

**e<sup>2</sup> studio 2020-10 (R20200923-0905)**

R20UT4838EG0100

Rev.1.00

## Release Note

23<sup>rd</sup> September, 2020**Introduction**

This document outlines the device support, new features added in 2020-10, fixed issues and open issues in e<sup>2</sup> studio 2020-07.

**Contents**

<b>1. Product Information</b> .....	<b>3</b>
<b>1.1 Online update for 2020-10</b> .....	<b>3</b>
<b>1.2 Supported Operating Systems</b> .....	<b>3</b>
<b>1.2.1 Windows 64-bit product version</b> .....	<b>3</b>
<b>1.2.2 Linux version</b> .....	<b>5</b>
<b>1.3 Supported Toolchains – Windows Hosted</b> .....	<b>6</b>
<b>1.4 Supported Toolchains – Linux Hosted</b> .....	<b>7</b>
<b>2. Device Support</b> .....	<b>8</b>
<b>2.1 Project Generator Support – Windows Hosted</b> .....	<b>8</b>
<b>2.2 Code Generator Support – Windows Host</b> .....	<b>15</b>
<b>2.3 Smart Configurator Support – Windows Host</b> .....	<b>19</b>
<b>2.4 Project Generator Support – Linux Hosted</b> .....	<b>21</b>
<b>2.5 Smart Configurator Support – Linux Host</b> .....	<b>23</b>
<b>3. Smart Manual Support</b> .....	<b>24</b>
<b>4. What is new in 2020-10?</b> .....	<b>25</b>
<b>5. Useful workarounds and information for 2020-10</b> .....	<b>32</b>
<b>6. Linux version - How to install</b> .....	<b>44</b>
<b>6.1.1 Segger driver installation</b> .....	<b>44</b>
<b>6.1.2 FSP installation</b> .....	<b>44</b>
<b>6.2 How to run</b> .....	<b>45</b>
<b>6.3 Register toolchain to e<sup>2</sup> studio</b> .....	<b>45</b>
<b>6.3.1 GNU ARM Embedded</b> .....	<b>45</b>
<b>6.3.2 Linaro</b> .....	<b>46</b>
<b>6.4 How to build and debug RA applications Overview</b> .....	<b>47</b>
<b>6.4.1 Build</b> .....	<b>47</b>
<b>6.4.2 Debug</b> .....	<b>47</b>
<b>6.5 How to build and debug RZ Linux application Overview</b> .....	<b>47</b>
<b>6.5.1 How to add gdb-server to RZ/A Linux root file system</b> .....	<b>47</b>
<b>6.5.2 Linux C/C++ Project generation and build</b> .....	<b>49</b>
<b>6.5.3 GDB debug by using serial port communication</b> .....	<b>50</b>

---

- 7. Open Issues in 2020-10 ..... 52
- 8. Appendix..... 53
  - 8.1 Website and Support ..... 53
  - 8.2 Web Access and Privacy Policy ..... 53

## 1. Product Information

### 1.1 Online update for 2020-10

#### NOTE:

Updating e<sup>2</sup> studio to 2020-10 from 2020-07 or 2020-04 using the built-in update system will prevent e<sup>2</sup> studio from starting correctly if you have the Japanese or Chinese language packs installed.

To fix an e<sup>2</sup> studio in this state you need to run e<sup>2</sup> studio on the command line using the "-clean" option once the update has been performed. (e.g. "e2studio.exe -clean")

As a result of this the 2020-10 update will not be offered to 2020-07 users automatically. To update either use the installer to perform an upgrade or add "http://www2.renesas.eu/\_custom/software/ree\_eclipse/2020/2020-10/" as an update site within e<sup>2</sup> studio then perform "Check for updates..."

e<sup>2</sup> studio will automatically restart after the update process. If this restart fails when using the update from the installer, please kill the e<sup>2</sup> studio process from the Windows Task Manager.

### 1.2 Supported Operating Systems

These operating systems are officially supported by e<sup>2</sup> 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 e<sup>2</sup> studio.

e<sup>2</sup> studio 2020-10 now runs on Java 11 & does not support older Java versions.

#### 1.2.1 Windows 64-bit product version

Please note that 2020-04, 2020-07 and 2020-10 are 64-bit product build versions of the tool.

We would like to state that the workspaces and projects from 7.x versions of e<sup>2</sup> studio are fully compatible with 2020-10.

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 e<sup>2</sup> 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 e<sup>2</sup> studio 7.8 installer.

The RZ/G family is available in the 7.8 installer and the Linux version of 2020-10. Linux tools are now only available in the Linux host version of e<sup>2</sup> studio.

## 1.2.2 Linux version

The Linux product version of e<sup>2</sup> studio 2020-10 for Linux is based on the same content as the Windows release.

Therefore, documents of e<sup>2</sup> studio will be helpful for common usages. There are some differences, the Linux version only supports the RA and RZ device families in 2020-10.

For information on how to install the Linux product please refer to this section:

### 6 - Linux version - How to install

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

### 1.3 Supported Toolchains – Windows Hosted

The following toolchains are supported in e<sup>2</sup> studio 2020-10.

	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 e<sup>2</sup> 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://gcc-renesas.com/>. In addition, the latest RX and RL78 Renesas GCC toolchains are available from this website.

\*4: The IAR toolchain plugins are available via the “Help”->” IAR Embedded Workbench plugin manager” menu in e<sup>2</sup> studio. These Eclipse plugins are provided by IAR and are not supported by Renesas.

\*5: The Green Hills toolchain plugins are available within the e<sup>2</sup> studio product. These plugins are provided by Green Hills and are not supported by Renesas.

## 1.4 Supported Toolchains – Linux Hosted

The following toolchains are supported in e<sup>2</sup> studio 2020-10:

- 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 e<sup>2</sup> studio.

Family	Group	Devices		
EC-1	EC-1	R9A06G043		
	RA	RA2A1	R7FA2A1AB2CBT, R7FA2A1AB3CFJ, R7FA2A1AB3CFM, R7FA2A1AB3CNE, R7FA2A1AB3CNF	
		RA4M1	R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF	
		RA6M1	R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP, R7FA6M1AD3CNB	
		RA6M2	R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP, R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP	
		RA6M3	R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CFB, R7FA6M3AF3CFC, R7FA6M3AF3CFP, R7FA6M3AH2CBG, R7FA6M3AH2CLK, R7FA6M3AH3CFB, R7FA6M3AH3CFC, R7FA6M3AH3CFP	
		RA4W1	R7FA4W1AD2CNG	
		RA6M4	R7FA6M4AF3CFB, R7FA6M4AF3CFP, R7FA6M4AF3CFM, R7FA6M4AE3CFB, R7FA6M4AE3CFP, R7FA6M4AE3CFM, R7FA6M4AD3CFB, R7FA6M4AD3CFP, R7FA6M4AD3CFM	
		RE	RE01_1500KB	R7F0E014D2CFB, R7F0E014D2CFP, R7F0E015D2CFB, R7F0E015D2CFP, R7F0E016D2DBN, R7F0E017D2DBN
			RE01_256KB	R7F0E01082CFM, R7F0E01082CFP, R7F0E01082DBH, R7F0E01082DBR, R7F0E01082DNG, R7F0E01182CFM, R7F0E01182CFP, R7F0E01182DBH, R7F0E01182DBR, R7F0E01182DNG
RH850	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)		
	-	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,(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)

---

D1A	R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, R5F10DPK, R5F10DPL, R5F10DSJ, R5F10DSK, R5F10DSL, R5F10TPJ
F12	R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA, R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC, R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE, R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE
F13	R5F10A6A, R5F10A6C, R5F10A6D, R5F10A6E, R5F10AAA, R5F10AAC, R5F10AAD, R5F10AAE, R5F10ABA, R5F10ABC, R5F10ABD, R5F10ABE, R5F10AGA, R5F10AGC, R5F10AGD, R5F10AGE, R5F10AGF, R5F10AGG, R5F10ALC, R5F10ALD, R5F10ALE, R5F10ALF, R5F10ALG, R5F10AME, R5F10AMF, R5F10AMG, R5F10BAC, R5F10BAD, R5F10BAE, R5F10BAF, R5F10BAG, R5F10BBC, R5F10BBD, R5F10BBE, R5F10BBF, R5F10BBG, R5F10BGC, R5F10BGD, R5F10BGE, R5F10BGF, R5F10BGG, R5F10BLC, R5F10BLD, R5F10BLE, R5F10BLF, R5F10BLG, R5F10BME, R5F10BMF, R5F10BMG
RL78	
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, R5F10E8C, 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
	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, R5F10NPG, R5F10NPJ
	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, R5F10WVG
	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
	113	R5F51135, R5F51136, R5F51137, R5F51138
	130	R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308
RX	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, 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)
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
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

Synergy

## 2.2 Code Generator Support – Windows Host

Family	Group	Devices
RL78	D1A	R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLA, 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, R5F10BBB, 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, 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
	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, R5F10NPJ
	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
	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
RX	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	
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	
	230	R5F52305, R5F52306	
	231	R5F52315, R5F52316, R5F52317, R5F52318	
	23E-A	R5F523E5A, R5F523E5S, R5F523E6A, R5F523E6S	
	23T	R5F523T3, R5F523T5	
	23W	R5F523W7, R5F523W8	
	24T	R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE	
	24U	R5F524UB, R5F524UC, R5F524UE	
	64M	R5F564MF, R5F564MG, R5F564MJ, R5F564ML	
	651	R5F56514, R5F56517, R5F56519, R5F5651C, R5F5651C_DUAL, R5F5651E, R5F5651E_DUAL	
	65N	R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL	
	66N	R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL	
	66T	R5F566TA, R5F566TE, R5F566TF, R5F566TK	
	71M	R5F571MF, R5F571MG, R5F571MJ, R5F571ML	
	72M	R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL	
	72N	R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL	
	72T	R5F572TF, R5F572TK	
	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
RA2A1	R7FA2A1AB2CBT, R7FA2A1AB3CFJ, R7FA2A1AB3CFM, R7FA2A1AB3CNE, R7FA2A1AB3CNF
RA4M1	R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF
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
RA4W1	R7FA4W1AD2CNG

RA

## 2.4 Project Generator Support – Linux Hosted

Note: The Renesas SH device family is no longer supported in e<sup>2</sup> studio.

Family	Group	Devices
RA	RA2A1	R7FA2A1AB2CBT, R7FA2A1AB3CFJ, R7FA2A1AB3CFM, R7FA2A1AB3CNE, R7FA2A1AB3CNF
	RA4M1	R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF
	RA6M1	R7FA6M1AD2CLJ, R7FA6M1AD3CFM, R7FA6M1AD3CFP, R7FA6M1AD3CNB
	RA6M2	R7FA6M2AD2CLK, R7FA6M2AD3CFB, R7FA6M2AD3CFP, R7FA6M2AF2CLK, R7FA6M2AF3CFB, R7FA6M2AF3CFP
	RA6M3	R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CFB, R7FA6M3AF3CFC, R7FA6M3AF3CFP, R7FA6M3AH2CBG, R7FA6M3AH2CLK, R7FA6M3AH3CFB, R7FA6M3AH3CFC, R7FA6M3AH3CFP
	RA4W1	R7FA4W1AD2CNG
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	
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

## 2.5 Smart Configurator Support – Linux Host

Family	Group	Devices
RA	RA2A1	R7FA2A1AB2CBT, R7FA2A1AB3CFJ, R7FA2A1AB3CFM, R7FA2A1AB3CNE, R7FA2A1AB3CNF
	RA4M1	R7FA4M1AB2CLJ, R7FA4M1AB3CFL, R7FA4M1AB3CFM, R7FA4M1AB3CFP, R7FA4M1AB3CNB, R7FA4M1AB3CNE, R7FA4M1AB3CNF
	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
	RA4W1	R7FA4W1AD2CNG

### 3. Smart Manual Support

Smart manual support is delivered independently of e<sup>2</sup> studio releases when available. The following devices are available as of October 2020:

- 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



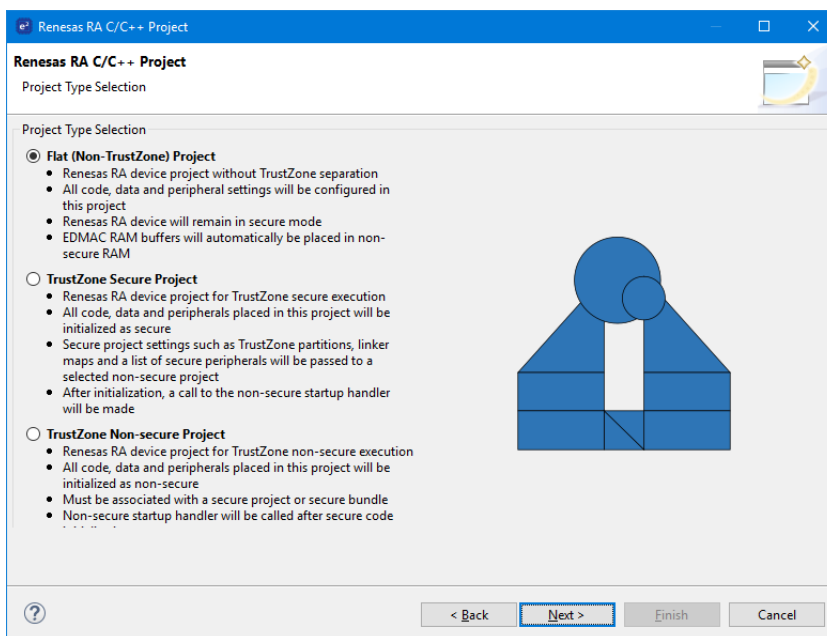
4. What is new in 2020-10?

Component	Device	Description
		2020-10 is based on the updated Eclipse Platform 2020-09 & CDT 9.11 which includes new features & performance improvements.
Application	All	<p>Various changes have been made which can be viewed in the link below:</p> <p><a href="https://wiki.eclipse.org/CDT/User/NewIn911">https://wiki.eclipse.org/CDT/User/NewIn911</a></p>

The RA project generator has been updated to support the different project types for TrustZone support.

RA Project Generation and Smart Configurator

RA



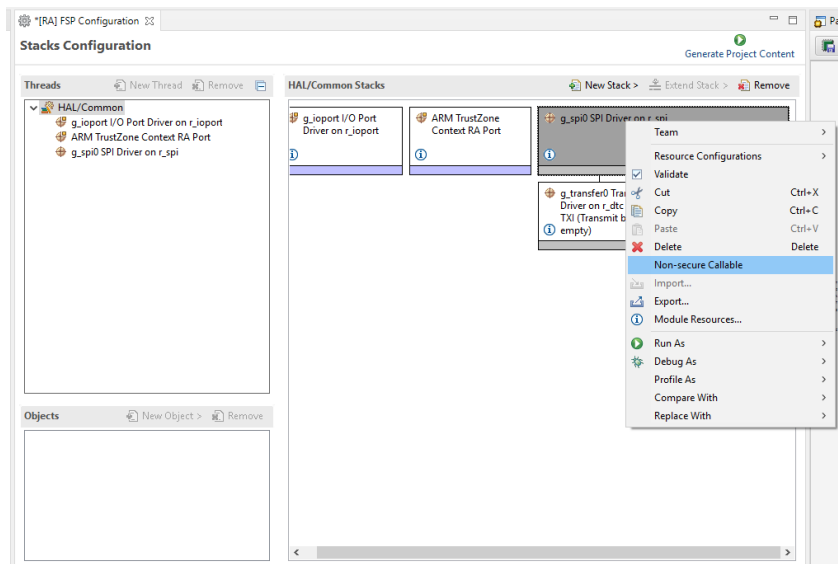
You can now create Flat (Non-TrustZone), TrustZone Secure Project (allowing execution in the secure area of the device) and TrustZone Non-secure Project (allowing execution in the non-secure area of the device)

RA Smart Configurator

RA

When configuring a TrustZone Secure Project in the RA it is possible to expose secure components to the Non-Secure project.

This is possible by right-clicking on the module in the “Stacks Configuration” and selecting “Non-secure Callable” on the pop-up menu.



ARM TrustZone technology provides a system-wide approach to security with hardware-enforced isolation integrated into the CPU.

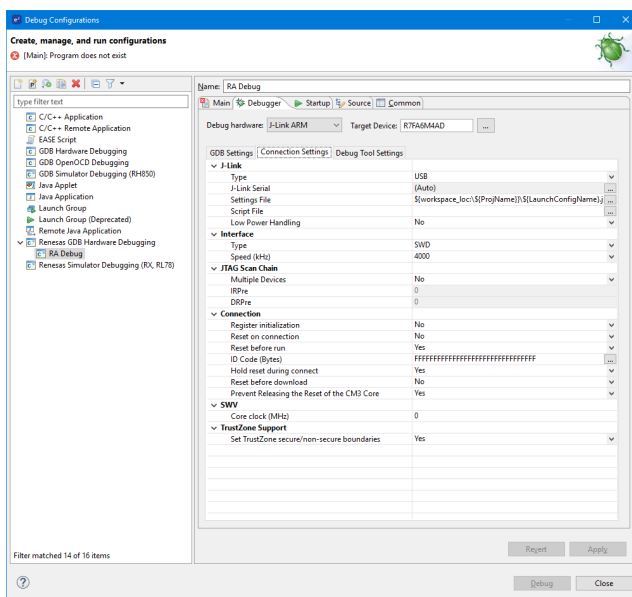
e<sup>2</sup> studio now provides debugging features for both secure and non-secure applications on Renesas devices with ARM TrustZone.

e<sup>2</sup> studio automatically creates Debug Configurations for your secure and non-secure TrustZone projects.

e<sup>2</sup> studio automatically programs the memory boundaries to separate the memory regions according to the TrustZone projects configuration when a debugging connection is initiated.

This feature brings convenience as you do not have to manually program the memory boundaries each time the size of the secure program changes.

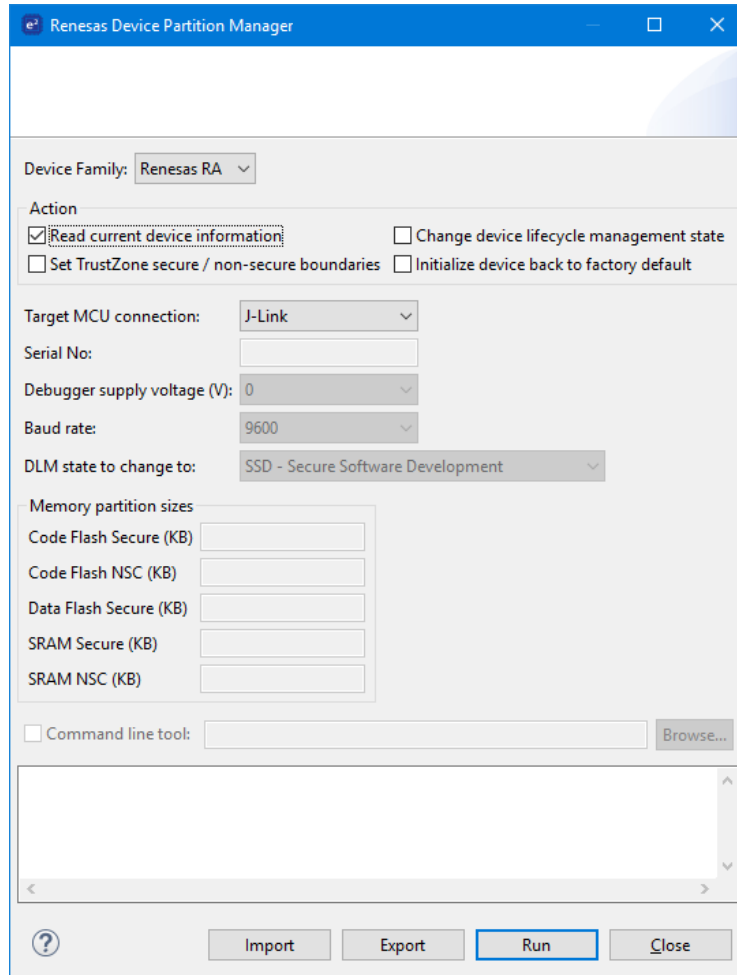
RA Debugging RA



Renesas Device Partition Manager is a tool embedded into e<sup>2</sup> studio to assist debugging TrustZone projects by providing TrustZone related features, e.g.: DLM state transitioning, secure/non-secure memory boundaries setting, device initialization and current device status retrieval.

The purpose of Renesas Device Partition Manager is to provide only the basic and essential TrustZone related features embedded within e<sup>2</sup> studio to ease the process of TrustZone debugging.

RA Debugging      RA



When creating new FreeRTOS (with IoT libraries) project, the tool will check current selected board and device, and inform user if current downloaded RTOS package does not support selected board and device.

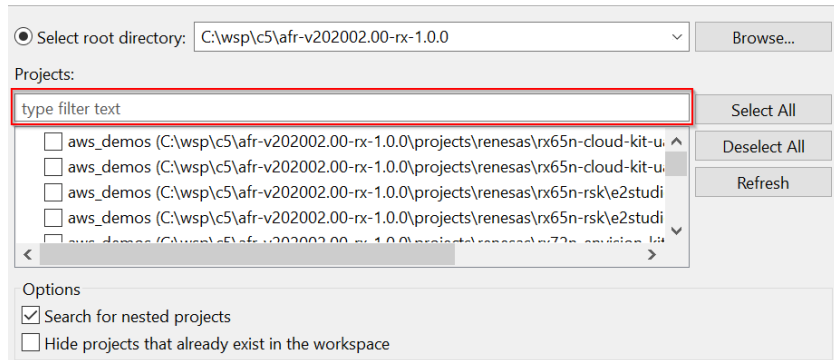
FreeRTOS Configurator      RX, RZ

In case selected board is supported, the tool will create project with appropriate source files and settings for that board.

There is an improvement on Renesas GitHub FreeRTOS Import feature. Filter text box is added to quickly filter project by inputting any information e.g. board, compiler, application type etc.

### Import Projects

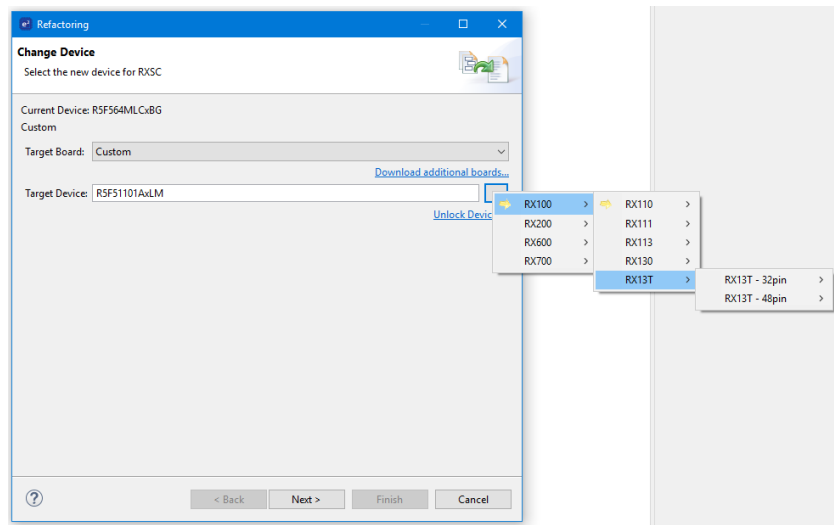
Select a directory to search for existing Renesas projects.



The RX Smart Configurator has been enhanced in numerous areas:

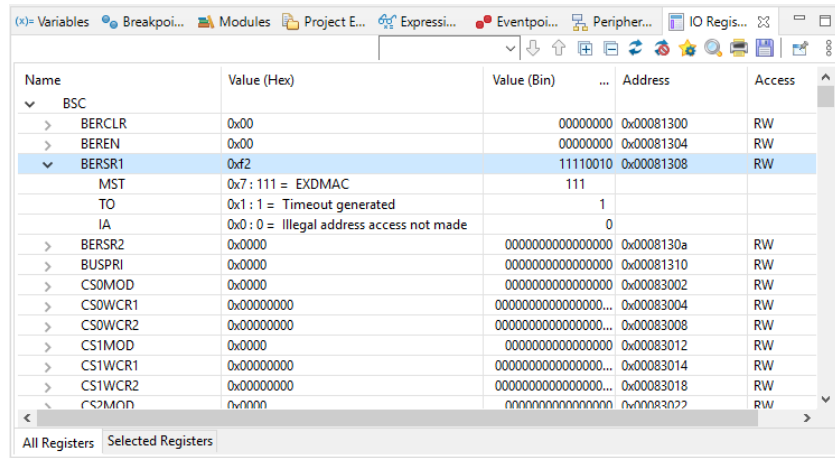
1. RX13T QFN packages are supported
  - R5F513T5AxNE
  - R5F513T5AxNF
2. RX23E-A 1 Unit DSAD packages are supported
  - R5F523E5SxFL
  - R5F523E6SxFL
  - R5F523E5SxNF
  - R5F523E6SxNF
3. New features
  - Improved performance at initial loading of the Smart Configurator tool and during the device change operation.
  - The component name (e.g. SCI(SCIF) Clock synchronous mode) is now displayed in the configuration panel when added to the Component page.

Smart Configurator    RX



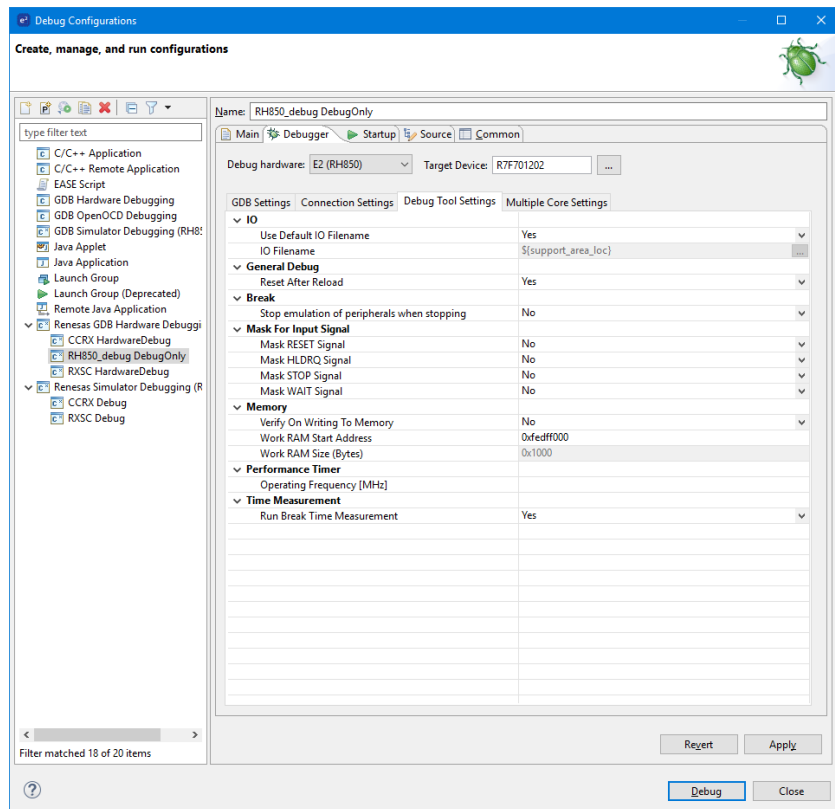
In IO Register view, description for bit will show according to its value if Smart Manual database was installed and description for the bit value was included.

IO Registers RX



With the new support for G4 core devices, the ID authentication setting items for G4 core devices have been added.

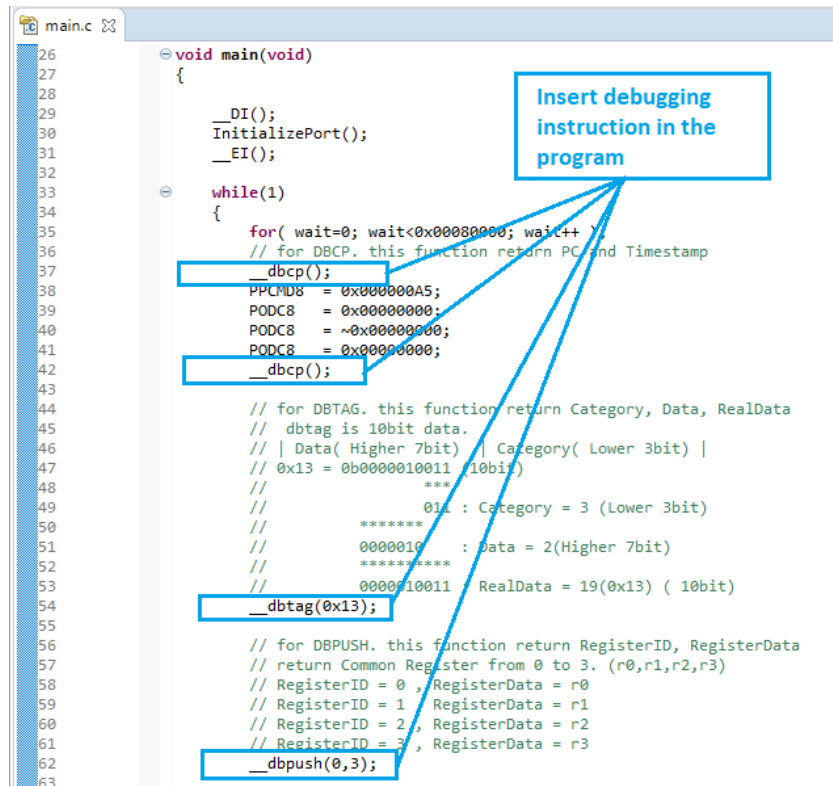
RH850 Debugging RH850



RH850 Debugging RH850 The Work RAM address specification item has been added as a debug option for the RH850.

RH850 Debugging RH850 Devices of the RH850 family with E2 emulator support debugging instructions (DBCP, DBTAG, DBPUSH) for the output of software trace data to LPD.

This function helps the user to embed debugging instructions in the program to be executed as checkpoints or for the purpose of the output of specific information or register values and output of the history execution to the emulator side as trace data.



```
main.c
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63

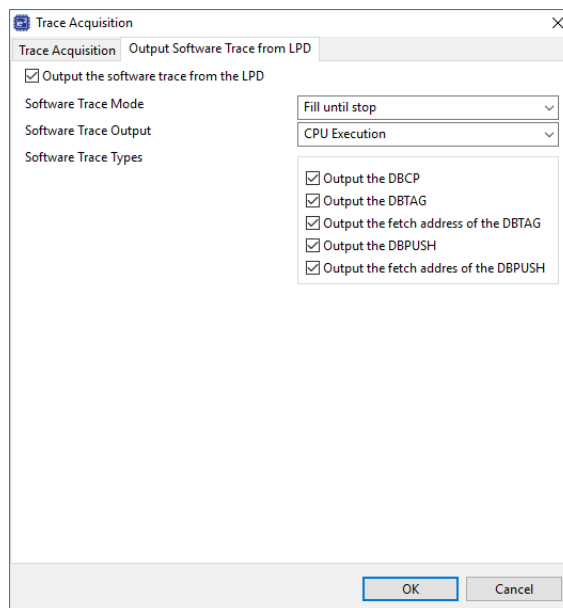
void main(void)
{
    __DI();
    InitializePort();
    __EI();

    while(1)
    {
        for( wait=0; wait<0x00080000; wait++ )
            // for DBCP. this function return PC and Timestamp
            __dbcp();
        PPCMD8 = 0x000000A5;
        PODC8 = 0x00000000;
        PODC8 = ~0x00000000;
        PODC8 = 0x00000000;
        __dbcp();

        // for DBTAG. this function return Category, Data, RealData
        // dbtag is 10bit data.
        // | Data( Higher 7bit) | Category( Lower 3bit) |
        // 0x13 = 0b000010011 (10bit)
        // ***
        //      011 : Category = 3 (Lower 3bit)
        // *****
        //      000010 : Data = 2(Higher 7bit)
        // *****
        //      000010011 RealData = 19(0x13) ( 10bit)
        __dbtag(0x13);

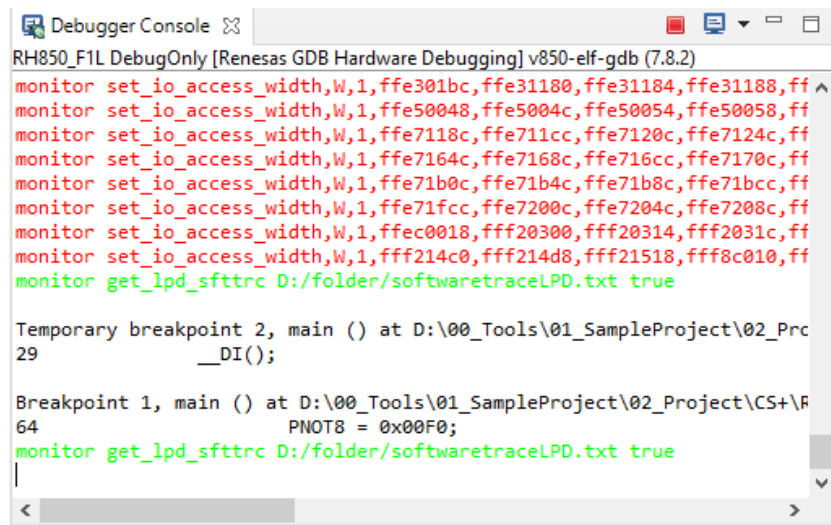
        // for DBPUSH. this function return RegisterID, RegisterData
        // return Common Register from 0 to 3. (r0,r1,r2,r3)
        // RegisterID = 0 , RegisterData = r0
        // RegisterID = 1 , RegisterData = r1
        // RegisterID = 2 , RegisterData = r2
        // RegisterID = 3 , RegisterData = r3
        __dbpush(0,3);
    }
}
```

The settings for software trace output to LPD can be selected on Acquisition dialog.



Use "get\_lpd\_sfttrc" monitor command on Debugger Console view to get software trace and output to Console view.

To output the software trace result to an external file, enter the file path in command. Enter "True" or "False" to append data to file or not.



```
Debugger Console [Renesas GDB Hardware Debugging] v850-elf-gdb (7.8.2)
RH850_F1L DebugOnly [Renesas GDB Hardware Debugging] v850-elf-gdb (7.8.2)
monitor set_io_access_width,W,1,ffe301bc,ffe31180,ffe31184,ffe31188,ff
monitor set_io_access_width,W,1,ffe50048,ffe5004c,ffe50054,ffe50058,ff
monitor set_io_access_width,W,1,ffe7118c,ffe711cc,ffe7120c,ffe7124c,ff
monitor set_io_access_width,W,1,ffe7164c,ffe7168c,ffe716cc,ffe7170c,ff
monitor set_io_access_width,W,1,ffe71b0c,ffe71b4c,ffe71b8c,ffe71bcc,ff
monitor set_io_access_width,W,1,ffe71fcc,ffe7200c,ffe7204c,ffe7208c,ff
monitor set_io_access_width,W,1,ffec0018,fff20300,fff20314,fff2031c,ff
monitor set_io_access_width,W,1,fff214c0,fff214d8,fff21518,fff8c010,ff
monitor get_lpd_sfttrc D:/folder/softwaretraceLPD.txt true

Temporary breakpoint 2, main () at D:\00_Tools\01_SampleProject\02_Prc
29      __DI();

Breakpoint 1, main () at D:\00_Tools\01_SampleProject\02_Project\CS+R
64      PNOT8 = 0x00F0;
monitor get_lpd_sfttrc D:/folder/softwaretraceLPD.txt true
|
```

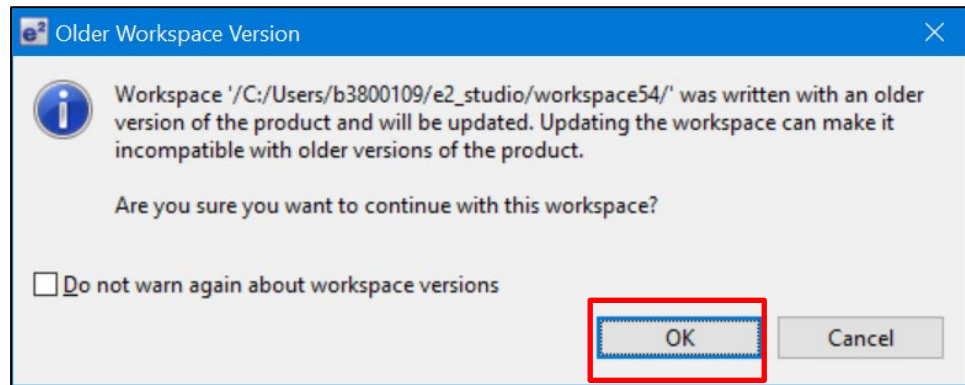
### 5. Useful workarounds and information for 2020-10

Please visit the Renesas FAQ for e<sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> studio.  If you need to use the SH device support, please use e <sup>2</sup> studio 5.4 or earlier.
	Importing old projects into 6.x	All projects being migrated into the latest e <sup>2</sup> studio from e <sup>2</sup> 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.

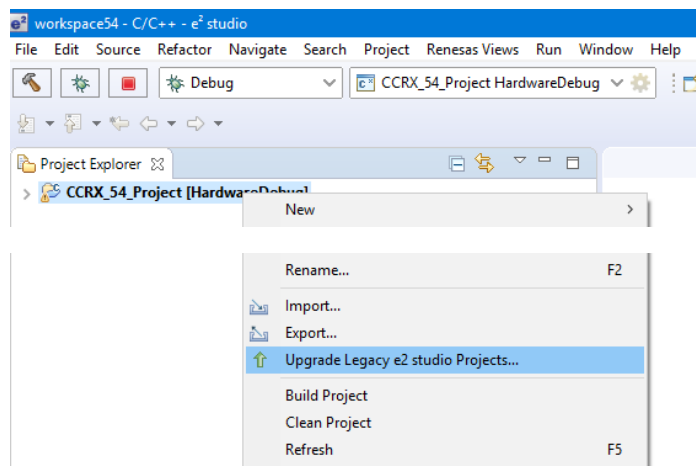
Upon opening an older workspace, the following dialog would be displayed:



Clicking OK will update the workspace to the newer e<sup>2</sup> studio.

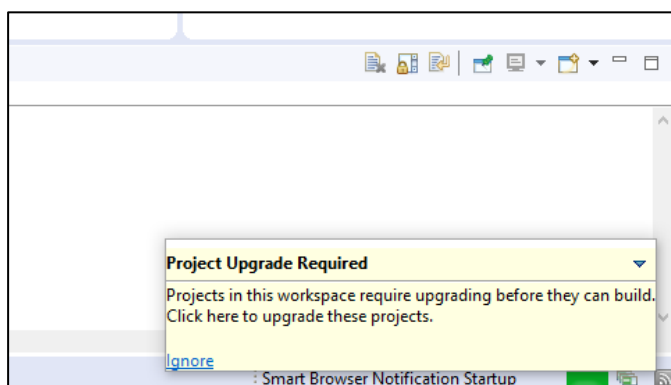
Importing an existing project to the workspace or opening a workspace with old projects will automatically start the legacy project upgrade procedure.

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.

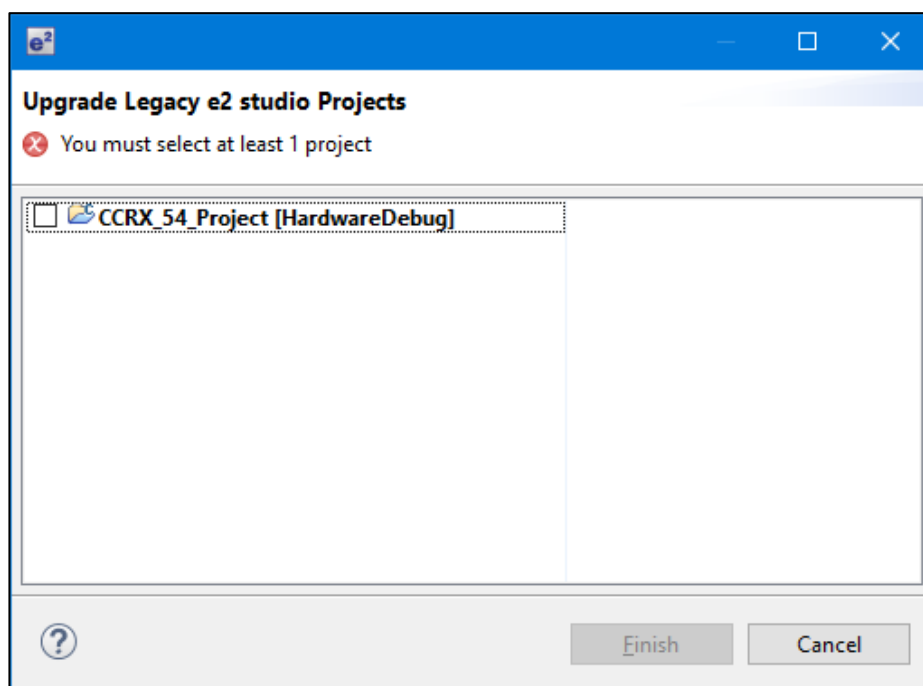




The automatic system pops up a message bubble in the bottom left of the e<sup>2</sup> studio application window.



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

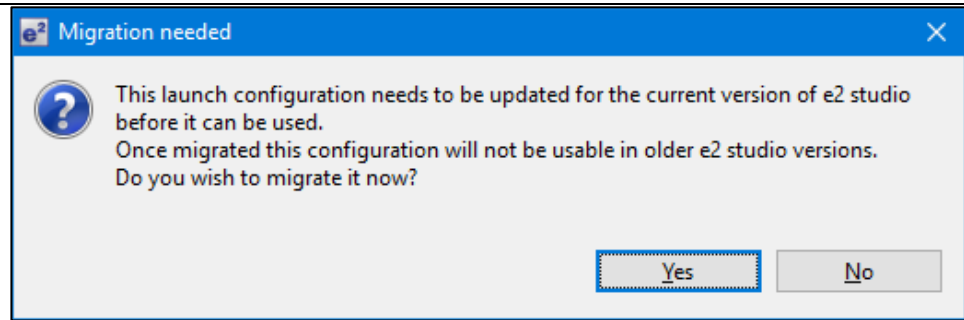


To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

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.



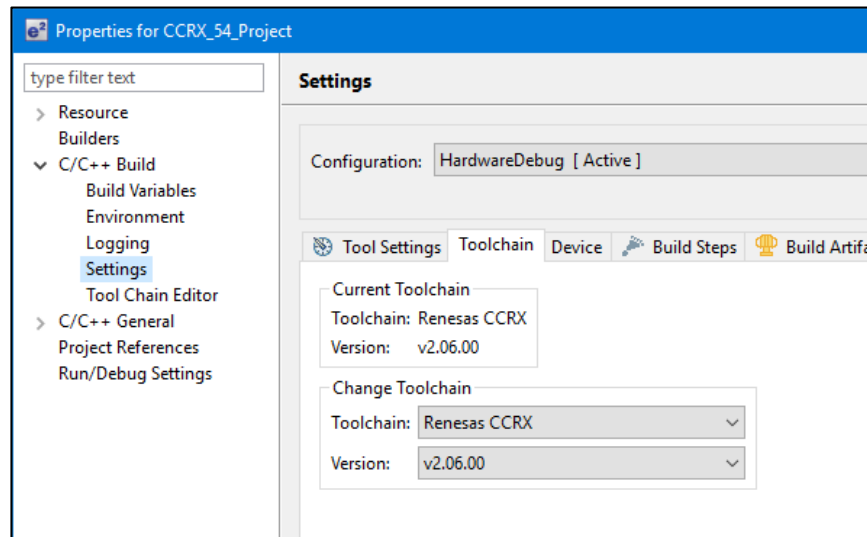
Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

**Toolchain Management**

Before e<sup>2</sup> 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 e<sup>2</sup> 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**

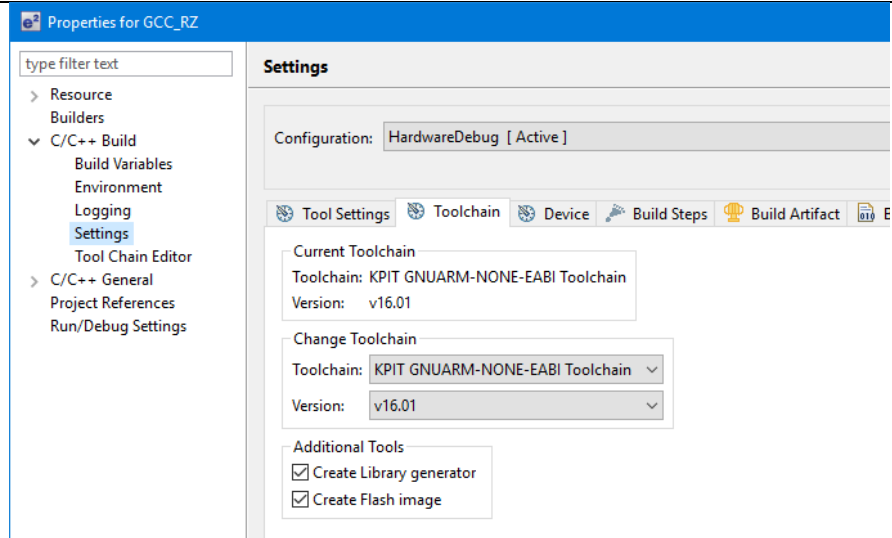
The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e<sup>2</sup> studio product but now using the gnuarmeclipse plugins.

In addition RZ within e<sup>2</sup> 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 e<sup>2</sup> studio installer or directly from here: <https://gcc-renesas.com/rz/rz-download-toolchains/>

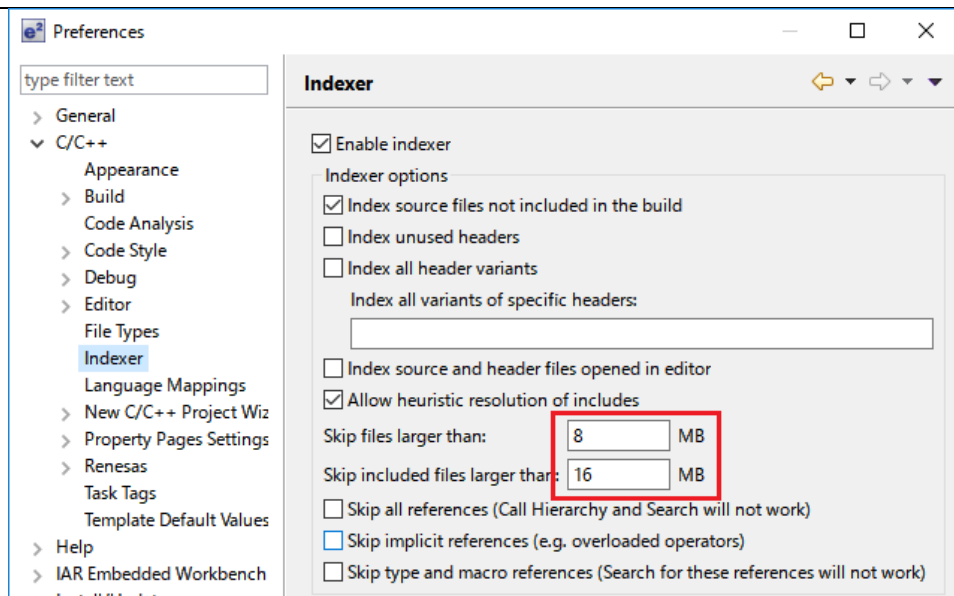
Once integrated it is possible to integrate the library generator from the toolchain tab of the build settings page.



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

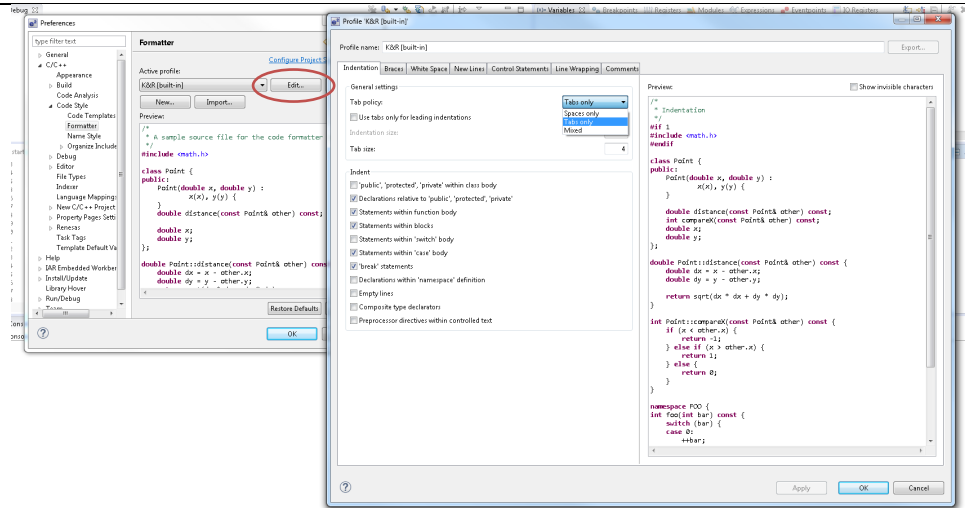
QE compatibility	If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1. Other QE series can be used with e <sup>2</sup> studio 6.0.
	<p>What is QE?  <a href="https://www.renesas.com/qe">https://www.renesas.com/qe</a></p> <p>Details of QE for TCP/IP  <a href="https://www.renesas.com/qe-tcpip">https://www.renesas.com/qe-tcpip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

		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 e<sup>2</sup> 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 <a href="http://www.gcc-renesas.com">www.gcc-renesas.com</a> 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 <a href="http://www.kpitgnutools.com">www.kpitgnutools.com</a> website. Support is now available from the <a href="http://www.gcc-renesas.com">www.gcc-renesas.com</a> 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 e<sup>2</sup> 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”-&gt;” Preferences” menu. In “C/C++” -&gt; “Indexer” tree, you will indexer configuration as shown below:</p>



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

2728	GDB	<p>Step into does not always work when using the CC-RX 1.02.01 toolchain.</p> <p>To ensure this behaves correctly you will need to use CC-RX 2.00.00 or greater as this issue with the debug information is corrected in this release.</p>
NA	Eventpoints	<p>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.</p>
5772	IAR Plugins	<p>The IAR Plugin Manager is included in e<sup>2</sup> studio and provides support for RX, RL78, RH850 and RZ (ARM).</p> <p>This tool simplifies installation and configuration of IAR toolchain plugins. You can access this through Help -&gt; IAR Embedded Workbench plugin manager.</p>
6184	RL78/CC-RL debugging	<p>When the load module for RL78/G10 which created at CC-RL is debugged in E1, please specify the following option:</p> <p>[Linker] -&gt; [Device] -&gt; "Set enable/disable on-chip debug by link option"</p>
7217	Application	<p>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.</p>
7524	RZ/T1 Debugging	<p>In a RZ/T1 RAM-based project, the "Reload" function does not work.</p> <p>Reloading or re-downloading during debugging resets the device and the RAM content is erased.</p> <p>To continue the debugging, disconnect and connect the debugger again.</p>
	Use spaces as tabs	<p>Eclipse and CDT both have settings for use spaces as tabs. The option on the Editor preferences page conflicts with the CDT formatter settings.</p> <p>To change the use spaces as tabs option in e<sup>2</sup> studio please use this page:</p>

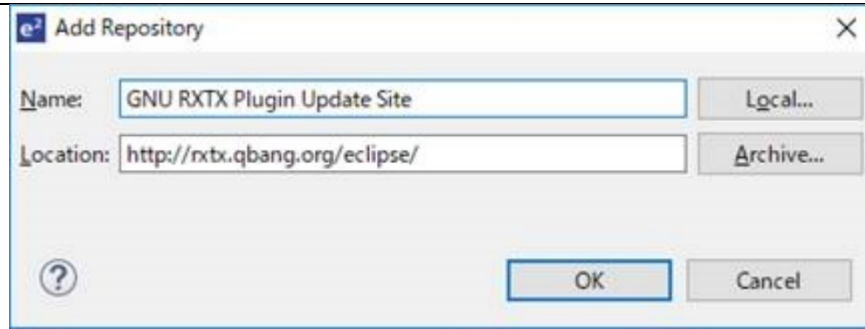


<p>Installer problems</p>	<p>In some situations, the AVG virus checker appears to interfere with the e<sup>2</sup> studio installation process. If you experience such a problem, please temporarily disable the AVG tool and try the installation again.</p>
<p>Antivirus</p>	<p>In some situations, the Norton 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.</p>
<p>Green Hills RH850 Projects</p>	<p>When debugging the RH850 object built with the Green Hills compiler in e<sup>2</sup> studio, specify the following option for the compiler option: -gtws</p> <p>The GUI setting menu is as follows. [GHS C Compiler for V800 Standalone]-[Debugging Option] "Generate Target-Walkable Stack" -&gt; On</p> <p>If this option is not specified, Step Over and Step Return may not work properly.</p>
<p>17052 Debugging</p>	<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>
<p>18505 RZ debugging</p>	<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"> <li>1. Code is located close to address 0x0</li> <li>2. There is very little library code included into the project</li> <li>3. There are unused functions in the program</li> </ol> <p>The possibility arises that the code cannot be debugged. This due to --gc-sections linker option which removes the unused functions but not the related debug information.</p> <p>There are several solutions to this problem:</p> <ol style="list-style-type: none"> <li>a. disable --gc-sections until those functions are used</li> <li>b. remove the unused functions</li> </ol>

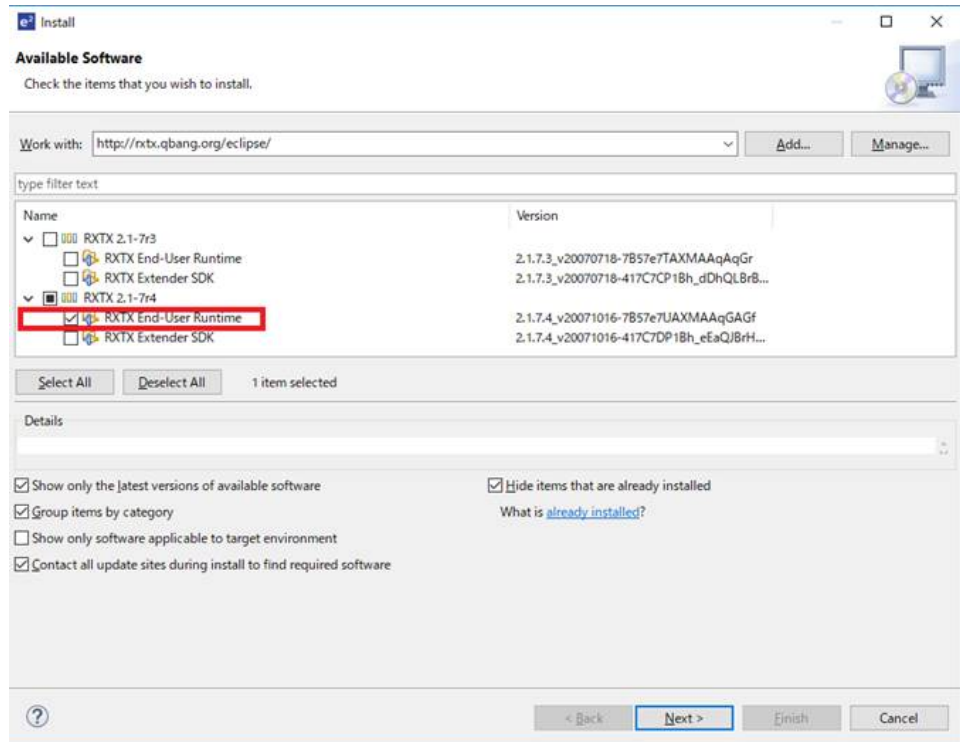
RZ GCC Build	<p>In the latest e<sup>2</sup> studio, the RZ import functionality has been improved. However, there are still possibilities of older projects causing problems when imported into e<sup>2</sup> studio.</p> <p>In older versions of the RZ build plugins the FPU option was not being handled correctly. 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 e<sup>2</sup> 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 e<sup>2</sup> 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 e<sup>2</sup> studio on your machine you may find that subsequent installations do not work correctly with the code generator.</p> <p>The effect is that the code generator cannot be created or added to projects. Existing projects can be used by the code generator views appear empty.</p> <p>If this is the case, then the code generator must be manually registered. To do this execute the following tool:</p> <p>e.g.</p> <pre>C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601-1047\CodeGenerator\Tools\register COM.bat</pre>	

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	<p>RZ / A2M project generated by e<sup>2</sup> studio does not support GCC ARM 7.x or later. Please use GCC ARM 6.3.</p>
27913	GDB server RL78	<p>When debugging with an EZ cube, real-time refresh significantly slows down debugging features and it makes e<sup>2</sup> studio look like suspended.</p>
12123	Linker Script Editor	<p>The Linker Script Editor may report errors when using some Wild Identifiers such as 1file.o and *filename.o..</p> <p>Although these are valid file names and valid identifiers according to the Linker Script syntax, they need to be quoted when using the Linker Script Editor. (e.g. "1file.o" and "*filename.o").</p>
	RZ/G Linux Platform Tools	<p>When using RZ/G Linux Platform Tools, gnu.io.rtxx plug-ins should be installed same as Nebula plug-ins.</p> <p>Please follow the below steps to install gnu.io.rtxx plug-ins.</p> <p>Start the e<sup>2</sup> studio and select [Help] -&gt; [Install New Software] from the menu bar to open the [Install] dialog box.</p> <p>Click on the [Add] button, enter "GNU RXTX Plugin Update Site" as a name and "<a href="http://rtx.qbang.org/eclipse/">http://rtx.qbang.org/eclipse/</a>" as a location, and click on the [OK] button.</p>





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



32564 MyRenasas Due to differences in the login data between 7.8 and the 2020-04 e<sup>2</sup> 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.

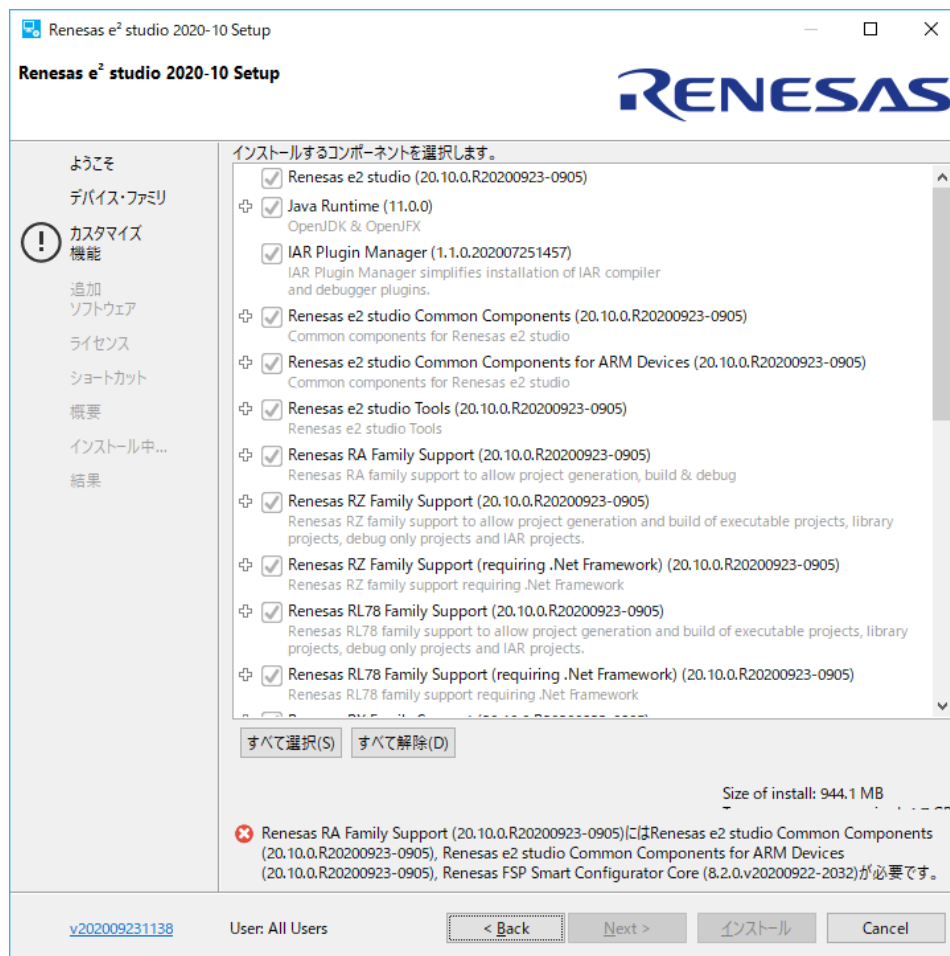
If you need to use MyRenasas in older versions of e<sup>2</sup> studio after logging in using 2020-04 then you will need to close all e<sup>2</sup> studio instances and delete the file "%USERPROFILE%\eclipse\org.eclipse.equinox.security\secure\_storage". Be aware that doing this will remove stored passwords for any Eclipse-based application.

32543 QE When updating e<sup>2</sup> 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.

30689 J-link It is now possible to configure J-Link to select a remote IP name or address. However currently the user interface does not support this feature.

It can be supported by adding extra commands in the debug configuration. Under the Jlink section in the Debug Connection settings you can select USB or

		<p>IP. If IP is selected, then you will need to specify an IP address/name and optionally a port number.</p> <p>GDB Server expects the command line parameter (examples):  -uSelect= IP=192.168.56.1:8080 -uSelect= IP=localhost:0 -uSelect= IP=jlink.segger.com</p>
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: -uBlankFlashFill=BB with the blank fill value being 0xBB. Specifying this value enables the feature, by default it is off.</p>
33914	RE	<p>Program does not step correctly for RE (SOTB) when library generator enabled.</p> <p>Selecting an ARM GCC toolchain that has libgen installed when creating a new project, will cause the program to go to the default handler when stepping, after returning from function on SOTB board. There are 2 workarounds for this:</p> <ol style="list-style-type: none"> <li>1. Use a toolchain that does not have libgen installed</li> <li>2. Choose the options: Project-built, Optimized for Library Generator when creating the project and change the selected options to Pre-built, Newlib after the project was created, by going to Settings-&gt;Library Generator.</li> </ol>
37443	RA (Linux)	CMSIS Pack Import feature does not work for RA on Linux
37531	RA	The quick link for RA project creation available on the File->New menu item has been removed. You can now access the RA Project Generator via the New->C/C++ Project menu item.
37261	All	In Memory view (Image View rendering), when user gives input images and decodes it with ARGB 8888 format. Output image color is not as same as input image.
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	<p>When upgrading an e<sup>2</sup> studio 2020-04 or 2020-07 containing RA Family support to 2020-10 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>



## 6. Linux version - How to install

Installation steps of public beta version e<sup>2</sup> studio for Linux

- A. Download archived file from download page. You can find the download page by visiting the e<sup>2</sup> studio product information web page ([https://www.renesas.com/e2\\_studio](https://www.renesas.com/e2_studio)) and then click the ‘Download the installer’ button. Once completed enter the text ‘e<sup>2</sup> studio 2020-04 for Linux, public beta edition’ in the search text box and press “Search”. Then you can select the download from the found items list.
- B. Extract the downloaded archived file (extension \*.7z) into local storage.
- C. Please ensure that the Linux distribution you are using also has Python3 installed.

### 6.1.1 Segger driver installation

To use the Segger J-Link tools with e<sup>2</sup> studio the required Segger drivers and toolset should also be installed.

For Ubuntu, download the 64-bit DEB version from the Segger website

- <https://www.segger.com/downloads/jlink/>

Follow the instructions from Segger or run:

```
sudo dpkg -i JLink_Linux_Vxxx_x86_64.deb
```

(replace filename with the file version of the deb package your just downloaded)

### 6.1.2 FSP installation

Install RA FSP packs as follows (depending on e<sup>2</sup> studio install folder and FSP pack):

```
cd /opt/e2studio
sudo unzip ~/Downloads/FSP_v1.0.0.zip
```

FSP needs to unzipped to the location as follows:

```
/home/<user>/.eclipse/com.renesas.platform_<version>
```

<user> is replaced by the user name.

<version> is replaced by the com.renesas.platform version.

## 6.2 How to run

- A. Run 'terminal' application of Linux.
- B. Move installed directory and Run 'e<sup>2</sup> studio' binary file.

## 6.3 Register toolchain to e<sup>2</sup> studio

### 6.3.1 GNU ARM Embedded

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

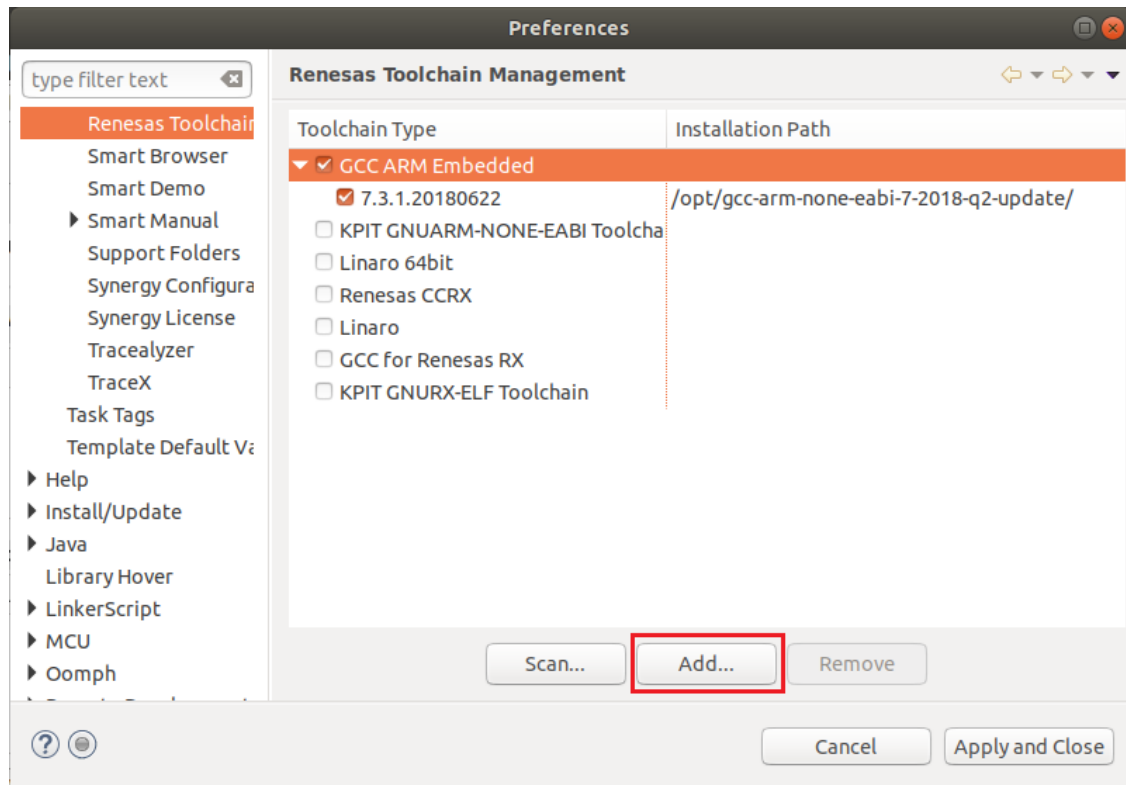
```
sudo mkdir -p /opt
```

```
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 e<sup>2</sup> studio:



### 6.3.2 Linaro

- A. Download and extract a toolchain package file to arbitrary directory.
- B. Run 'e<sup>2</sup> studio' and select 'Help – Add Renesas Toolchains'
- C. Select 'Toolchain Type' and 'Add' Location of toolchain.

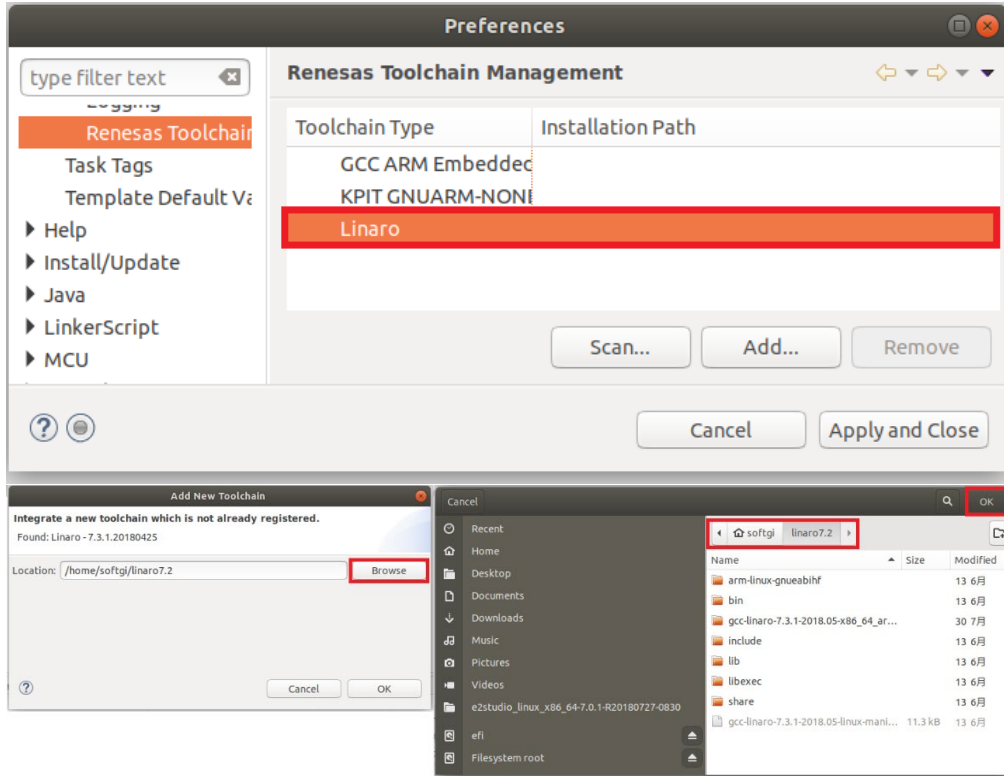


Figure 2. Register Toolchain: Browse toolchain location

- D. Click checkbox of added toolchain and restart e<sup>2</sup> studio.

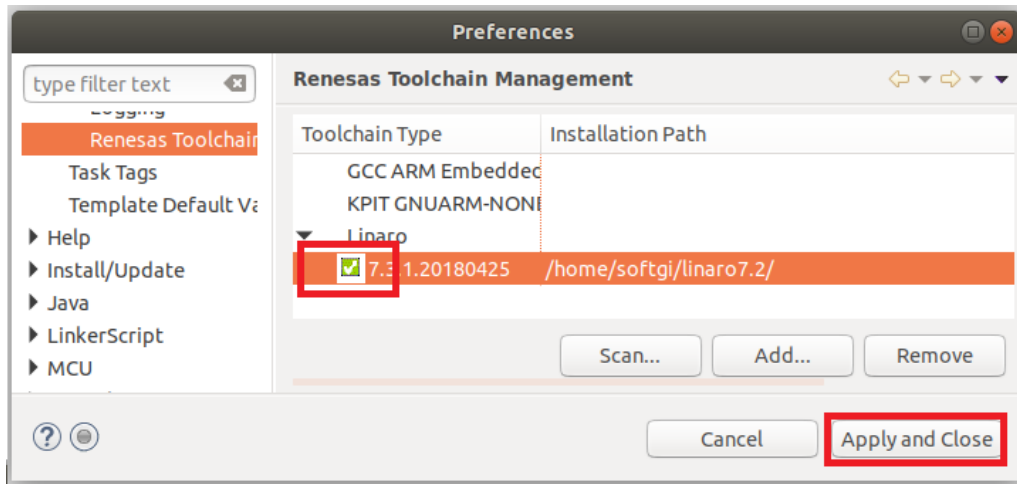


Figure 3. Register Toolchain: ex) Linaro

## 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 e<sup>2</sup> 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.

#### (1) 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

Public beta version e<sup>2</sup> 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)

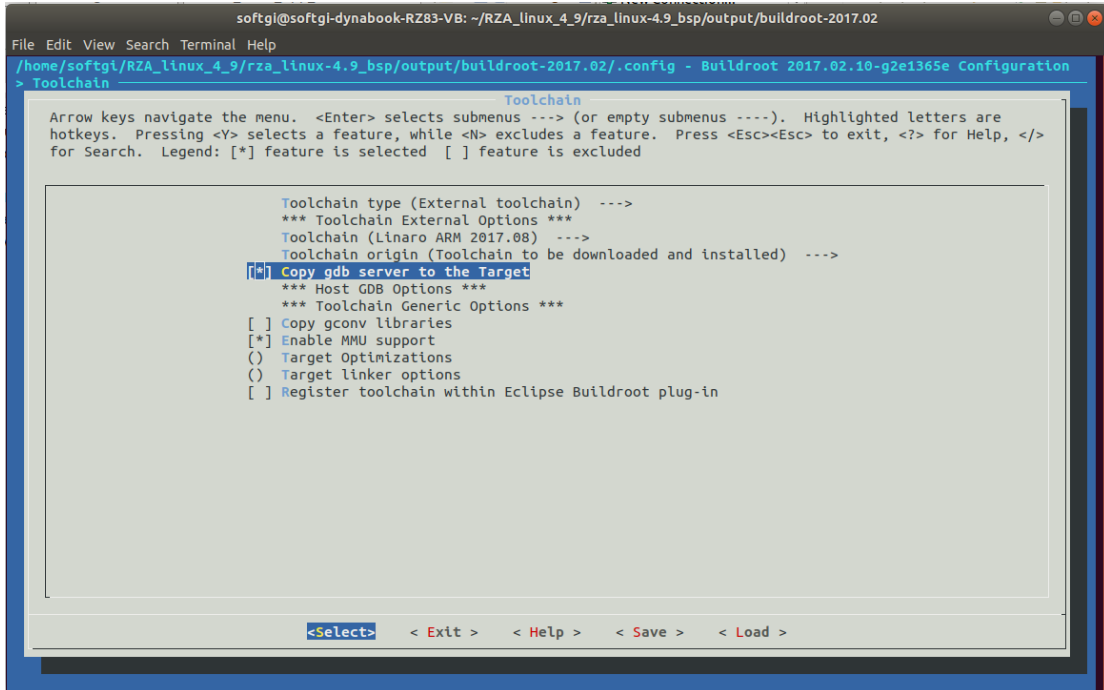


Figure 4. Menuconfig: set 'copy gdb server to the target'

- 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.

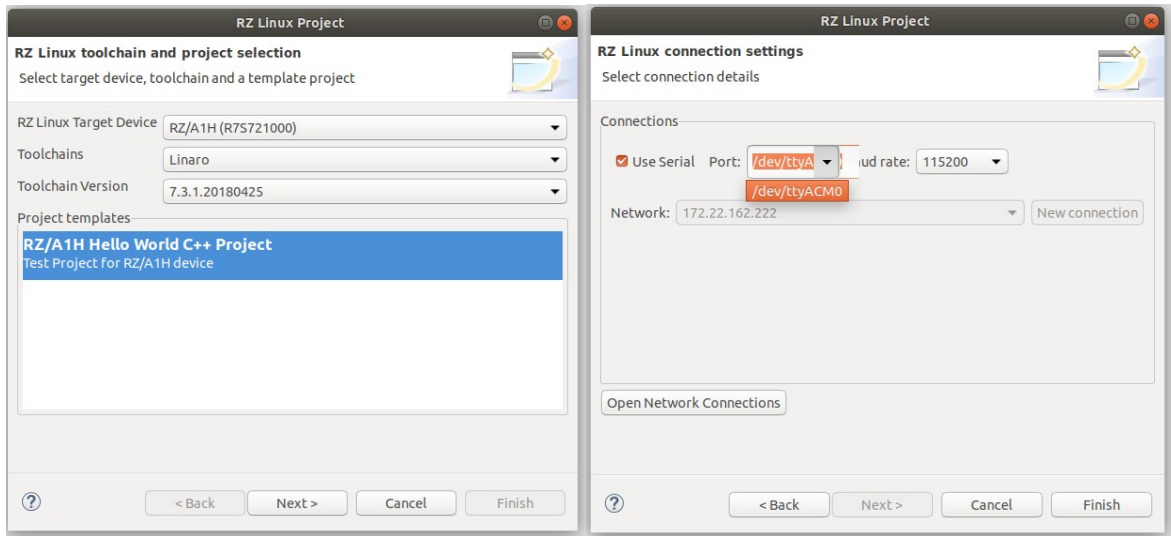


Figure 5. New RZ Linux project & connection setting: Serial port

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

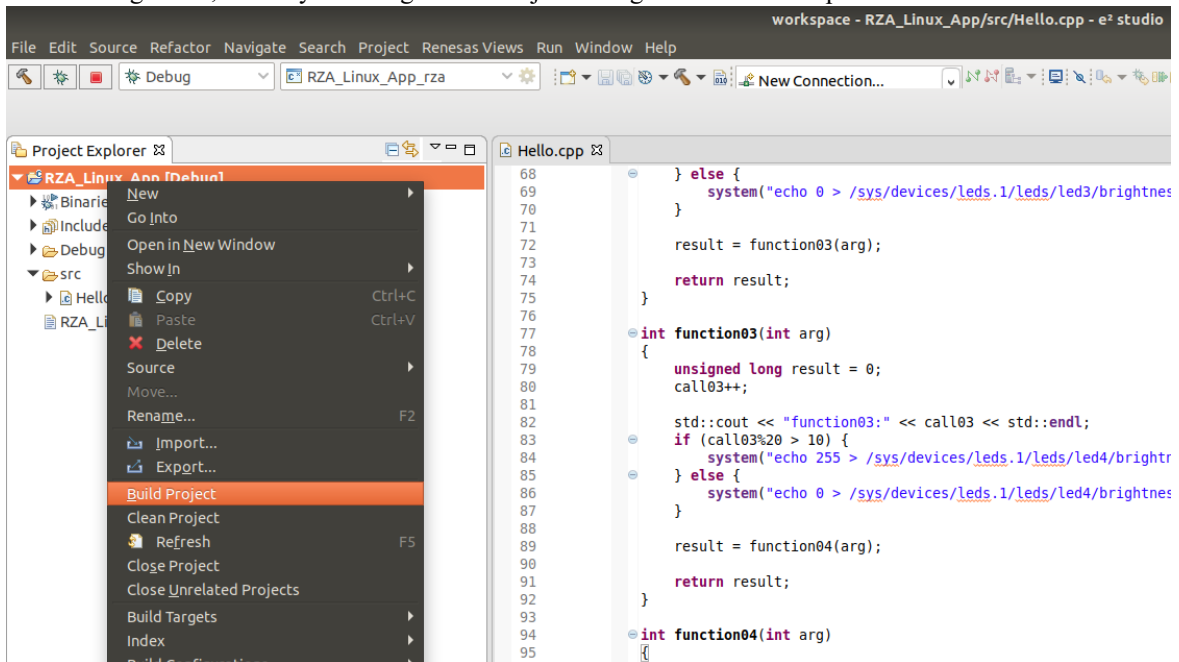


Figure 6. Build Project

### 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’.

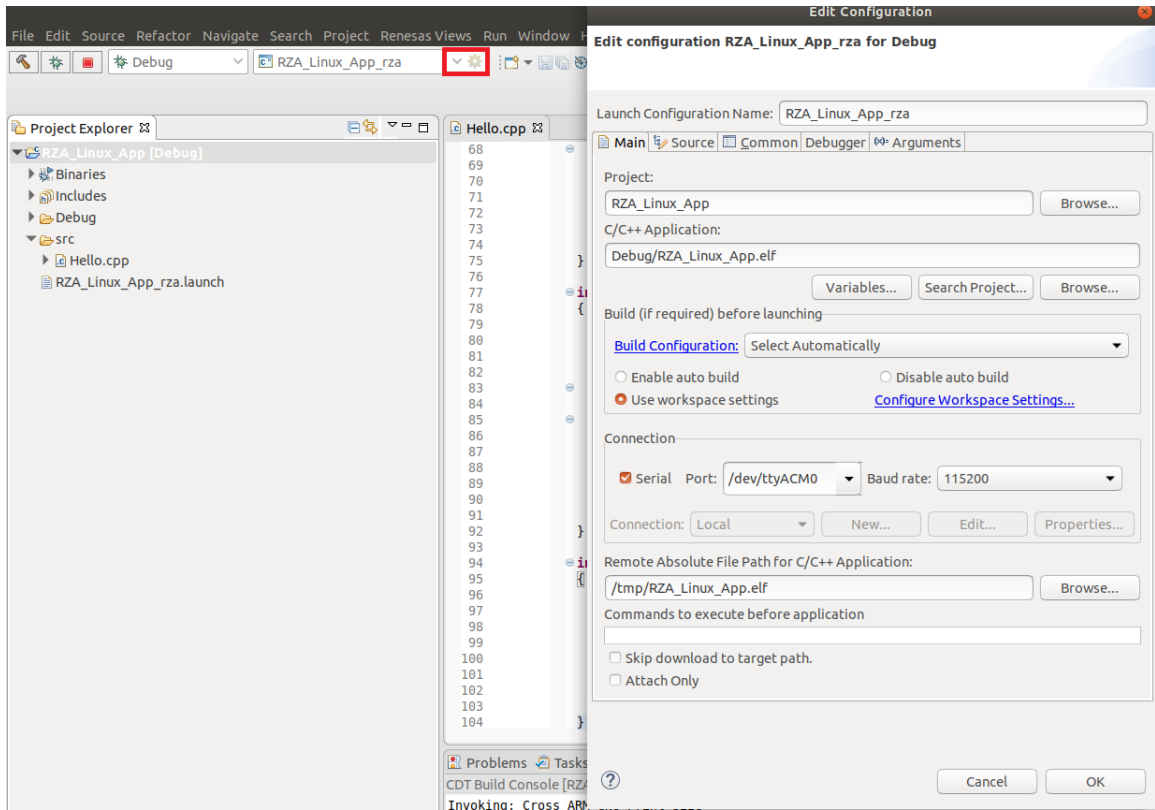



Figure 7. Connection configuration: Serial

- 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.

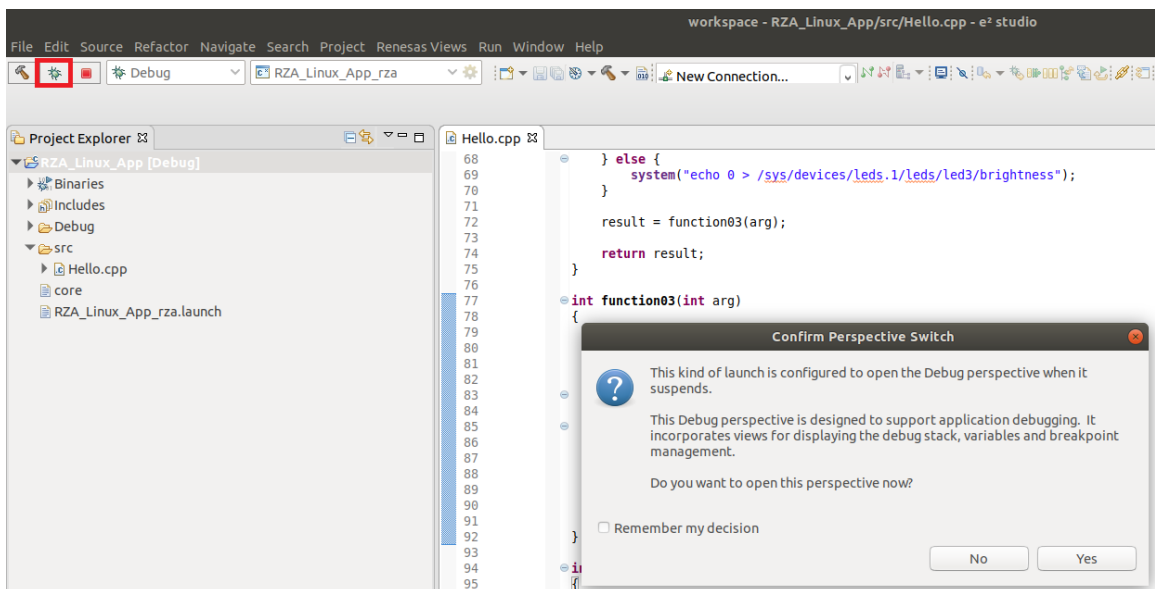


Figure 8. Debug: Perspective Switch

- D. 'Debug Perspective' provide ways for flow controls and configurations. This public beta version e<sup>2</sup> studio for Linux doesn't have console view for showing result of the program. (Under development) For more detail, please see user manuals of e<sup>2</sup> studio Windows edition.

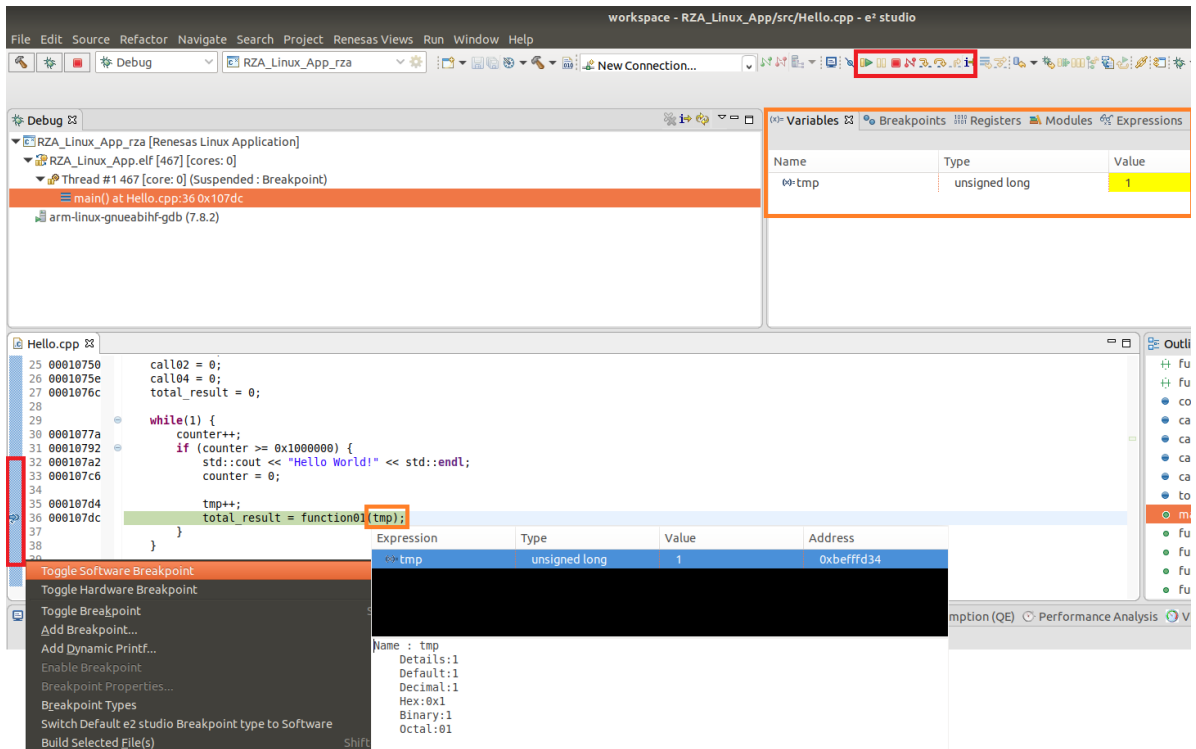


Figure 9. Debug: Control buttons, views, setting break point

## 7. Open Issues in 2020-10

Open issues in the e<sup>2</sup> studio 2020-10 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 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. 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.4.0-1 November 2017)

## Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,  
Koto-ku, Tokyo 135-0061, Japan  
[www.renesas.com](http://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/](http://www.renesas.com/contact/).