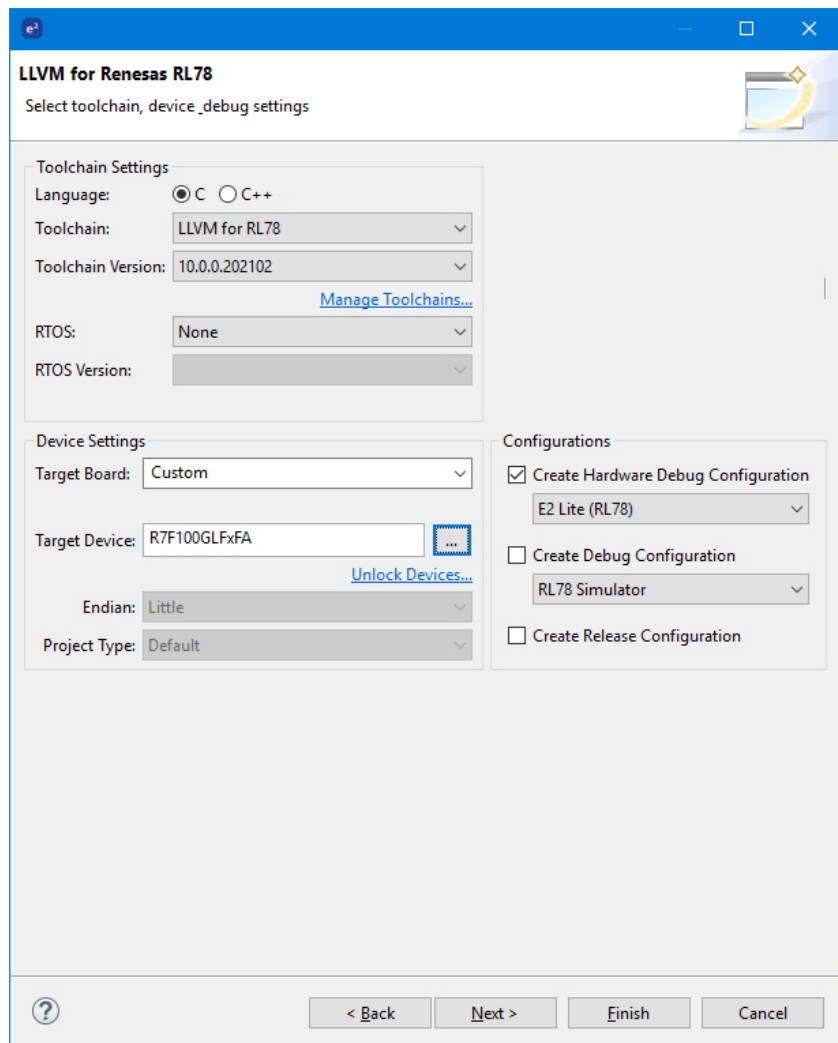


Memory Usage plugin

RL



Memory Usage plugin shows Device Memory Usage area when using the LLVM RL78 toolchain.



RL78 LLVM Plugins RL

The new LLVM for RL78 toolchain has been integrated into e2 studio. The new toolchain offers the same functionality as the RL78 GCC toolchain.

Like the CC-RL toolchain the SMS assembler is integrated and supported for the RL78/G23 device.

Project generation and build is supported. The output can be debugged as normal with all RL78 debug options.

The memory usage view is also supported for this toolchain in 2021-04.

A converter is available to convert your existing GCC projects to LLVM. Minimal code changes are required, and options and project files will be converted to work with the LLVM for RL78 build plugins.

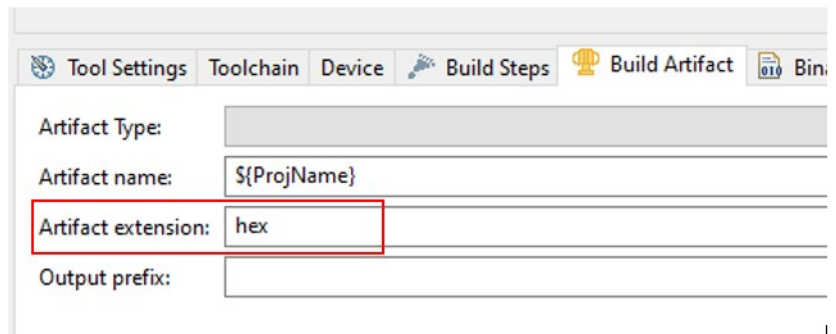
The toolchain can be downloaded from [<https://llvm-gcc-renesas.com/>].

It offers a much better code size with projects around 20-30% smaller than the alternative GCC toolchain for RL78 it replaces.

CCRL Build plugin,
CCRX Build plugin

RX, RL

The build Artifact extension is now modified depending on the linker output format.



Build Artifact Extensions depend on the Linker's output format instead of Converter's output.

The linker formats and artifact extensions are matched as following table:

Linker output format	Build Artifact extension
Absolute	abs
System library	lib
User library	Lib
Relocatable	rel

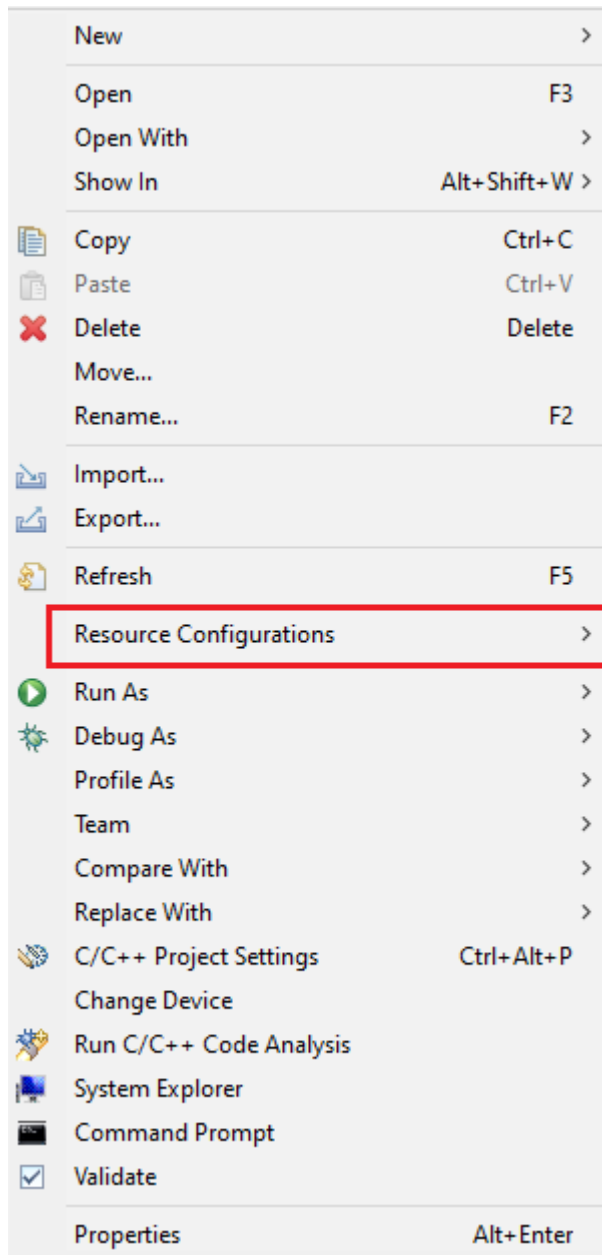
Example:

+ Select "Absolute" for output format of Linker tool, the artifact extension is changed to "abs" value.

+ Build project

+ Output of linker phase is generated with abs extension

When using the SMS Assembler tool we must support export "exclude source files" for the SMS Assembler smsasm file.



CCRL build plugins RL

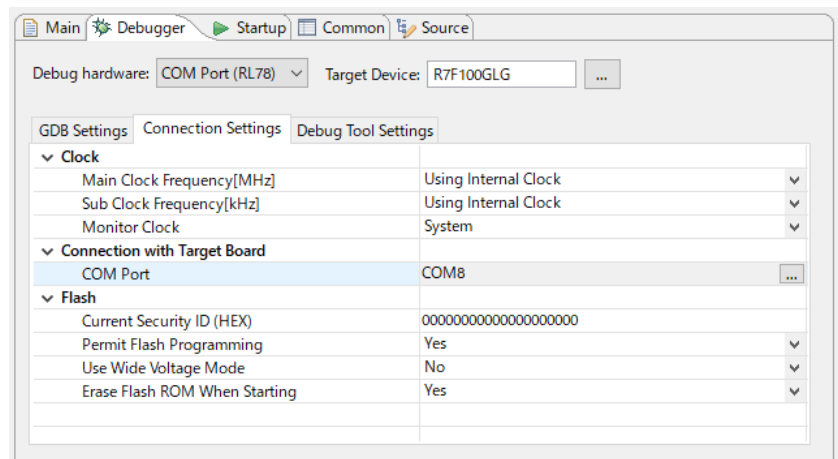
Information of any excluded. smsasm files are preserved in exporting and importing SMS Assembler project from IDE to other IDE.

Example: On e2studio, exclude a .smsasm file from build and export the project. Then import the project on CS+, the file still be excluded from build.

The RL78/G23 supports 2-wired debugging.

RL Debug
Configuration

RL



RL78/G23 is supported with E2 and E2 Lite emulator. Also, it can support debugging by COM port communication.

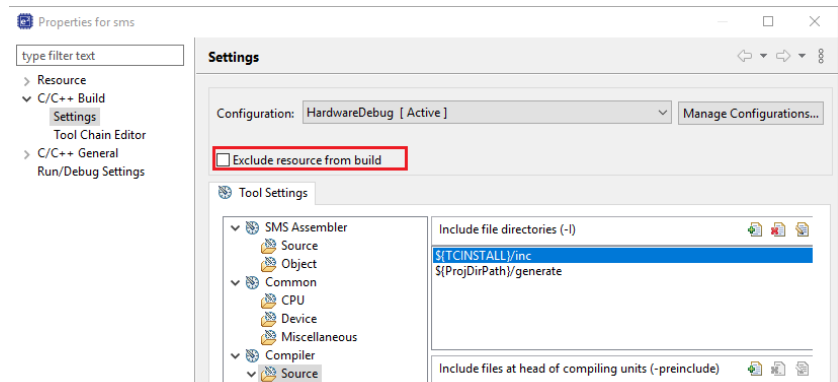
e2 studio supports the debug configuration for COM Port debugging for the device.

COM Port communication allows to start debugging without emulators, although the performance of debugging is slower than using emulators.

Support SMS Assembler on CC-RL Builder

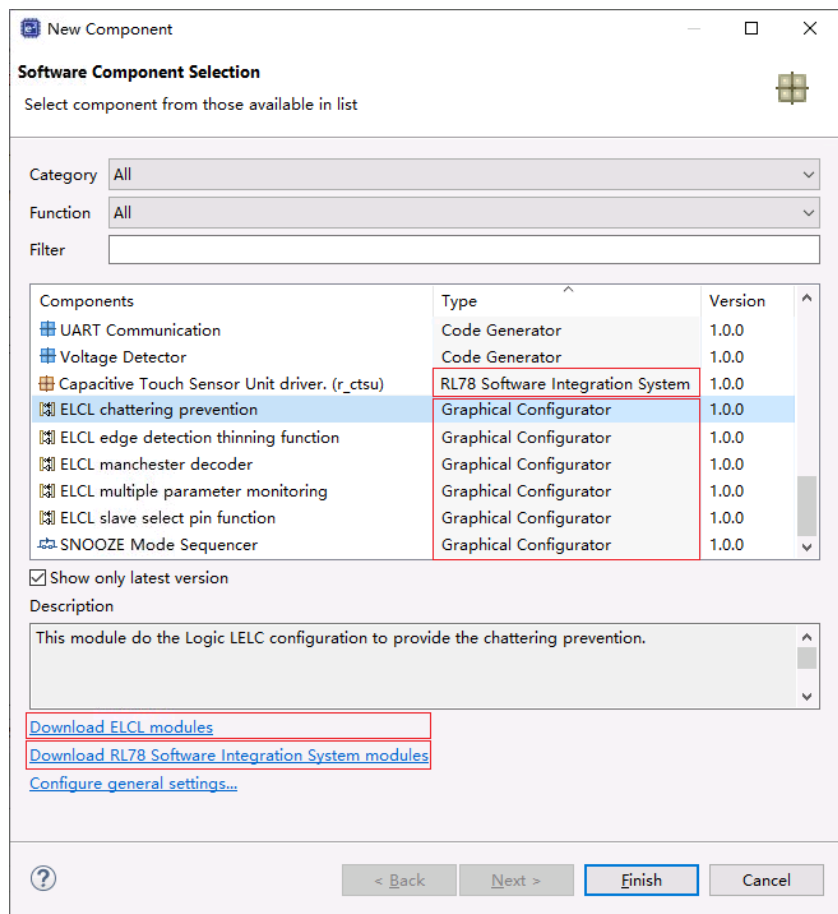
CCRL Build plugin,
CubeSuite+
importer/exporter,
Project Generation
CCRL

RL



SMS Assembler on CC-RL Builder is supported. Features such as setting build options, importing/exporting common projects with the SMS Assembler tool on Renesas CC-RL projects are supported.

Smart Configurator for RL78/G23



Smart Configurator RL

The Smart Configurator is now available for the RL78 device family.

1. Smart Configurator for RL78 supports RL78/G23 group devices with tool chain for:

- * Renesas CC-RL
- * LLVM for Renesas RL78

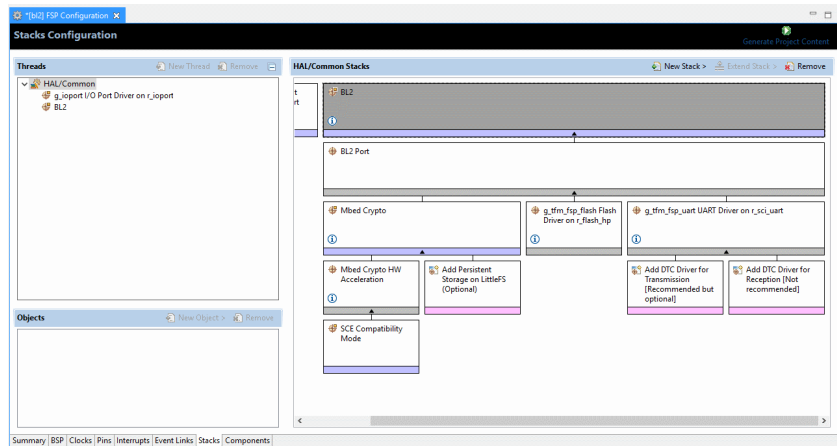
2. Smart Configurator for RL78 supports 2 new type software components:

Graphical Configurator (SMS, ELCL) and RL78 Software Integration System, the 2 new type components support the download function.

Bootloader-defined Memory Region Data features are supported for RA.

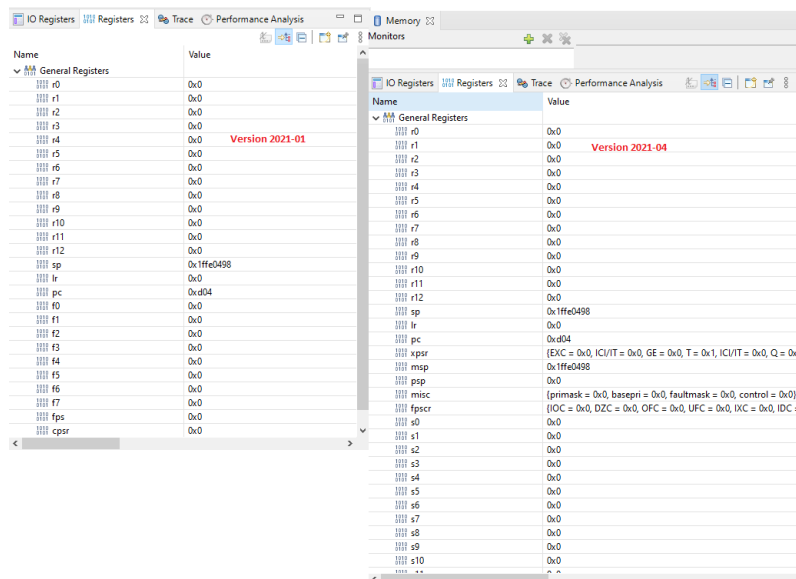
FSP Code
Generation &
Builder

RA



A new feature has been added to add bootloader capability to an existing RA project. This utilises the bootloader feature as implemented in FSP 3.0.

Interrupt/exception stack trace for ARM CM4 with floating point.



GDB server

RE, RA

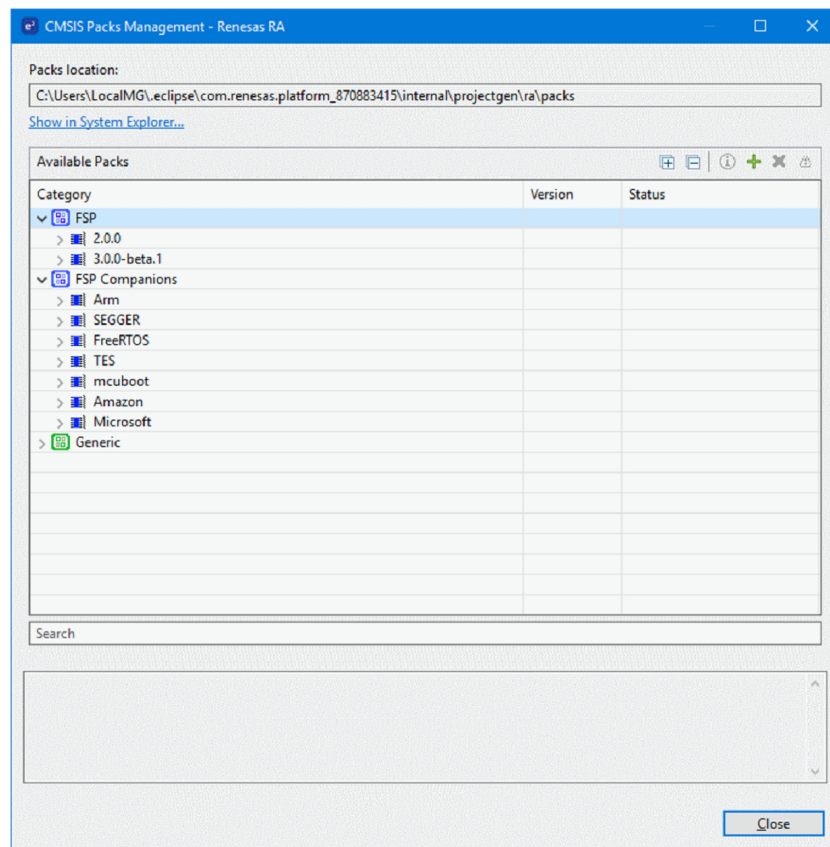
Interrupt/exception stacktrace for CM4 with having FP

When exception/interrupt occurs during debug RA devices (CM4 processor), the state of floating-point context will be saved in case the Process Stack pointer (PSP) is selected.

This selects the thread for exception/interrupt to see floating point registers value before exception/interrupt occurs.

CMSIS Packs Management Dialog

DDSC/FSP Packs Management Dialog RA

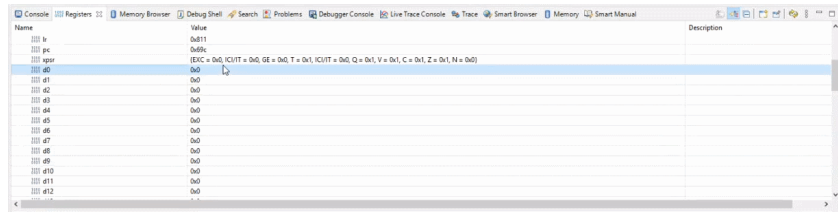


A new Pack Management dialog has been added to allow you to view the installed CMSIS packs for RA, RE and RZ device families within your e2 studio installation.

The feature will also allow you to view the status of the packs, giving details of any errors within each pack.

There are a number of other operations available within this feature too such as allowing easy importing and deletion of packs from your system, and re-installation of deleted Pack support files.

Show FPU registers (D0-D15) for ARMv8-M with FPU devices.



Show FPU registers (D0-D15) for ARMv8-M with FPU devices.

GDB Server E2
ARM, GDB Server RA
RA

ARM VFP double precision registers `_(d0-d15)_` are now supported in Register View for ARMv8-M devices.

Single precision registers `_(s0-s31)_` are derived from the double precision registers where `_(dn)_` consists of `_(s(2n))_` as the least significant half and `_(s(2n+1))_` as the most significant half.

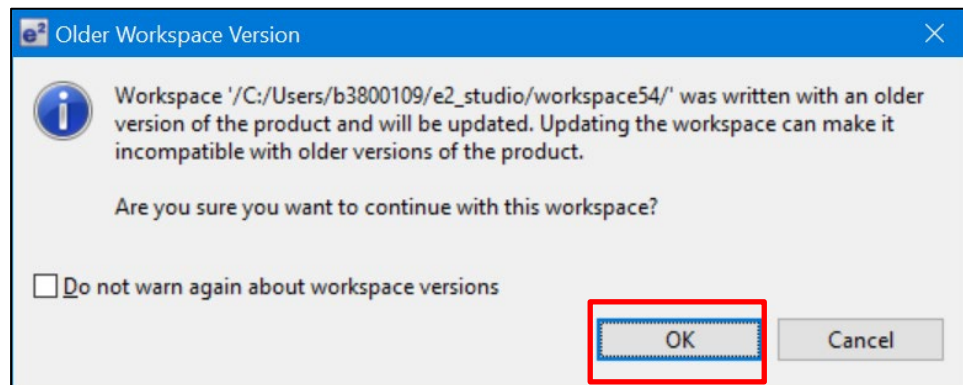
5. Useful workarounds and information for 2021-04

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.

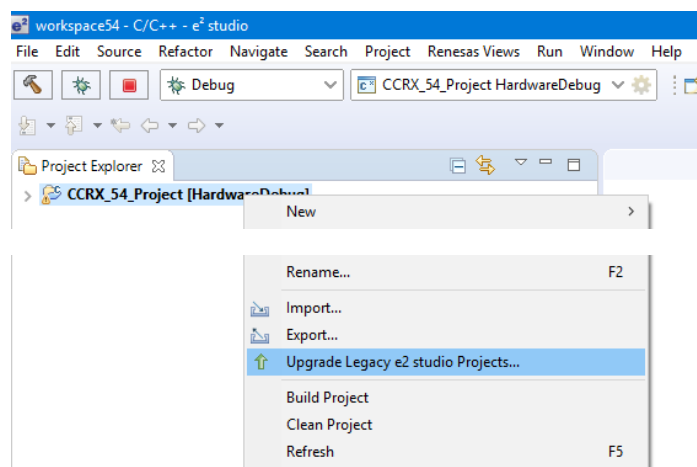
Upon opening an older workspace, the following dialog would be displayed:



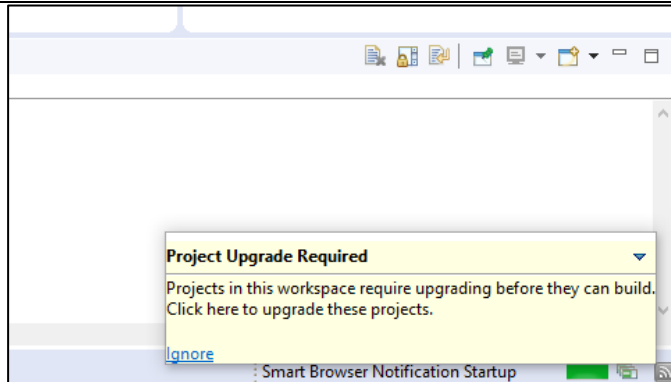
Clicking OK will update the workspace to the newer e² studio.

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

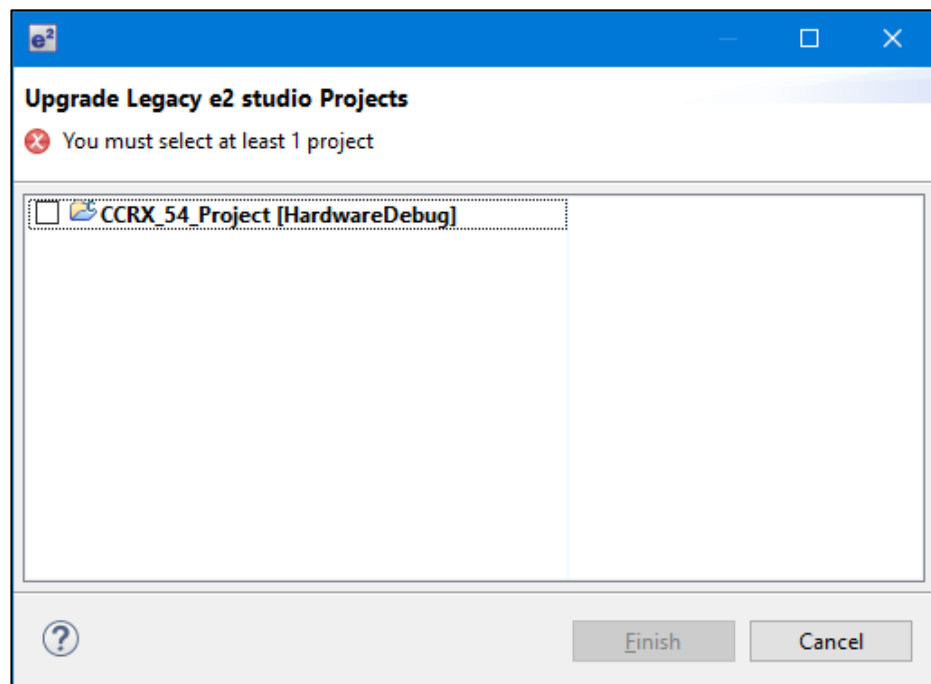
If for some reason this process does not start it is also possible to launch the “Upgrade Legacy of e2 studio Projects...” from the project context menu.



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:

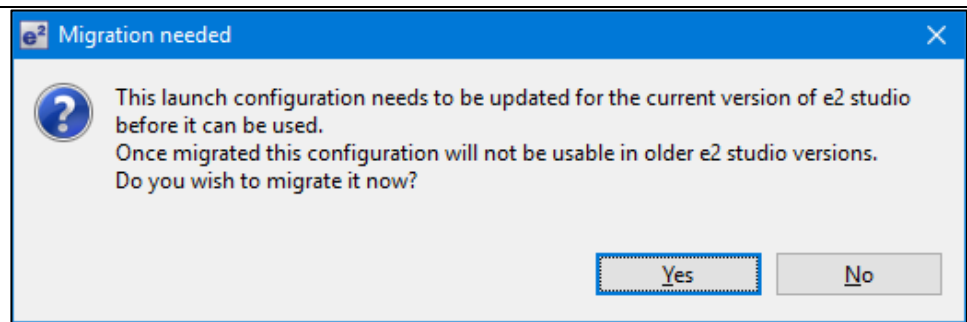


To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

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.



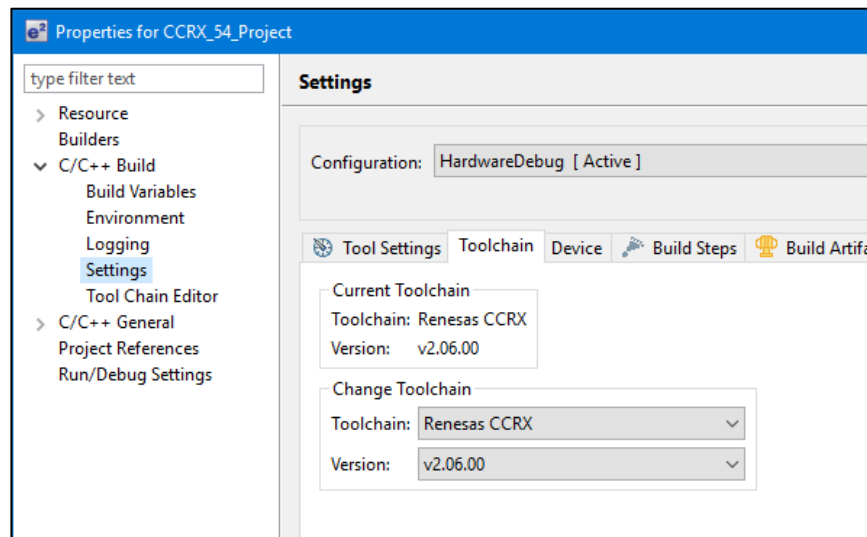
Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

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

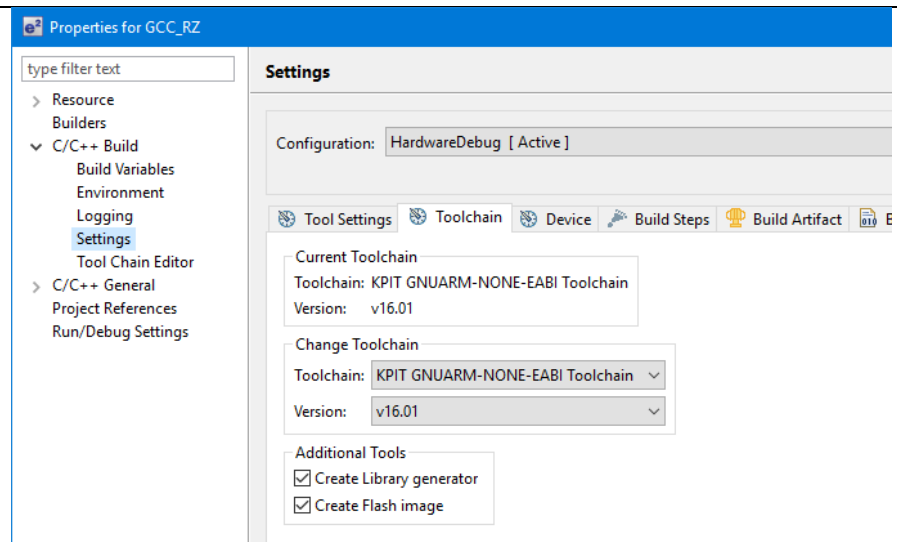
The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e² studio product but now using the gnuarmeclipse plugins.

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.

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.

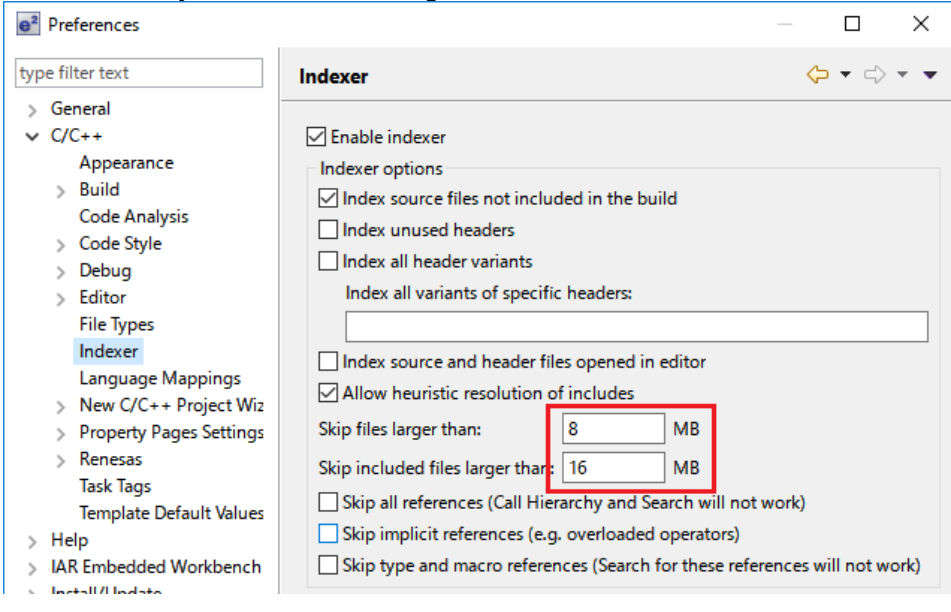
1. Open Property.
2. Select [C/C++ build]-[Settings] at left side.
3. Select 'IAR RL78 Xlink linker' at right side, add '-HFF' at the textbox 'command'.

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	<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.kpitgntools.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>
		
<p>Put larger values for each red-framed variables, then rebuild project or rebuild index.</p>		
2728	GDB	<p>Step into does not always work when using the CC-RX 1.02.01 toolchain.</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.

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 through 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

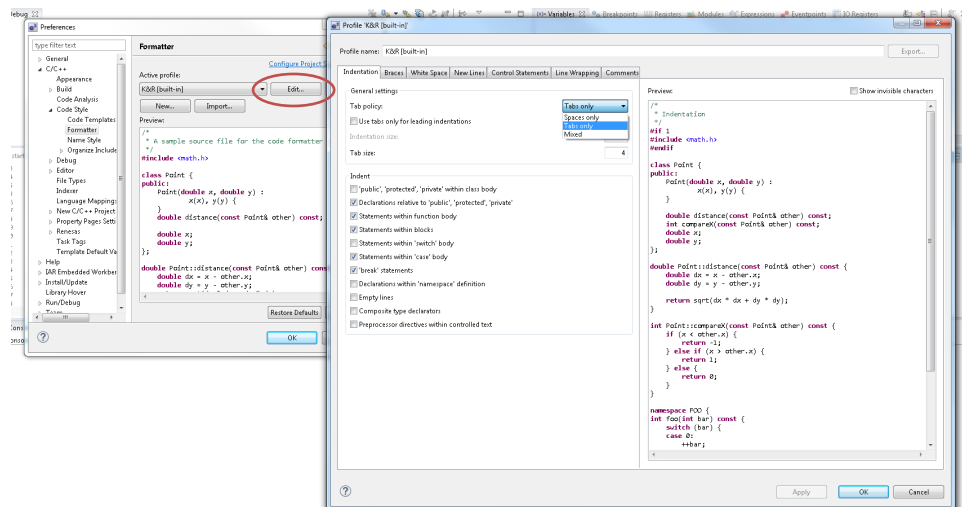
7217 Application The restore default settings does not restore all the options set during project generation. Instead, it sets the defaults to the base settings for the device family in use.

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]

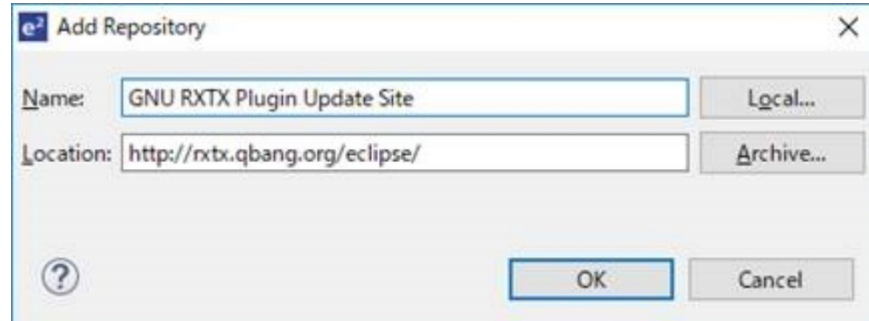
		<p>"Generate Target-Walkable Stack" -> On</p> <p>If this option is not specified, Step Over and Step Return may not work properly.</p>
17052	Debugging	<p>When debugging using a project with duplicate filenames that are in different source folders problems can be seen with breakpoint setting.</p> <p>When 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 <code>--gc-sections</code> 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 <code>--gc-sections</code> until those functions are used b. remove the unused functions
	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>-mfpu=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>-mfpu=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. C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601-1047\CodeGenerator\Tools\register COM.bat</p>
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	When using RZ/G Linux Platform Tools, gnu.io.rtx plug-ins should be installed same as Nebula plug-ins.

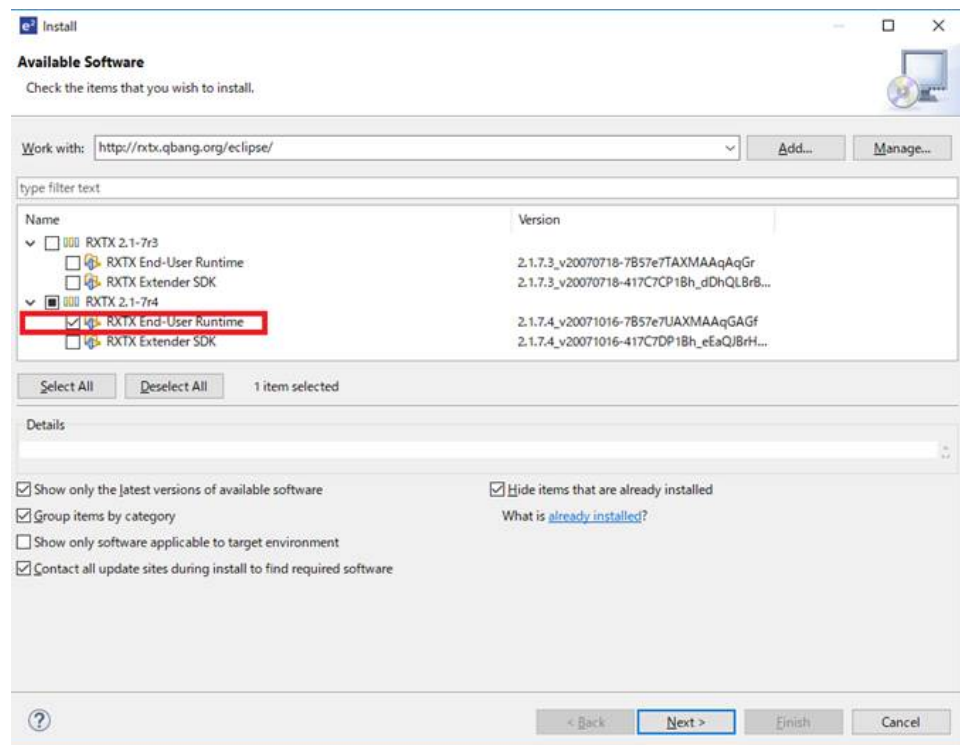
Please follow the below steps to install gnu.io.rtx plug-ins.

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://rtx.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 MyRenasas

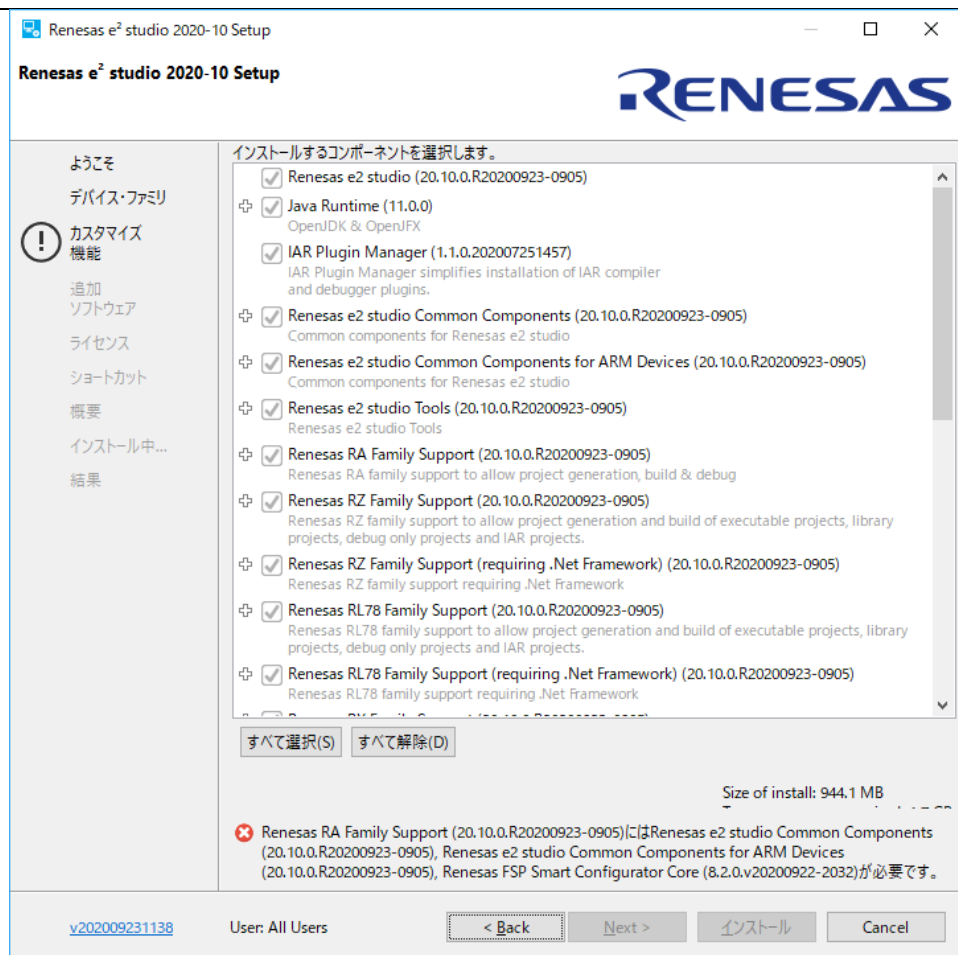
Due to differences in the login data between 7.8 and the 2020-04 e² studio (or later) version the FreeRTOS download feature does not work in 7.7/8 if the user has logged into MyRenasas or changed their login data details using 2020-04. If you previously used 7.7/8 prior to using 2020-04 and have not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

If you need to use MyRenasas 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	<p>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.</p> <p>This can then result in many false positives for memory changes, resulting in more memory changes than expected. (red text)</p> <p>To fix this the debugger supports detection and filling of blank addresses areas with a user specified hex byte value.</p> <p>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: <code>-uBlankFlashFill=BB</code> with the blank fill value being 0xBB. Specifying this value enables the feature, by default it is off.</p>
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	<p>When debugging a secure and non-secure project - the Non-secure callable functions do not have debug information.</p> <p>This means you cannot set breakpoints in the secure function.</p>
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	<p>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.</p> <p>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.</p>



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.
IDE-42025	RL	After conversion of legacy projects 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.

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:

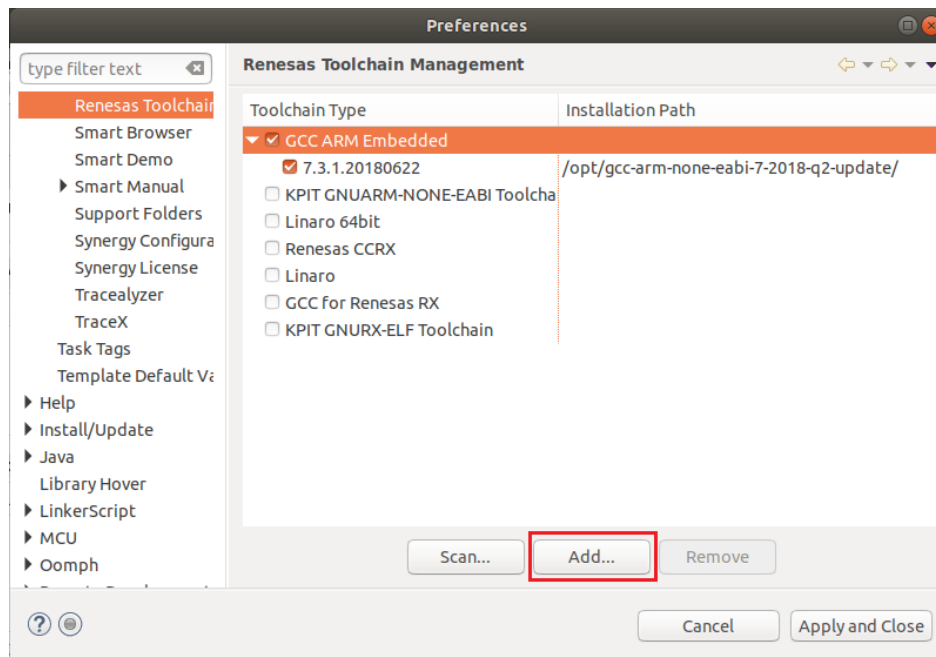
```
sudo mkdir -p /opt
```

```
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.

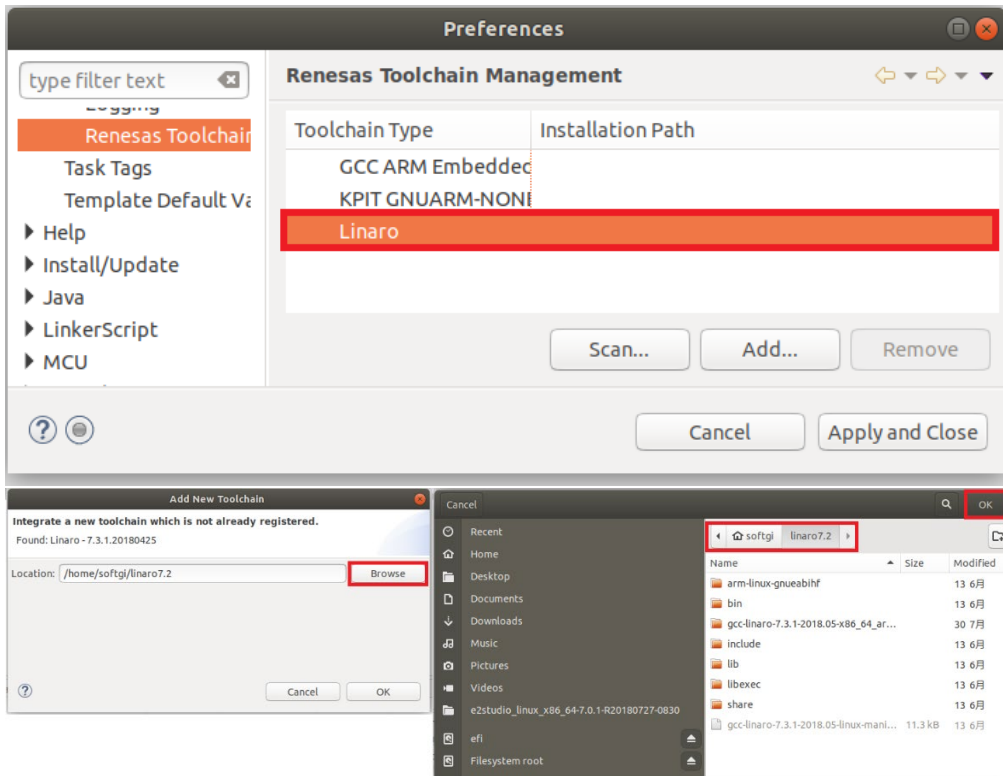


Figure 2. Register Toolchain: Browse toolchain location

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

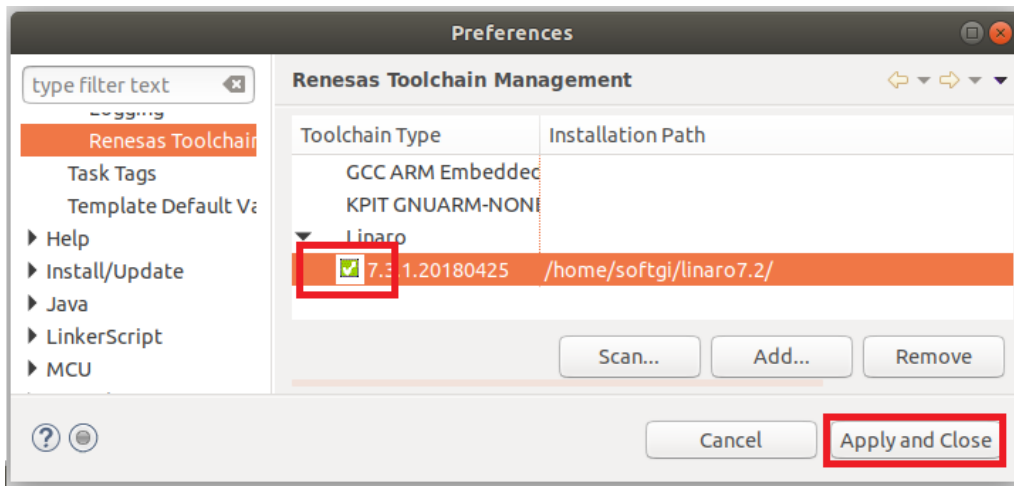


Figure 3. Register Toolchain: ex) Linaro

6.4 How to build and debug RA applications Overview

6.4.1 Build

Open the New project wizard and 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)

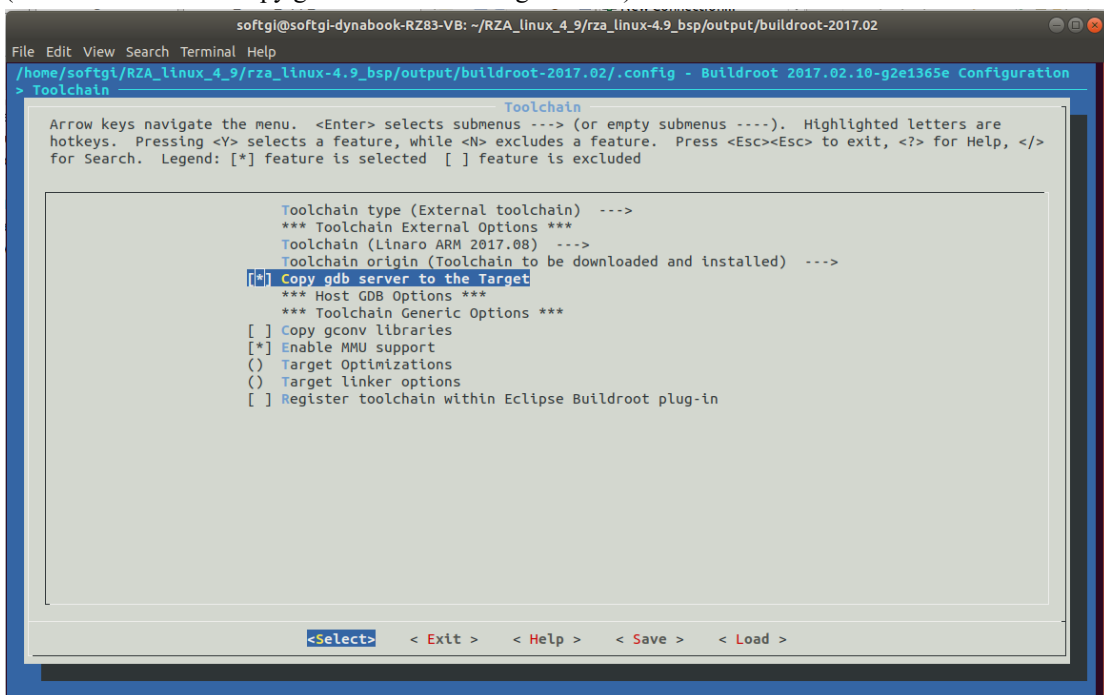


Figure 4. Menuconfig: set 'copy gdb server to the target'

- 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.

```
# 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.

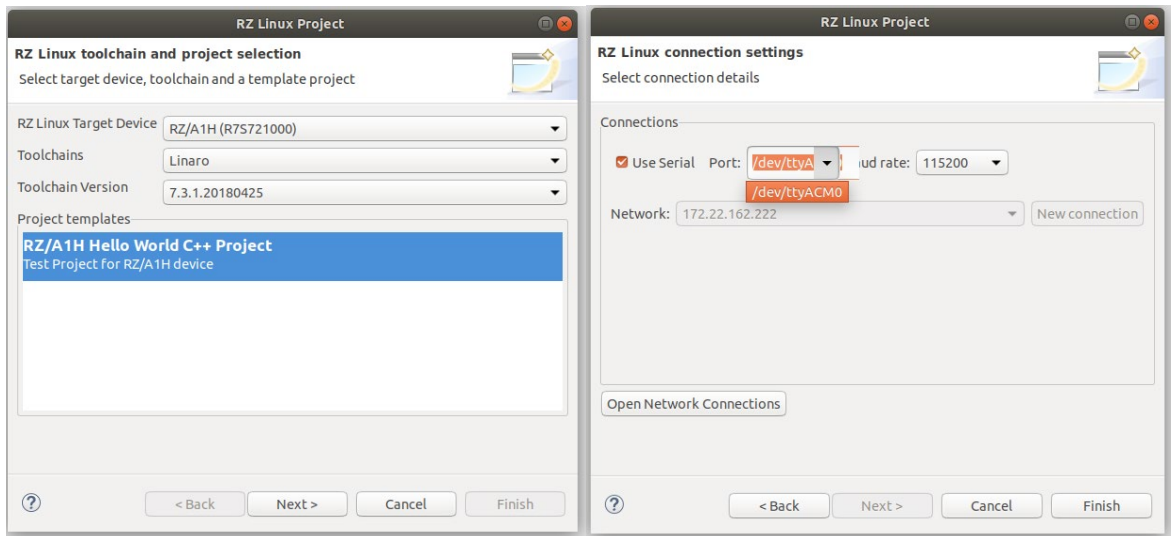


Figure 5. New RZ Linux project & connection setting: Serial port

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

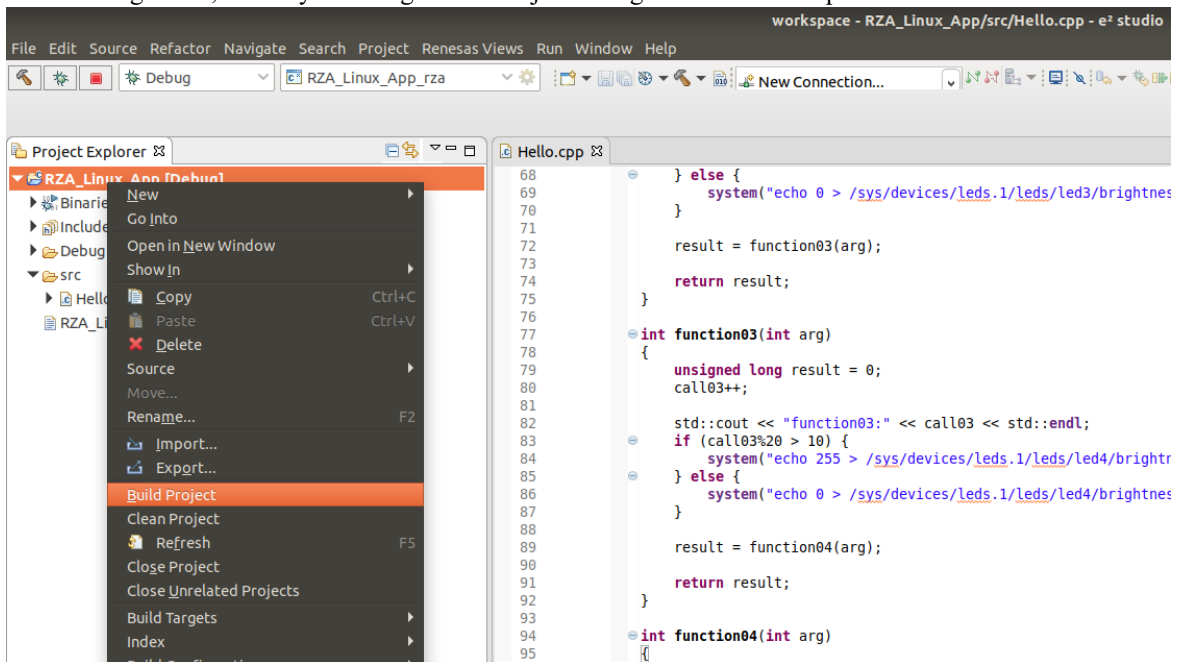


Figure 6. Build Project

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'.

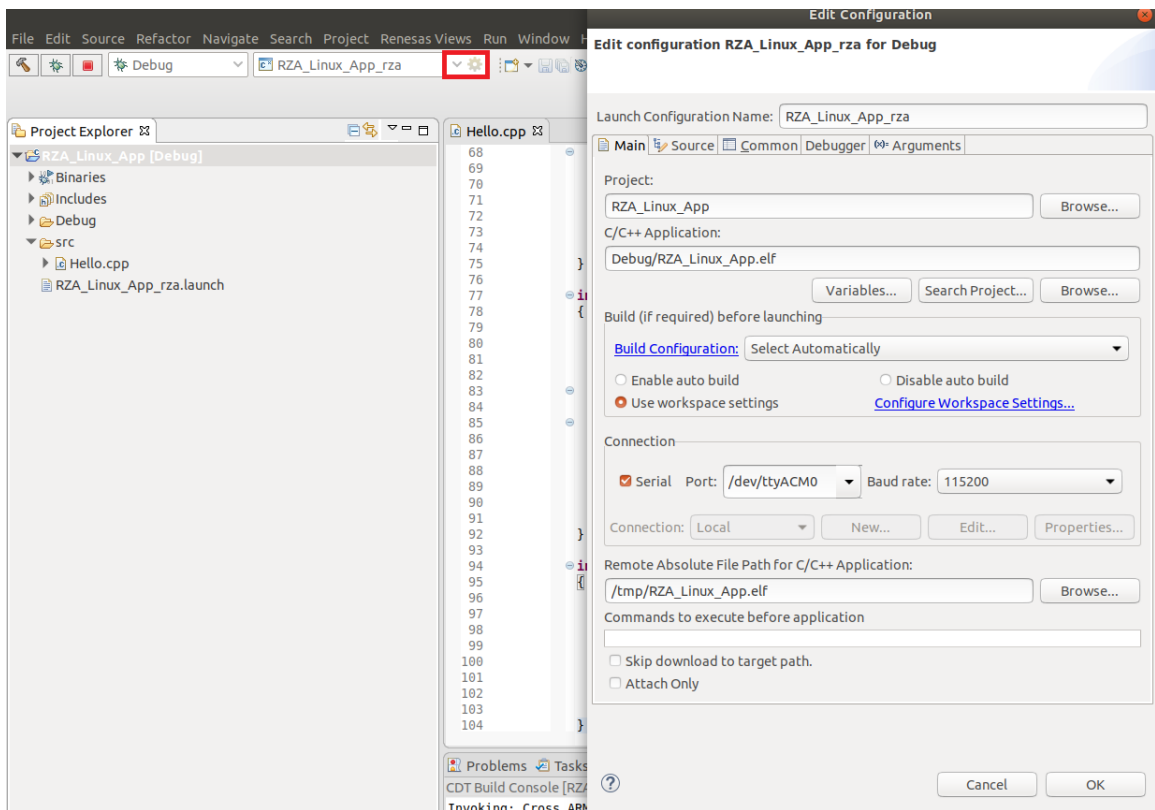



Figure 7. Connection configuration: Serial

- 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.

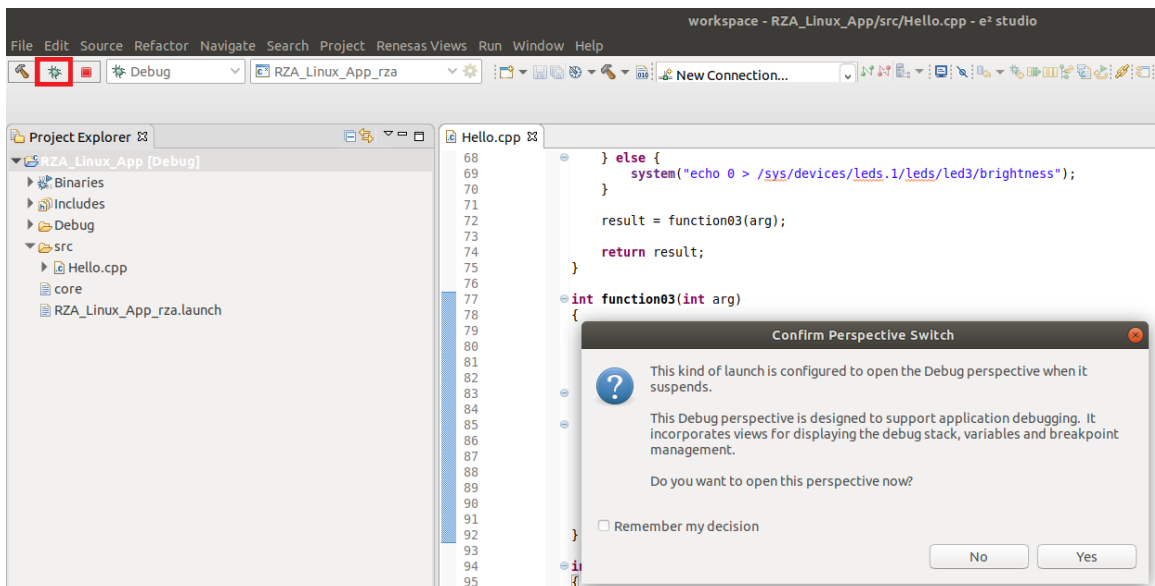


Figure 8. Debug: Perspective Switch

- D. 'Debug Perspective' provide ways for flow controls and configurations. 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.

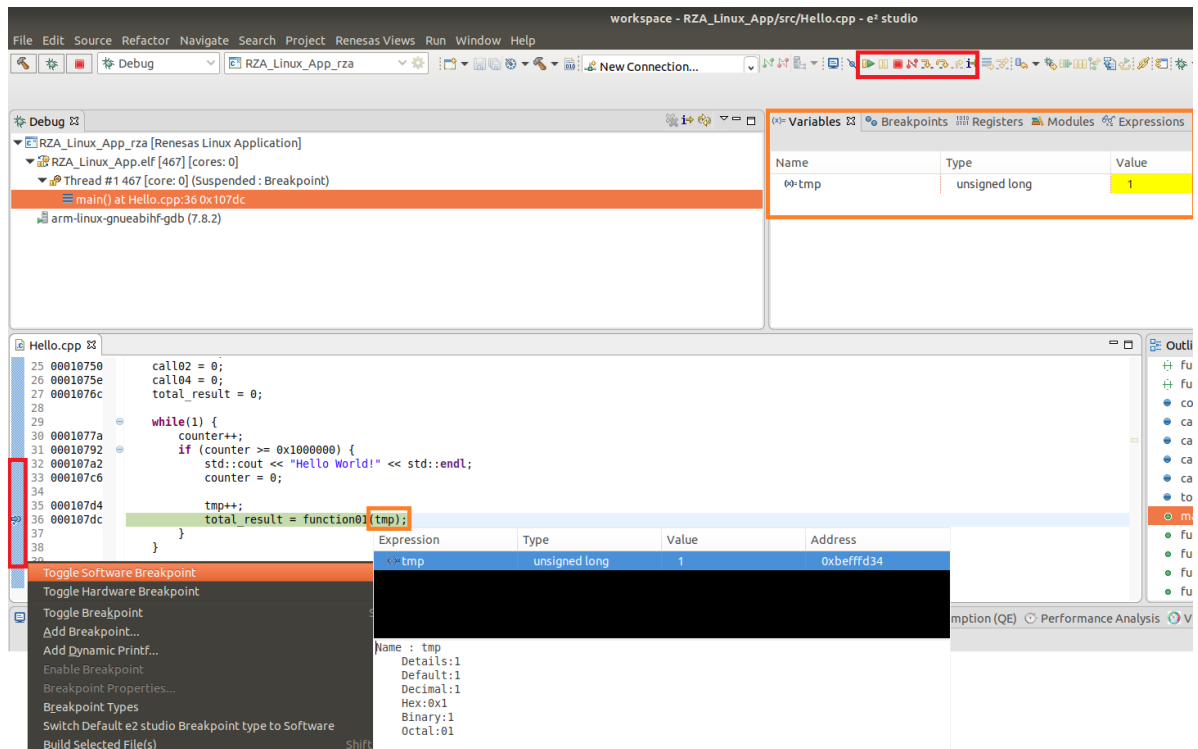


Figure 9. Debug: Control buttons, views, setting break point

7. Open Issues in 2021-04

Open issues in the e² studio 2021-04 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

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

8.2 Web Access and Privacy Policy

Collection of User Information Applications included in this package may access the Renesas Web site. In such cases, the following information is collected and recorded to Renesas server as a log.

- Date and time of access
- Access to URLs and files
- The unique certificate number linked to your account for MyRenesas (only when you log in to MyRenesas)
- The unique identification number linked to cookies for the Web browser (for cookies, refer to the privacy policy page stated below).

Logs are managed based on our privacy policy.

Refer to our privacy policy on the following Web page.

Privacy Policy:

<https://www.renesas.com/privacy.html>

All trademarks and registered trademarks are the property of their respective owners.

“FreeRTOS™ is the trademark of Amazon Web Services, Inc.

AWS™, Amazon Web Services™ is the trademark of Amazon Web Services, Inc.”

GITHUB® is the trademark registered in the United States by GitHub, Inc.

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation or any other use of the circuits, software, and information in the design of your product or system. Renesas Electronics disclaims any and all liability for any losses and damages incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics hereby expressly disclaims any warranties against and liability for infringement or any other claims involving patents, copyrights, or other intellectual property rights of third parties, by or arising from the use of Renesas Electronics products or technical information described in this document, including but not limited to, the product data, drawings, charts, programs, algorithms, and application examples.
3. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You shall be responsible for determining what licenses are required from any third parties, and obtaining such licenses for the lawful import, export, manufacture, sales, utilization, distribution or other disposal of any products incorporating Renesas Electronics products, if required.
5. You shall not alter, modify, copy, or reverse engineer any Renesas Electronics product, whether in whole or in part. Renesas Electronics disclaims any and all liability for any losses or damages incurred by you or third parties arising from such alteration, modification, copying or reverse engineering.
6. Renesas Electronics products are classified according to the following two quality grades: "Standard" and "High Quality". The intended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below.

"Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; industrial robots; etc.

"High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control (traffic lights); large-scale communication equipment; key financial terminal systems; safety control equipment; etc.

Unless expressly designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not intended or authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems; surgical implantations; etc.), or may cause serious property damage (space system; undersea repeaters; nuclear power control systems; aircraft control systems; key plant systems; military equipment; etc.). Renesas Electronics disclaims any and all liability for any damages or losses incurred by you or any third parties arising from the use of any Renesas Electronics product that is inconsistent with any Renesas Electronics data sheet, user's manual or other Renesas Electronics document.

7. No semiconductor product is absolutely secure. Notwithstanding any security measures or features that may be implemented in Renesas Electronics hardware or software products, Renesas Electronics shall have absolutely no liability arising out of any vulnerability or security breach, including but not limited to any unauthorized access to or use of a Renesas Electronics product or a system that uses a Renesas Electronics product. RENESAS ELECTRONICS DOES NOT WARRANT OR GUARANTEE THAT RENESAS ELECTRONICS PRODUCTS, OR ANY SYSTEMS CREATED USING RENESAS ELECTRONICS PRODUCTS WILL BE INVULNERABLE OR FREE FROM CORRUPTION, ATTACK, VIRUSES, INTERFERENCE, HACKING, DATA LOSS OR THEFT, OR OTHER SECURITY INTRUSION ("Vulnerability Issues"). RENESAS ELECTRONICS DISCLAIMS ANY AND ALL RESPONSIBILITY OR LIABILITY ARISING FROM OR RELATED TO ANY VULNERABILITY ISSUES. FURTHERMORE, TO THE EXTENT PERMITTED BY APPLICABLE LAW, RENESAS ELECTRONICS DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THIS DOCUMENT AND ANY RELATED OR ACCOMPANYING SOFTWARE OR HARDWARE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.
8. When using Renesas Electronics products, refer to the latest product information (data sheets, user's manuals, application notes, "General Notes for Handling and Using Semiconductor Devices" in the reliability handbook, etc.), and ensure that usage conditions are within the ranges specified by Renesas Electronics with respect to maximum ratings, operating power supply voltage range, heat dissipation characteristics, installation, etc. Renesas Electronics disclaims any and all liability for any malfunctions, failure or accident arising out of the use of Renesas Electronics products outside of such specified ranges.
9. Although Renesas Electronics endeavors to improve the quality and reliability of Renesas Electronics products, semiconductor products have specific characteristics, such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Unless designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not subject to radiation resistance design. You are responsible for implementing safety measures to guard against the possibility of bodily injury, injury or damage caused by fire, and/or danger to the public in the event of a failure or malfunction of Renesas Electronics products, such as safety design for hardware and software, including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult and impractical, you are responsible for evaluating the safety of the final products or systems manufactured by you.
10. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. You are responsible for carefully and sufficiently investigating applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive, and using Renesas Electronics products in compliance with all these applicable laws and regulations. Renesas Electronics disclaims any and all liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
11. Renesas Electronics products and technologies shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You shall comply with any applicable export control laws and regulations promulgated and administered by the governments of any countries asserting jurisdiction over the parties or transactions.
12. It is the responsibility of the buyer or distributor of Renesas Electronics products, or any other party who distributes, disposes of, or otherwise sells or transfers the product to a third party, to notify such third party in advance of the contents and conditions set forth in this document.
13. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
14. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products.

(Note1) "Renesas Electronics" as used in this document means Renesas Electronics Corporation and also includes its directly or indirectly controlled subsidiaries.

(Note2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

(Rev.5.0-1 October 2020)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

Contact information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:

www.renesas.com/contact/.