

# e<sup>2</sup> studio 7.7.0

R20UT4673EE0100

Rev.1.00

## Release Note

Jan. 20<sup>th</sup>, 2020

### Introduction

This document outlines the device support, new features added in 7.7.0, fixed issues and open issues in e<sup>2</sup> studio 7.7.0.

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## 1. Product Information

### 1.1 Supported Operating Systems

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

- Windows 8.1 32-bit
- Windows 8.1 64-bit
- Windows 10 32-bit
- Windows 10 64-bit

### 1.2 Supported Toolchains

The following toolchains are supported in e<sup>2</sup> studio 7.7.0.

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

**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: 8.2.1             |
| RA            | FSP 0.8: 8.3.1               |

\*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.

## 2. Device Support

### 2.1 Project Generator Support

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

| Family | Group       | Devices                                                                                                                                                                                                                                                                                                                                            |
|--------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EC-1   | EC-1        | R9A06G043                                                                                                                                                                                                                                                                                                                                          |
| RE     | RE01_1500KB | R7F0E010D2CFP, R7F0E011D2CFP, R7F0E014D2CFB, R7F0E015D2CFB, R7F0E016D2DBN, R7F0E017D2DBN                                                                                                                                                                                                                                                           |
| 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| RL78 | D1A   | R5F10CGB, R5F10CGC, R5F10CGD, R5F10CLD, R5F10CMD, R5F10CME, R5F10DGC, R5F10DGD, R5F10DGE, R5F10DLD, R5F10DLE, R5F10DMD, R5F10DME, R5F10DMF, R5F10DMG, R5F10DMJ, R5F10DPE, R5F10DPF, R5F10DPG, R5F10DPJ, R5F10DPK, R5F10DPL, R5F10DSJ, R5F10DSK, R5F10DSL, R5F10TPJ                                                                                                                                                                                                                                                                                                                                                                                                                          |
|      | F12   | R5F10968, R5F1096A, R5F1096B, R5F1096C, R5F1096D, R5F1096E, R5F109AA, R5F109AB, R5F109AC, R5F109AD, R5F109AE, R5F109BA, R5F109BB, R5F109BC, R5F109BD, R5F109BE, R5F109GA, R5F109GB, R5F109GC, R5F109GD, R5F109GE, R5F109LA, R5F109LB, R5F109LC, R5F109LD, R5F109LE                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| 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                                                                                                                                                                                                                                       |

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| G13 | R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C,<br>R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E,<br>R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100AF, R5F100AG,<br>R5F100BA, R5F100BC, R5F100BD, R5F100BE, R5F100BF, R5F100BG,<br>R5F100CA, R5F100CC, R5F100CD, R5F100CE, R5F100CF, R5F100CG,<br>R5F100EA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG,<br>R5F100EH, R5F100FA, R5F100FC, R5F100FD, R5F100FE, R5F100FF,<br>R5F100FG, R5F100FH, R5F100FJ, R5F100FK, R5F100FL, R5F100GA,<br>R5F100GC, R5F100GD, R5F100GE, R5F100GF, R5F100GG, R5F100GH,<br>R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE,<br>R5F100JF, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL,<br>R5F100LC, R5F100LD, R5F100LE, R5F100LF, R5F100LG, R5F100LH,<br>R5F100LJ, R5F100LK, R5F100LL, R5F100MF, R5F100MG, R5F100MH,<br>R5F100MJ, R5F100MK, R5F100ML, R5F100PF, R5F100PG, R5F100PH,<br>R5F100PJ, R5F100PK, R5F100PL, R5F100SH, R5F100SJ, R5F100SK,<br>R5F100SL, R5F1016A, R5F1016C, R5F1016D, R5F1016E, R5F1017A,<br>R5F1017C, R5F1017D, R5F1017E, R5F1018A, R5F1018C, R5F1018D,<br>R5F1018E, R5F101AA, R5F101AC, R5F101AD, R5F101AE, R5F101AF,<br>R5F101AG, R5F101BA, R5F101BC, R5F101BD, R5F101BE, R5F101BF,<br>R5F101BG, R5F101CA, R5F101CC, R5F101CD, R5F101CE, R5F101CF,<br>R5F101CG, R5F101EA, R5F101EC, R5F101ED, R5F101EE, R5F101EF,<br>R5F101EG, R5F101EH, R5F101FA, R5F101FC, R5F101FD, R5F101FE,<br>R5F101FF, R5F101FG, R5F101FH, R5F101FJ, R5F101FK, R5F101FL,<br>R5F101GA, R5F101GC, R5F101GD, R5F101GE, R5F101GF, R5F101GG,<br>R5F101GH, R5F101GJ, R5F101GK, R5F101GL, R5F101JC, R5F101JD,<br>R5F101JE, R5F101JF, R5F101JG, R5F101JH, R5F101JJ, R5F101JK,<br>R5F101JL, R5F101LC, R5F101LD, R5F101LE, R5F101LF, R5F101LG,<br>R5F101LH, R5F101LJ, R5F101LK, R5F101LL, R5F101MF, R5F101MG,<br>R5F101MH, R5F101MJ, R5F101MK, R5F101ML, R5F101PF, R5F101PG,<br>R5F101PH, R5F101PJ, R5F101PK, R5F101PL, R5F101SH, R5F101SJ,<br>R5F101SK, R5F101SL |
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| G13A | R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL,<br>R5F140PK, R5F140PL |
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| G14 | R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG,<br>R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG,<br>R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG,<br>R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG,<br>R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF,<br>R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD,<br>R5F104GE, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK,<br>R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG,<br>R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF,<br>R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF,<br>R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF,<br>R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL |
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| G1A | R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10E8A, R5F10E8C,<br>R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE,<br>R5F10ELC, R5F10ELD, R5F10ELE |
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|----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | 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                                                                                                                                                                                                                                                                                         |
|    | 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, R5F11TLE, R5F11TLG                                                                                                                                                                                                                   |
|    | I1D | R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC                                                                                                                                                                                               |
|    | I1E | R5F11CBC, R5F11CCC                                                                                                                                                                                                                                                                                         |
|    | L12 | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC                                                                                                                                                                 |
|    | L13 | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG                                                                                                                                                                                     |
|    | L1A | R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG                                                                                                                                                                                                                                                 |
|    | L1C | R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110NE, R5F110NF, R5F110NG, R5F110NH, R5F110NJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111NE, R5F111NF, R5F111NG, R5F111NH, R5F111NJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ |
| RX | 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J                                                                                                                                                                                                                                                 |
|    | 111 | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J                                                                                                                                                                                                                             |
|    | 113 | R5F51135, R5F51136, R5F51137, R5F51138                                                                                                                                                                                                                                                                     |
|    | 130 | R5F51303, R5F51305, R5F51305B, R5F51306, R5F51306B, R5F51307, R5F51308                                                                                                                                                                                                                                     |
|    | 13T | R5F513T3, R5F513T5                                                                                                                                                                                                                                                                                         |
|    | 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, R5F523E6A                                                                                                                                                                           |
| 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<br><br>R5F56519DMB, R5F5651EDMB, R5F5651EDMB_DUAL,(Debug Support Only)                                          |
| 65N   | R5F565N4, R5F565N7, R5F565N9, R5F565NC, R5F565NC_DUAL, R5F565NE, R5F565NE_DUAL<br><br>R5F565N9DMB, R5F565NEDMB, R5F565NEDMB_DUAL,(Debug Support Only)                                          |
| -     | R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL                                                                                                                                               |
| 66T   | R5F566TA, R5F566TE, R5F566TF, R5F566TK                                                                                                                                                         |
| 71M   | R5F571MF, R5F571MG, R5F571MJ, R5F571ML                                                                                                                                                         |
| 72M   | R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL                                                                                                                                               |
| -     | R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL                                                                                                                                               |
| 72T   | R5F572TF, R5F572TK                                                                                                                                                                             |

|         |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                                                                                                                                                                       |
|         | G1C  | R8A77470                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         | G1E  | R8A77450                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         |      | R8A77450_Core1,(Debug Support Only)                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         | G1H  | R8A77420                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         | G1M  | R8A77430                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         |      | R8A77430_Core1,(Debug Support Only)                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         | G1N  | R8A77440                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         | G2D  | R8A774D                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | G2E  | R8A774C                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | G2H  | R8A7748                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | G2M  | R8A774A                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | G2N  | R8A774B                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | 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 |
| Synergy | S1JA | R7FS1JA783A01CFM, R7FS1JA783A01CNE, R7FS1JA783A01CNF, R7FS1JA782A01CBT, R7FS1JA783A01CFJ                                                                                                                                                                                                                                                                                                                                                                                       |
|         | S124 | R7FS124762A01CLM, R7FS124763A01CFL, R7FS124763A01CFM, R7FS124772A01CLM, R7FS124773A01CFL, R7FS124773A01CFM, R7FS124773A01CNB, R7FS124773A01CNE, R7FS124773A01CNF                                                                                                                                                                                                                                                                                                               |

|    |       |                                                                                                                                                                                                                                          |
|----|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | S128  | R7FS128782A01CLM, R7FS128783A01CFJ, R7FS128783A01CFL, R7FS128783A01CFM, R7FS128783A01CNE, R7FS128783A01CNG                                                                                                                               |
|    | S3A1  | R7FS3A17C2A01CLK, R7FS3A17C3A01CFB, R7FS3A17C2A01CBJ, R7FS3A17C2A01CLJ, R7FS3A17C3A01CFM, R7FS3A17C3A01CFP, R7FS3A17C3A01CNB                                                                                                             |
|    | S3A3  | R7FS3A37A2A01CLK, R7FS3A37A3A01CFB, R7FS3A37A2A01CBJ, R7FS3A37A2A01CLJ, R7FS3A37A3A01CFP, R7FS3A37A3A01CFM, R7FS3A37A3A01CNB                                                                                                             |
|    | S3A6  | R7FS3A6782A01CLJ, R7FS3A6783A01CFL, R7FS3A6783A01CFM, R7FS3A6783A01CFP, R7FS3A6783A01CNB, R7FS3A6783A01CNE, R7FS3A6783A01CNF                                                                                                             |
|    | S3A7  | R7FS3A77C2A01CLK, R7FS3A77C3A01CFB, R7FS3A77C2A01CBJ, R7FS3A77C3A01CFP, R7FS3A77C2A01CLJ, R7FS3A77C3A01CFM, R7FS3A77C2A01CNB, R7FS3A77C3A01CNB                                                                                           |
|    | S5D3  | R7FS5D37A2A01CLJ, R7FS5D37A3A01CFP, R7FS5D37A3A01CFM, R7FS5D37A3A01CNB                                                                                                                                                                   |
|    | S5D5  | R7FS5D57A2A01CLK, R7FS5D57A3A01CFB, R7FS5D57A3A01CFP, R7FS5D57C2A01CLK, R7FS5D57C3A01CFB, R7FS5D57C3A01CFP                                                                                                                               |
|    | S5D9  | R7FS5D97C2A01CBG, R7FS5D97C3A01CFC, R7FS5D97C2A01CLK, R7FS5D97C3A01CFB, R7FS5D97C3A01CFP, R7FS5D97E2A01CBG, R7FS5D97E3A01CFC, R7FS5D97E2A01CLK, R7FS5D97E3A01CFB, R7FS5D97E3A01CFP                                                       |
|    | S7G2  | R7FS7G27H2A01CBD, R7FS7G27G2A01CBD, R7FS7G27H2A01CBG, R7FS7G27G2A01CBG, R7FS7G27H2A01CFC, R7FS7G27H3A01CFC, R7FS7G27G2A01CFC, R7FS7G27G3A01CFC, R7FS7G27H2A01CLK, R7FS7G27G2A01CLK, R7FS7G27H3A01CFB, R7FS7G27G3A01CFB, R7FS7G27G3A01CFP |
| RA | 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                                                                                     |

## 2.2 Code Generator Support

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

R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C,  
 R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E,  
 R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100AF, R5F100AG,  
 R5F100BA, R5F100BC, R5F100BD, R5F100BE, R5F100BF, R5F100BG,  
 R5F100CA, R5F100CC, R5F100CD, R5F100CE, R5F100CF, R5F100CG,  
 R5F100EA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG,  
 R5F100EH, R5F100FA, R5F100FC, R5F100FD, R5F100FE, R5F100FF,  
 R5F100FG, R5F100FH, R5F100FJ, R5F100FK, R5F100FL, R5F100GA,  
 R5F100GC, R5F100GD, R5F100GE, R5F100GF, R5F100GG, R5F100GH,  
 R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE,  
 R5F100JF, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL, R5F100LC,  
 R5F100LD, R5F100LE, R5F100LF, R5F100LG, R5F100LH, R5F100LJ,  
 R5F100LK, R5F100LL, R5F100MF, R5F100MG, R5F100MH, R5F100MJ,  
 R5F100MK, R5F100ML, R5F100PF, R5F100PG, R5F100PH, R5F100PJ,  
 R5F100PK, R5F100PL, R5F100SH, R5F100SJ, R5F100SK, R5F100SL,  
 R5F1016A, R5F1016C, R5F1016D, R5F1016E, R5F1017A, R5F1017C,  
 R5F1017D, R5F1017E, R5F1018A, R5F1018C, R5F1018D, R5F1018E,  
 R5F101AA, R5F101AC, R5F101AD, R5F101AE, R5F101AF, R5F101AG,  
 R5F101BA, R5F101BC, R5F101BD, R5F101BE, R5F101BF, R5F101BG,  
 R5F101CA, R5F101CC, R5F101CD, R5F101CE, R5F101CF, R5F101CG,  
 R5F101EA, R5F101EC, R5F101ED, R5F101EE, R5F101EF, R5F101EG,  
 R5F101EH, R5F101FA, R5F101FC, R5F101FD, R5F101FE, R5F101FF,  
 R5F101FG, R5F101FH, R5F101FJ, R5F101FK, R5F101FL, R5F101GA,  
 R5F101GC, R5F101GD, R5F101GE, R5F101GF, R5F101GG, R5F101GH,  
 R5F101GJ, R5F101GK, R5F101GL, R5F101JC, R5F101JD, R5F101JE,  
 R5F101JF, R5F101JG, R5F101JH, R5F101JJ, R5F101JK, R5F101JL, R5F101LC,  
 R5F101LD, R5F101LE, R5F101LF, R5F101LG, R5F101LH, R5F101LJ,  
 R5F101LK, R5F101LL, R5F101MF, R5F101MG, R5F101MH, R5F101MJ,  
 R5F101MK, R5F101ML, R5F101PF, R5F101PG, R5F101PH, R5F101PJ,  
 R5F101PK, R5F101PL, R5F101SH, R5F101SJ, R5F101SK, R5F101SL

G13

R5F140FK, R5F140FL, R5F140GK, R5F140GL, R5F140LK, R5F140LL,  
 R5F140PK, R5F140PL

G13A

R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG,  
 R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG,  
 R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG,  
 R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG,  
 R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF,  
 R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD,  
 R5F104GE, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK,  
 R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG,  
 R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF,  
 R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF,  
 R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF,  
 R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL

G14

R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10EBA, R5F10EBC,  
 R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE,  
 R5F10ELC, R5F10ELD, R5F10ELE

G1A

R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC

G1C

R5F11AGG, R5F11AGH, R5F11AGJ

G1D

R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME

G1E

|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |     | R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE                                                                                                                                                                                                                                                             |
|    | G1F |                                                                                                                                                                                                                                                                                                                                                                |
|    | 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, R5F11TLE, R5F11TLG                                                                                                                                                                                                                                                                                 |
|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|    | I1D | R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC                                                                                                                                                                                                                                                   |
|    | I1E | R5F11CBC, R5F11CCC                                                                                                                                                                                                                                                                                                                                             |
|    |     | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC                                                                                                                                                                                                                     |
|    | L12 |                                                                                                                                                                                                                                                                                                                                                                |
|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|    | L13 | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG                                                                                                                                                                                                                                         |
|    | L1A | R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG                                                                                                                                                                                                                                                                                                     |
|    |     | R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ                                                                                                                                                         |
|    | L1C |                                                                                                                                                                                                                                                                                                                                                                |
|    | 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J                                                                                                                                                                                                                                                                                                     |
|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|    | 111 | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J                                                                                                                                                                                                                                                                                 |
|    | 113 | R5F51135, R5F51136, R5F51137, R5F51138                                                                                                                                                                                                                                                                                                                         |
|    | 130 | R5F51303, R5F51305                                                                                                                                                                                                                                                                                                                                             |
|    | 230 | R5F52305, R5F52306                                                                                                                                                                                                                                                                                                                                             |
|    | 231 | R5F52315, R5F52316, R5F52317, R5F52318                                                                                                                                                                                                                                                                                                                         |
|    | 23T | R5F523T3, R5F523T5                                                                                                                                                                                                                                                                                                                                             |
|    | 24T | R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE                                                                                                                                                                                                                                                                                                               |
|    | 24U | R5F524UB, R5F524UC, R5F524UE                                                                                                                                                                                                                                                                                                                                   |
|    | 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML                                                                                                                                                                                                                                                                                                                         |
|    | 651 | R5F56514, R5F56517, R5F56519                                                                                                                                                                                                                                                                                                                                   |
|    | 65N | R5F565N4, R5F565N7, R5F565N9                                                                                                                                                                                                                                                                                                                                   |
| RX | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML                                                                                                                                                                                                                                                                                                                         |
|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|    |     | 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 |
| RZ | T1  |                                                                                                                                                                                                                                                                                                                                                                |

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

G13 R5F1006A, R5F1006C, R5F1006D, R5F1006E, R5F1007A, R5F1007C, R5F1007D, R5F1007E, R5F1008A, R5F1008C, R5F1008D, R5F1008E, R5F100AA, R5F100AC, R5F100AD, R5F100AE, R5F100AF, R5F100AG, R5F100BA, R5F100BC, R5F100BD, R5F100BE, R5F100BF, R5F100BG, R5F100CA, R5F100CC, R5F100CD, R5F100CE, R5F100CF, R5F100CG, R5F100EA, R5F100EC, R5F100ED, R5F100EE, R5F100EF, R5F100EG, R5F100EH, R5F100FA, R5F100FC, R5F100FD, R5F100FE, R5F100FF, R5F100FG, R5F100FH, R5F100FJ, R5F100FK, R5F100FL, R5F100GA, R5F100GC, R5F100GD, R5F100GE, R5F100GF, R5F100GG, R5F100GH, R5F100GJ, R5F100GK, R5F100GL, R5F100JC, R5F100JD, R5F100JE, R5F100JF, R5F100JG, R5F100JH, R5F100JJ, R5F100JK, R5F100JL, R5F100LC, R5F100LD, R5F100LE, R5F100LF, R5F100LG, R5F100LH, R5F100LJ, R5F100LK, R5F100LL, R5F100MF, R5F100MG, R5F100MH, R5F100MJ, R5F100MK, R5F100ML, R5F100PF, R5F100PG, R5F100PH, R5F100PJ, R5F100PK, R5F100PL, R5F100SH, R5F100SJ, R5F100SK, R5F100SL, R5F1016A, R5F1016C, R5F1016D, R5F1016E, R5F1017A, R5F1017C, R5F1017D, R5F1017E, R5F1018A, R5F1018C, R5F1018D, R5F1018E, R5F101AA, R5F101AC, R5F101AD, R5F101AE, R5F101AF, R5F101AG, R5F101BA, R5F101BC, R5F101BD, R5F101BE, R5F101BF, R5F101BG, R5F101CA, R5F101CC, R5F101CD, R5F101CE, R5F101CF, R5F101CG, R5F101EA, R5F101EC, R5F101ED, R5F101EE, R5F101EF, R5F101EG, R5F101EH, R5F101FA, R5F101FC, R5F101FD, R5F101FE, R5F101FF, R5F101FG, R5F101FH, R5F101FJ, R5F101FK, R5F101FL, R5F101GA, R5F101GC, R5F101GD, R5F101GE, R5F101GF, R5F101GG, R5F101GH, R5F101GJ, R5F101GK, R5F101GL, R5F101JC, R5F101JD, R5F101JE, R5F101JF, R5F101JG, R5F101JH, R5F101JJ, R5F101JK, R5F101JL, R5F101LC, R5F101LD, R5F101LE, R5F101LF, R5F101LG, R5F101LH, R5F101LJ, R5F101LK, R5F101LL, R5F101MF, R5F101MG, R5F101MH, R5F101MJ, R5F101MK, R5F101ML, R5F101PF, R5F101PG, R5F101PH, R5F101PJ, R5F101PK, R5F101PL, R5F101SH, R5F101SJ, R5F101SK, R5F101SL

G14 R5F104AA, R5F104AC, R5F104AD, R5F104AE, R5F104AF, R5F104AG, R5F104BA, R5F104BC, R5F104BD, R5F104BE, R5F104BF, R5F104BG, R5F104CA, R5F104CC, R5F104CD, R5F104CE, R5F104CF, R5F104CG, R5F104EA, R5F104EC, R5F104ED, R5F104EE, R5F104EF, R5F104EG, R5F104EH, R5F104FA, R5F104FC, R5F104FD, R5F104FE, R5F104FF, R5F104FG, R5F104FH, R5F104FJ, R5F104GA, R5F104GC, R5F104GD, R5F104GE, R5F104GF, R5F104GG, R5F104GH, R5F104GJ, R5F104GK, R5F104GL, R5F104JC, R5F104JD, R5F104JE, R5F104JF, R5F104JG, R5F104JH, R5F104JJ, R5F104LC, R5F104LD, R5F104LE, R5F104LF, R5F104LG, R5F104LH, R5F104LJ, R5F104LK, R5F104LL, R5F104MF, R5F104MG, R5F104MH, R5F104MJ, R5F104MK, R5F104ML, R5F104PF, R5F104PG, R5F104PH, R5F104PJ, R5F104PK, R5F104PL

G1A R5F10E8A, R5F10E8C, R5F10E8D, R5F10E8E, R5F10EBA, R5F10EBC, R5F10EBD, R5F10EBE, R5F10EGA, R5F10EGC, R5F10EGD, R5F10EGE, R5F10ELC, R5F10ELD, R5F10ELE

G1C R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC

G1D R5F11AGG, R5F11AGH, R5F11AGJ

G1E R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME

G1F R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE

|    |     |                                                                                                                                                                                                                                                                                                                                                                |
|----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | G1G | R5F11EA8, R5F11EAA, R5F11EB8, R5F11EBA, R5F11EF8, R5F11EFA                                                                                                                                                                                                                                                                                                     |
|    | G1H | R5F11FLJ, R5F11FLK, R5F11FLL                                                                                                                                                                                                                                                                                                                                   |
|    | H1D | R5F11NGF, R5F11NGG, R5F11NLF, R5F11NLG, R5F11NME, R5F11NMF, R5F11NMG, R5F11PLF, R5F11PLG, R5F11RMG                                                                                                                                                                                                                                                             |
|    | I1A | R5F1076C, R5F107AC, R5F107AE, R5F107DE                                                                                                                                                                                                                                                                                                                         |
|    | I1B | R5F10MME, R5F10MMG, R5F10MPE, R5F10MPG                                                                                                                                                                                                                                                                                                                         |
|    | I1C | R5F10NLE, R5F10NLG, R5F10NME, R5F10NMG, R5F10NMJ, R5F10NPJ                                                                                                                                                                                                                                                                                                     |
|    | I1D | R5F11768, R5F1176A, R5F11778, R5F1177A, R5F117A8, R5F117AA, R5F117AC, R5F117BA, R5F117BC, R5F117GA, R5F117GC                                                                                                                                                                                                                                                   |
|    | I1E | R5F11CBC, R5F11CCC                                                                                                                                                                                                                                                                                                                                             |
|    | L12 | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC                                                                                                                                                                                                                     |
|    | L13 | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG                                                                                                                                                                                                                                         |
|    | L1A | R5F11MMD, R5F11MME, R5F11MMF, R5F11MPE, R5F11MPF, R5F11MPG                                                                                                                                                                                                                                                                                                     |
|    | L1C | R5F110ME, R5F110MF, R5F110MG, R5F110MH, R5F110MJ, R5F110PE, R5F110PF, R5F110PG, R5F110PH, R5F110PJ, R5F111ME, R5F111MF, R5F111MG, R5F111MH, R5F111MJ, R5F111PE, R5F111PF, R5F111PG, R5F111PH, R5F111PJ                                                                                                                                                         |
| RX | 110 | R5F51101, R5F51103, R5F51104, R5F51105, R5F5110H, R5F5110J                                                                                                                                                                                                                                                                                                     |
|    | 111 | R5F51111, R5F51113, R5F51114, R5F51115, R5F51116, R5F51117, R5F51118, R5F5111J                                                                                                                                                                                                                                                                                 |
|    | 113 | R5F51135, R5F51136, R5F51137, R5F51138                                                                                                                                                                                                                                                                                                                         |
|    | 130 | R5F51303, R5F51305                                                                                                                                                                                                                                                                                                                                             |
|    | 230 | R5F52305, R5F52306                                                                                                                                                                                                                                                                                                                                             |
|    | 231 | R5F52315, R5F52316, R5F52317, R5F52318                                                                                                                                                                                                                                                                                                                         |
|    | 23T | R5F523T3, R5F523T5                                                                                                                                                                                                                                                                                                                                             |
|    | 24T | R5F524T8, R5F524TA, R5F524TB, R5F524TC, R5F524TE, R5F524T, R5F524T8                                                                                                                                                                                                                                                                                            |
|    | 24U | R5F524UB, R5F524UC, R5F524UE                                                                                                                                                                                                                                                                                                                                   |
|    | 23W | R5F523W7, R5F523W8                                                                                                                                                                                                                                                                                                                                             |
|    | 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML                                                                                                                                                                                                                                                                                                                         |
|    | 651 | R5F56514, R5F56517, R5F56519                                                                                                                                                                                                                                                                                                                                   |
|    | 65N | R5F565N4, R5F565N7, R5F565N9                                                                                                                                                                                                                                                                                                                                   |
|    | 66T | R5F566TA, R5F566TE, R5F566TF, R5F566TK                                                                                                                                                                                                                                                                                                                         |
|    | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML                                                                                                                                                                                                                                                                                                                         |
|    | 72M | R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL                                                                                                                                                                                                                                                                                                               |
|    | 72T | R5F572TF, R5F572TK                                                                                                                                                                                                                                                                                                                                             |
| RZ | T1  | R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910016, R7S910017, R7S910018, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910116, R7S910117, R7S910118, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136 |

## 2.3 Smart Configurator Support

| Family | Group | Devices                                                                                                                                                  |
|--------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | 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, R5F523E6A                                                                                                                                     |
|        | 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                                                                           |
|        | -     | R5F566ND, R5F566ND_DUAL, R5F566NN, R5F566NN_DUAL                                                                                                         |
|        | 66T   | R5F566TA, R5F566TE, R5F566TF, R5F566TK                                                                                                                   |
|        | 71M   | R5F571MF, R5F571MG, R5F571MJ, R5F571ML                                                                                                                   |
|        | 72M   | R5F572MD, R5F572MD_DUAL, R5F572MN, R5F572MN_DUAL                                                                                                         |
|        | -     | R5F572ND, R5F572ND_DUAL, R5F572NN, R5F572NN_DUAL                                                                                                         |
| RX     | 72T   | R5F572TF, R5F572TK                                                                                                                                       |
| RZ     | A2    | R7S921040, R7S921041, R7S921042, R7S921043, R7S921045, R7S921046, R7S921047, R7S921048, R7S921051, R7S921052, R7S921053, R7S921056, R7S921057, R7S921058 |
| 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,<br>R7FA6M2AF3CFB, R7FA6M2AF3CFP |
|-------|---------------------------------------------------------------------------------------------|

---

|       |                                                                                                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RA6M3 | R7FA6M3AF2CBG, R7FA6M3AF2CLK, R7FA6M3AF3CFB, R7FA6M3AF3CFC,<br>R7FA6M3AF3CFP, R7FA6M3AH2CBG, R7FA6M3AH2CLK, R7FA6M3AH3CFB,<br>R7FA6M3AH3CFC, R7FA6M3AH3CFP |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

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### 3. Smart Manual Support

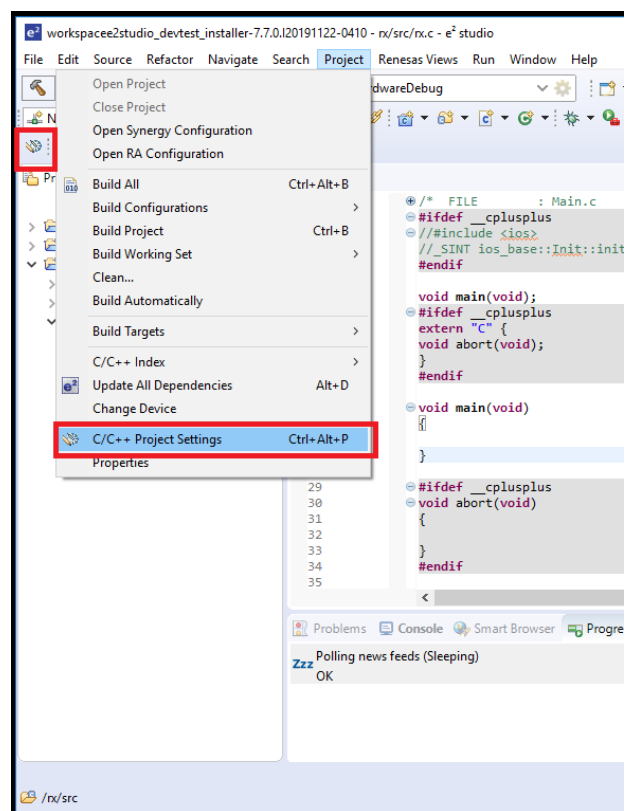
Smart manual support is delivered independently of e<sup>2</sup> studio releases when available. The following devices are available as of January 2020:

- 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

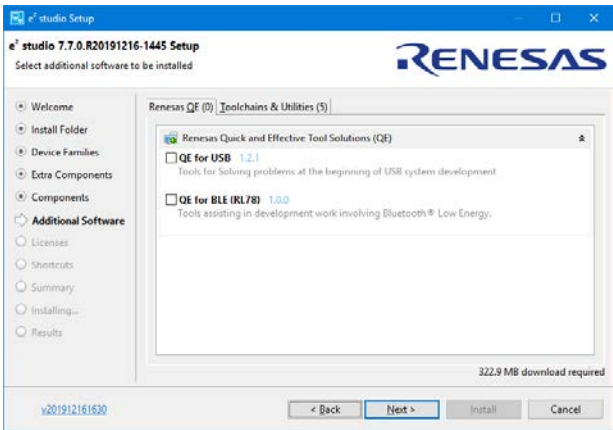
4. What is new in 7.7.0?

| Component | Device | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |        | <p>The new menu item, C/C++ Project Settings, can also be accessed via a button on the main toolbar and using the keyboard shortcut Ctrl+Alt+P.</p> <p>This new menu item automatically opens the project build settings rather than the top-level project properties.</p> <p>The screenshot shows the Project menu C/C++ Project Settings item, with keyboard shortcut and the toolbar button.</p> |

Application                      All



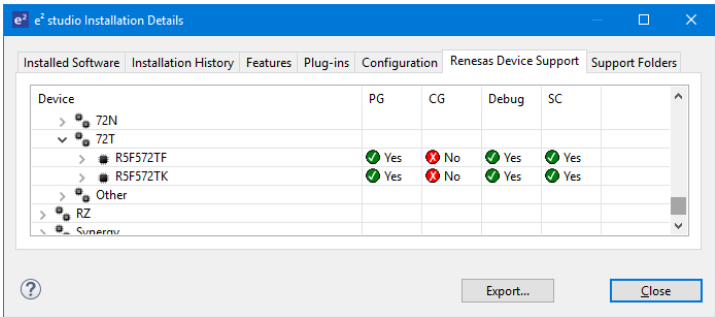
|             |     |                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application | All | <p>During the installation process the e² studio installer will now provide you access to the QE (Quick and Effective) debug plugins suitable for the device families you are installing.</p> <p><a href="https://www.renesas.com/br/en/products/software-tools/tools/solution-toolkit/qe.html">https://www.renesas.com/br/en/products/software-tools/tools/solution-toolkit/qe.html</a></p> |
|-------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



The "Renesas Device Support" page (Help > About e2 studio > Installation Details) now displays an additional column to show devices which support for Smart Configurator (SC).

Application

All

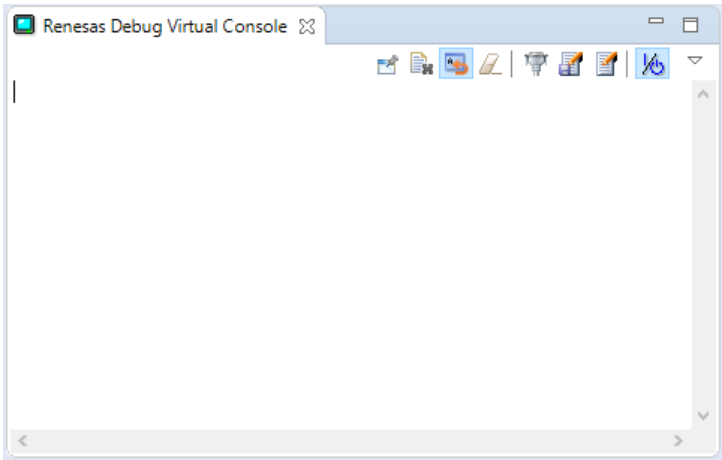


The Renesas Debug Virtual Console view allows users only one escape sequence (<ESC>[2J) to clear the console.

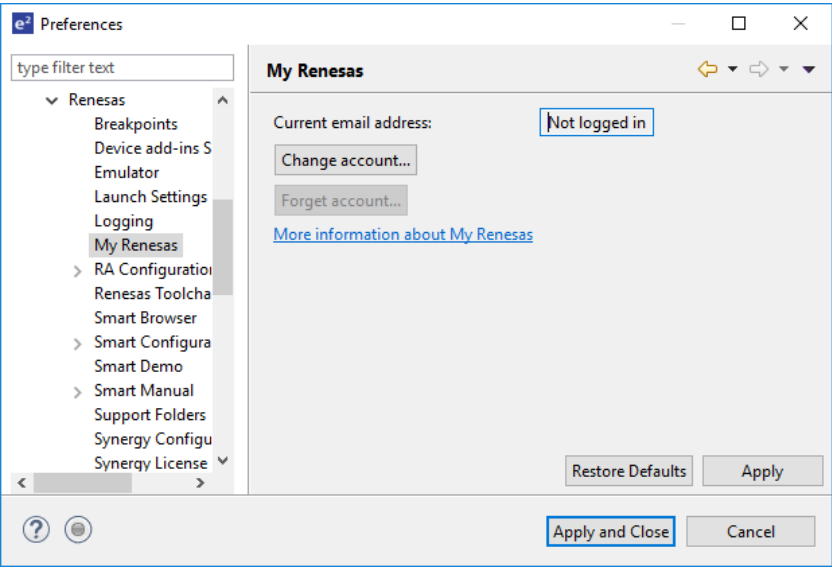
When this console receives an escape sequence from functions for printing a string in C language ("printf" or "puts") or COM port, it clears all contents from the current line that contains this escape sequence to the top of console.

Debug Virtual Console

All



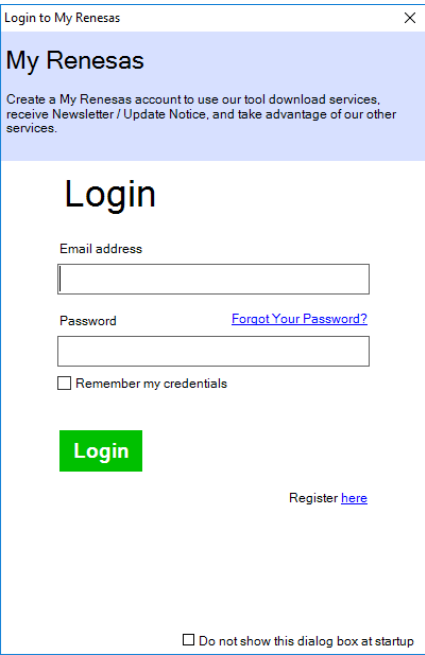
The My Renesas login within e<sup>2</sup> studio can now be configured using a new preference page (Window > Preferences > C/C+ > Renesas > My Renesas).



Application

All

When logging in to the Renesas Logging/Reporting dialog, an improved login dialog is shown.



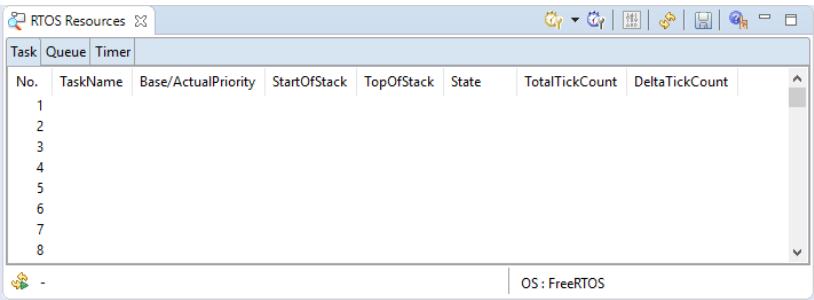
Partner OS Plugin

All

When displaying FreeRTOS information (including Amazon FreeRTOS) with the Partner OS aware debugging plug-in, we can now display "TotalTickCount" and "DeltaTickCount". It is useful for understanding the percentage of Task activity.

The RZ family was also added to the FreeRTOS support (including Amazon FreeRTOS) in the Partner OS aware debugging plug-in.

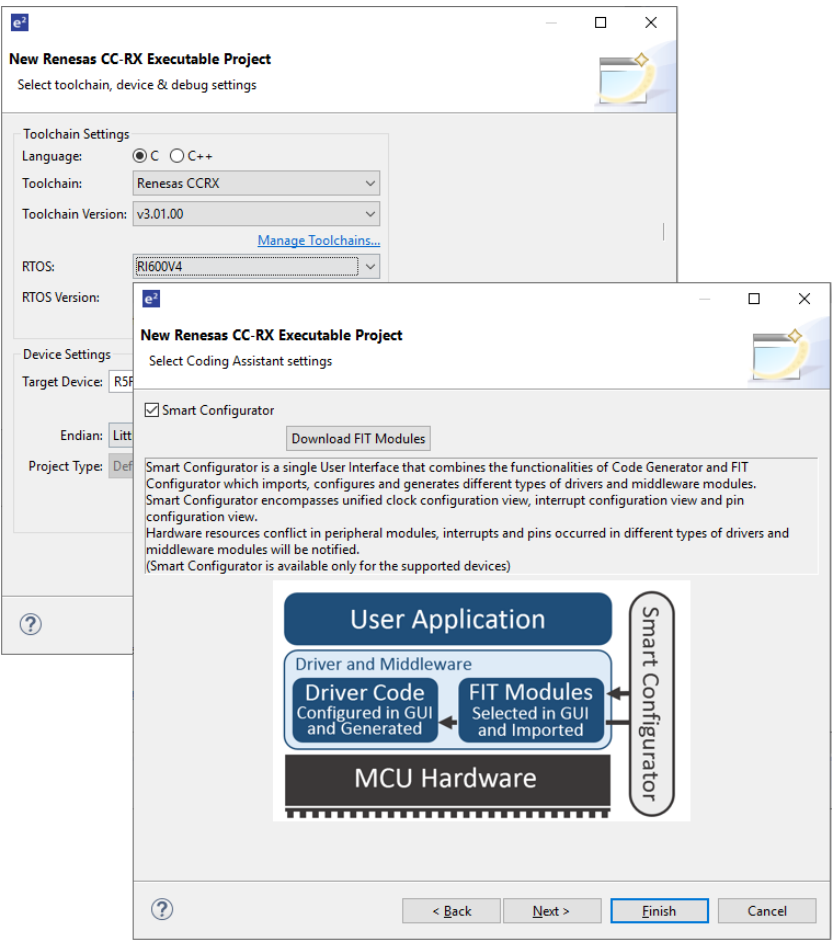
Supported devices are now the RX Family, RA Family, and RZ Family.



When using the RX device family, it is now possible to generate uLTRON projects that support the RTOS RI600V4 within the project generator.

CCRX Project  
Generator

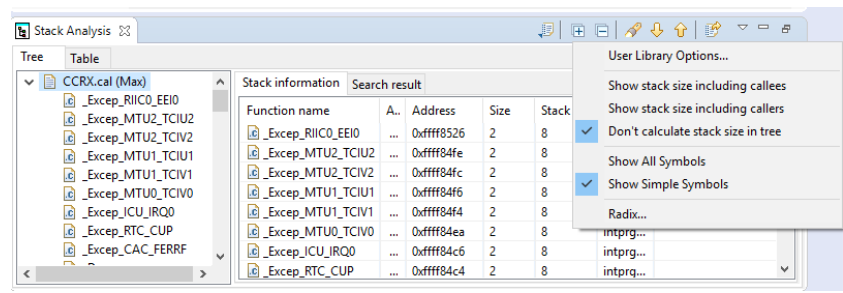
RX



Stack Analysis

RX, RL

The Stack Analysis view now has a new option to not calculate the stack size in the tree list. The option is named "Don't calculate stack size in tree".



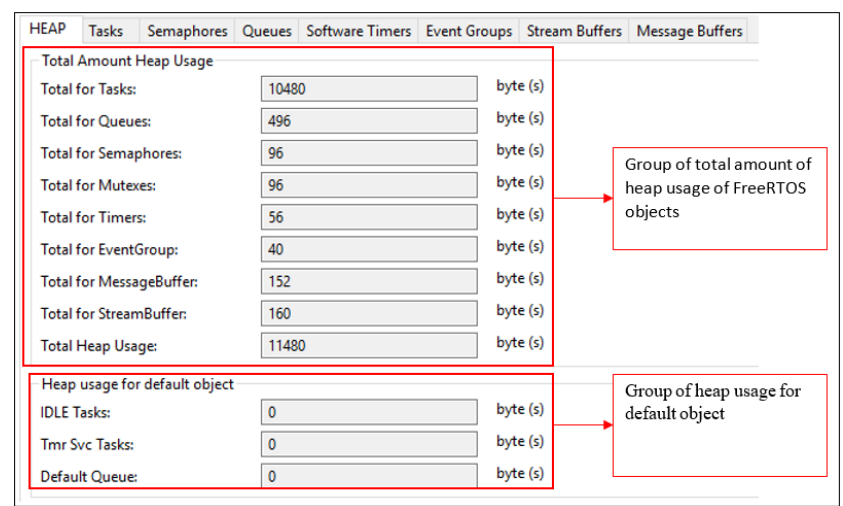
The FreeRTOS object configurator for RX has now an option to Provide Heap size estimation for FreeRTOS:

The configurator has the following options:

- Heap size estimation for FreeRTOS Objects: Tasks, Queues, Semaphores, Software Timers, Event Groups, Message Buffers and Stream Buffers.
- Summarize the total Heap usage for FreeRTOS objects, default value of Kernel predefined object, and inform the accuracy of the heap usage.

FreeRTOS  
Configurator

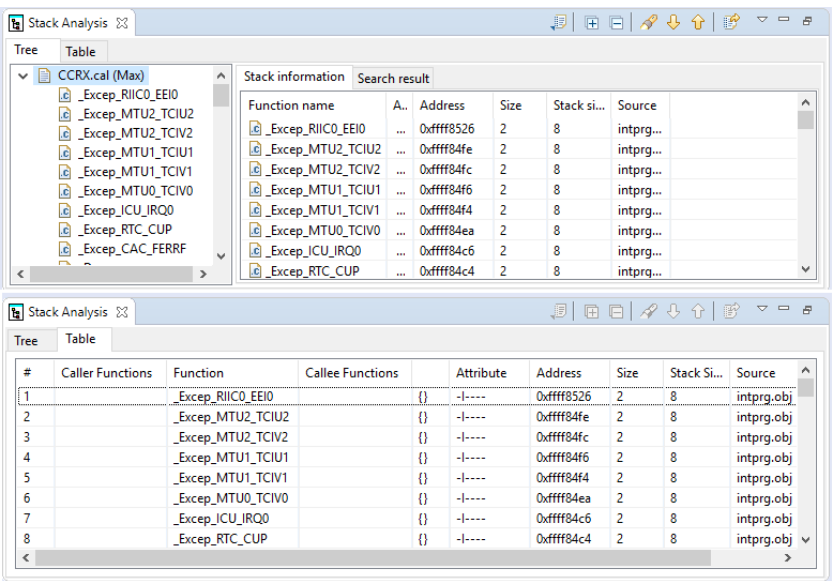
RX



Stack Analysis

RX, RL

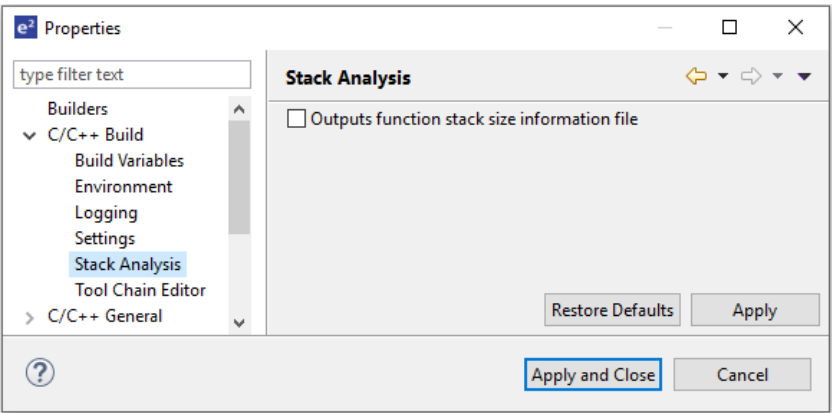
The Stack Analysis view has now been separated into 2 tabs named the Tree tab and Table tab. This is so it is easier to sort and view data in the table tab but easier to browse information in the tree tab.



A new property page, Stack Analysis, has been added to the Project Properties > C/C++ Build. This allows the users to enable/disable the generation of function stack size information file when the project is built. This feature supports CC-RX and CC-RL toolchain. The option -stack must be defined at Tool Settings to make sure the SNI file is generated when building the project.

Stack Analysis

RX, RL



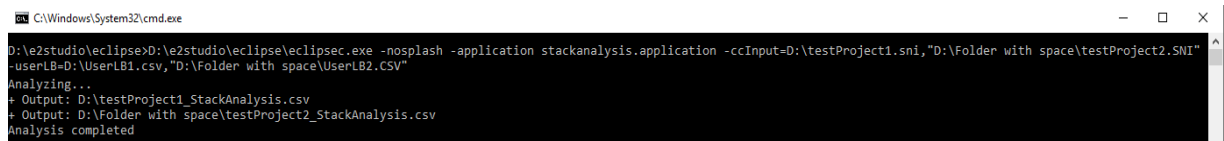
Stack Analysis

Support Stack Analysis Headless application to read SNI file and generate stack information output in Command Line Interface.

**\*Usage\* :**

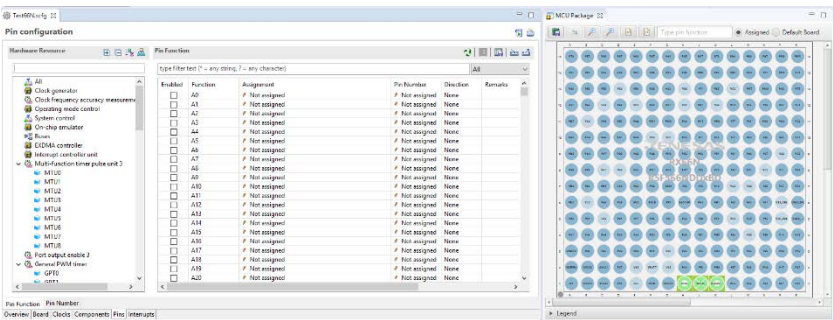
RX, RL

```
eclipse.exe [-nosplash] -application
stackanalysis.application [-ccInput=file1[,file2]
[,file3] ...] [-userLB=file1[,file2] [,file3] ...]
[-calculateMaxStackSizeInclude=[Callee|Caller]]
```



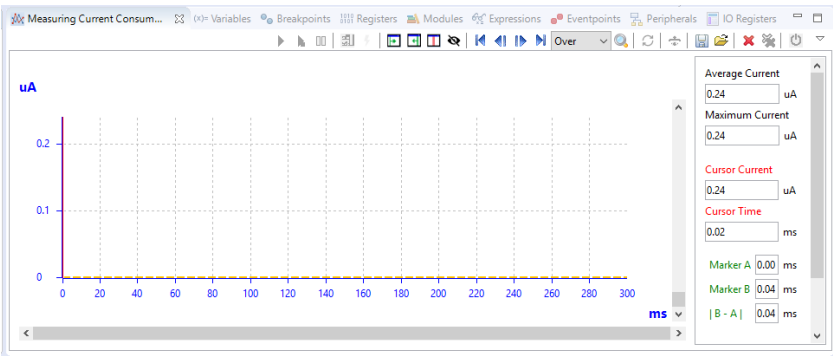
The Smart Configurator has been updated to support RX66N, RX72N group devices.

Smart Configurator      RX



RL78 Simulator supports RL78/L12 and RL78/G13A peripheral function and current consumption function.

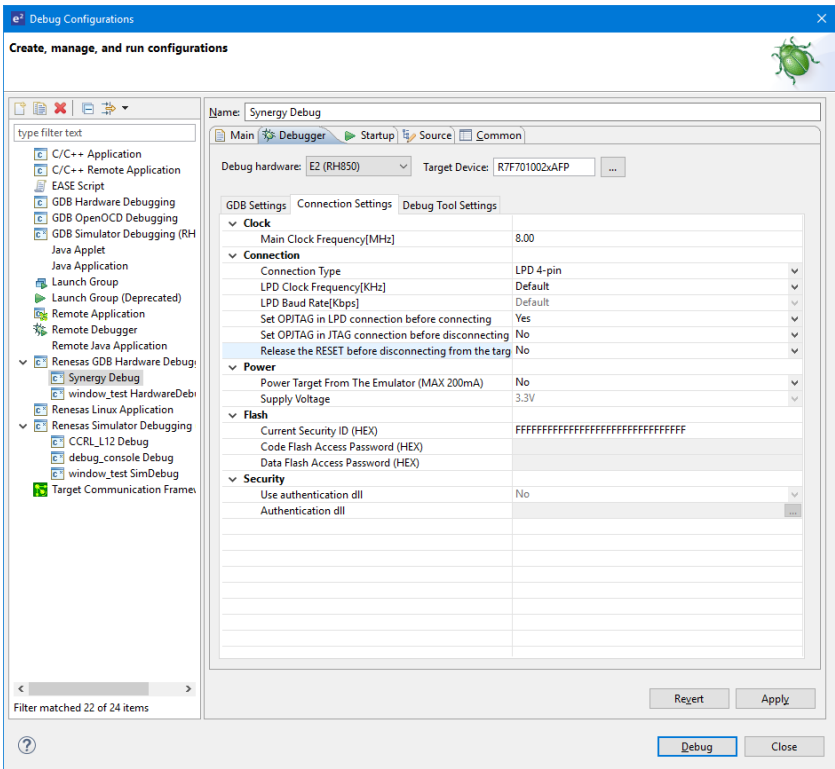
RL Simulator  
Current Consumption      RL



A new option has been added to the RH850 debug configuration for the E2 emulator. By default, when the debugger is disconnected the reset signal is not released for the target board.

RH850 E2 Emulator      RH850

An option has been added so that when set this reset signal is released. The option is "Release the RESET before disconnecting from the target system", the default setting is No.



The RZ Smart Configurator now takes advantage of driver xml improvements to allow drivers to specify that a user just needs a variant of it.

For example there are 3 os\_abstraction drivers and the user just needs one variant of os\_abstraction in users project.

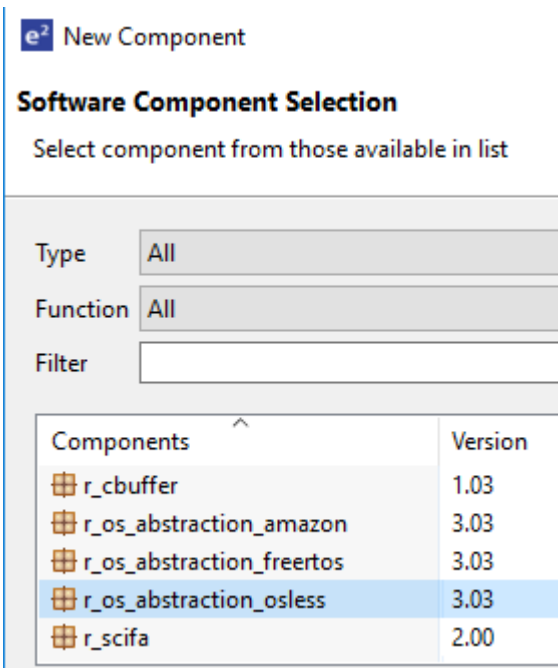
RZ Smart Configurator

RZ

Smart Configurator will prevent adding more than one variant of os\_abstraction.

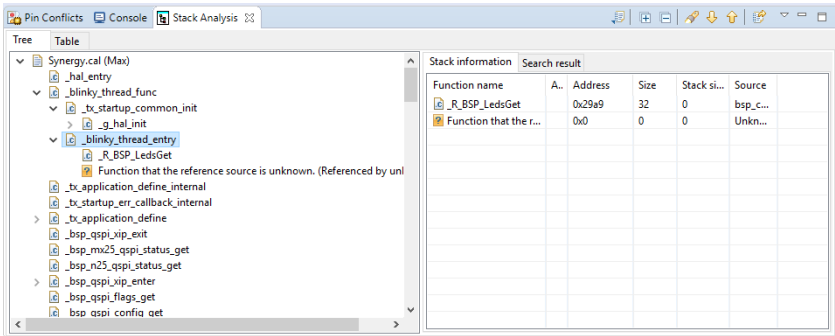
Smart Configurator also allows to specify an optional dependency in driver xml, for example scifa requires os\_abstraction and it can use any variant of it.

Smart Configurator will also check the dependency and it will inform you if the optional dependency is added.



The Stack Analysis view now supports the Synergy device family and supports the GCC compiler. This is enabled by adding the following options to the miscellaneous compiler flag options : -fstack-usage and -fdump-rt1-pro\_and\_epilogue

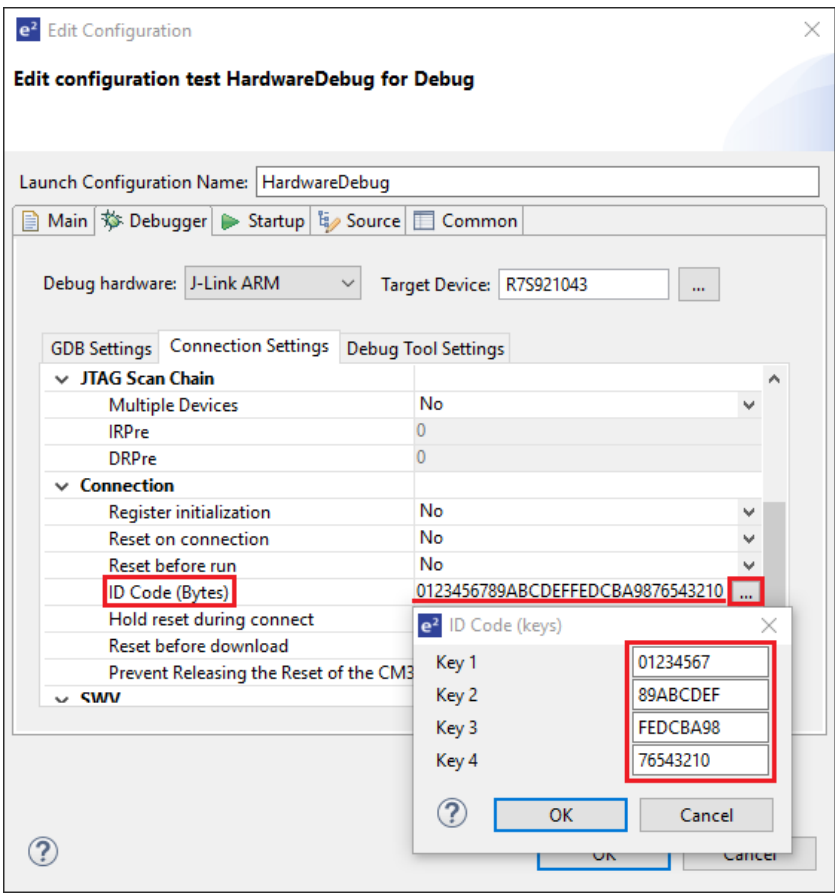
Stack Analysis  
Synergy  
, RA



A new ID Code (Bytes) dialog has been added to Debug Configurations to support ARM devices:

RE Debug  
Configuration  
RE

4 times 32-bit hex value and A single 128-bit hex value are the input methods.  
Input value as big endian format will be unchecked as default, this means the data of the dialog will use little endian format.  
The preview area shows the original ID Code when opening the dialog it will then be updated if there is any change by user.



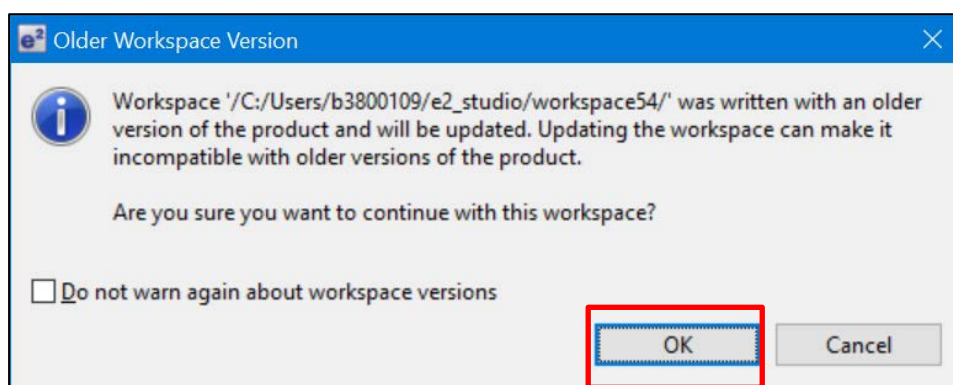
## 5. Useful workarounds and information for 7.7.0

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.<br><br>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.<br><br>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.                                |

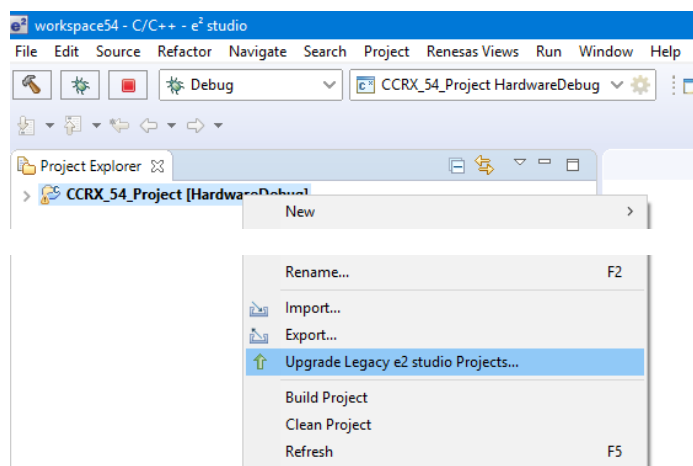
Upon opening an older workspace, the following dialog would be displayed:



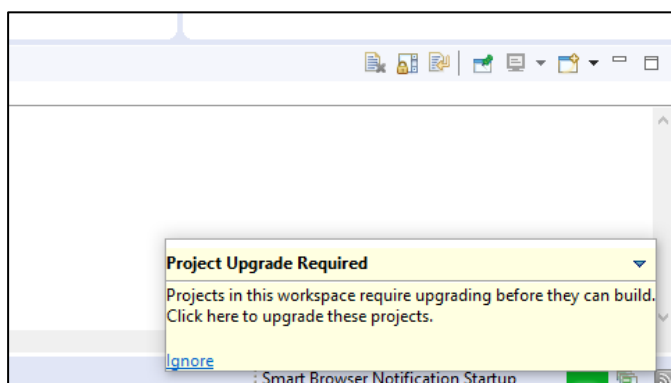
Clicking OK will update the workspace to the newer e<sup>2</sup> studio.

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

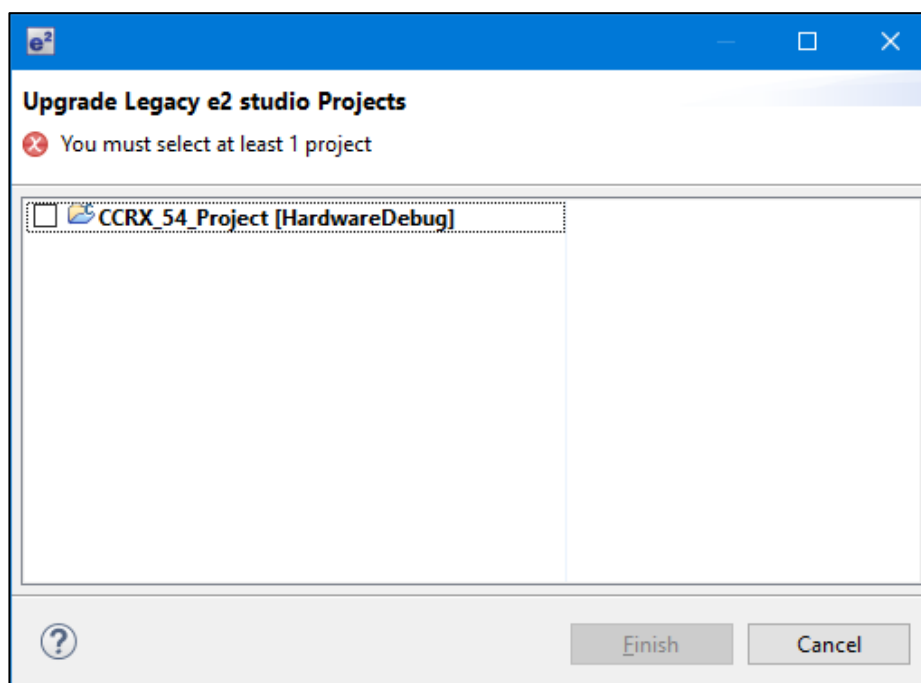
If for some reason this process does not start it is also possible to launch the "Upgrade Legacy of e2 studio Projects..." from the project context menu.



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:

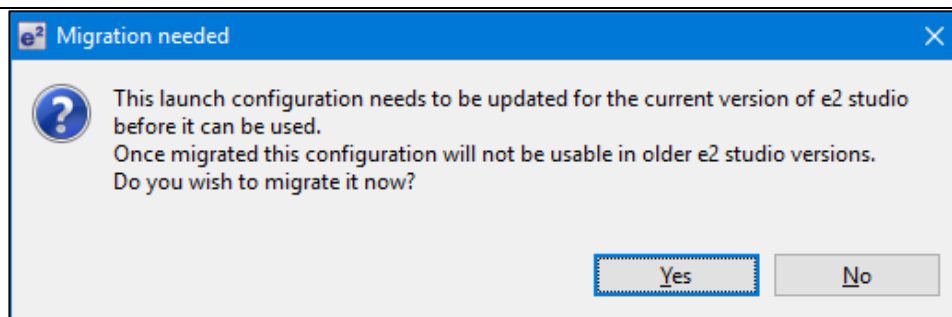


To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this, you should ensure your project is backed up as this operation is not reversible.

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.



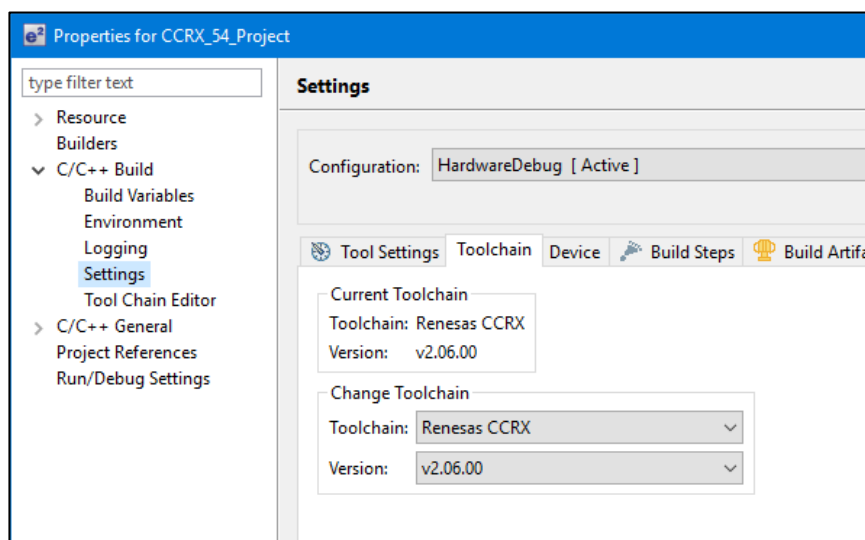
Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

#### 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

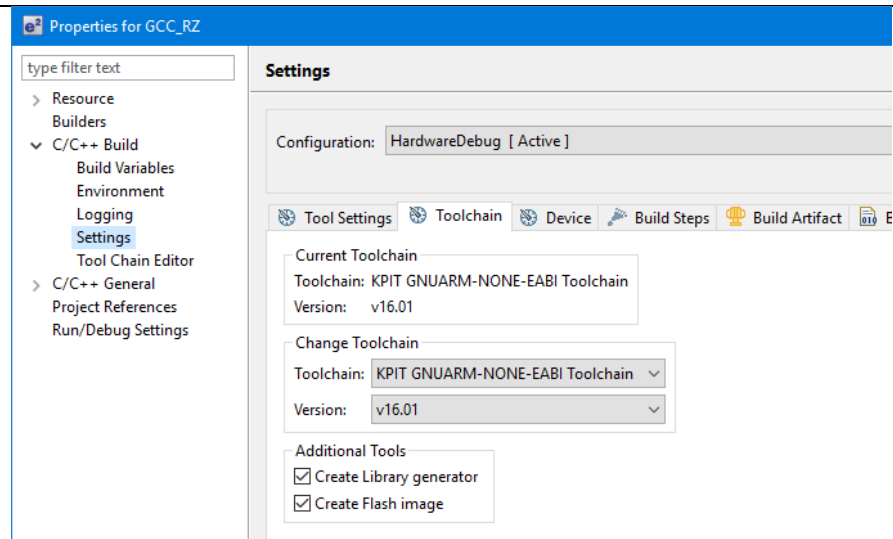
The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e<sup>2</sup> studio product but now using the gnuarmeclipse plugins.

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/>

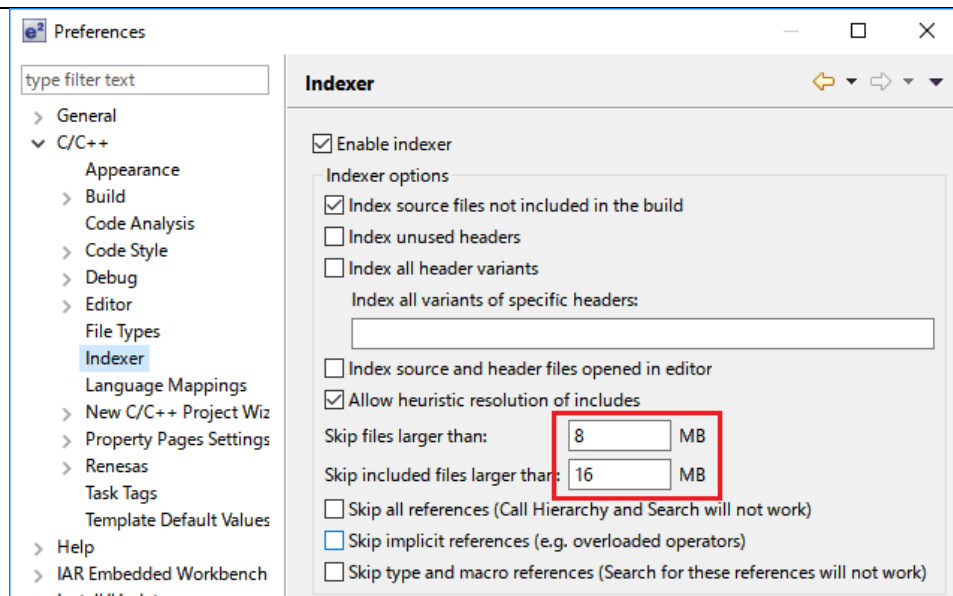
Once integrated it is possible to integrate the library generator from the toolchain tab of the build settings page.



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

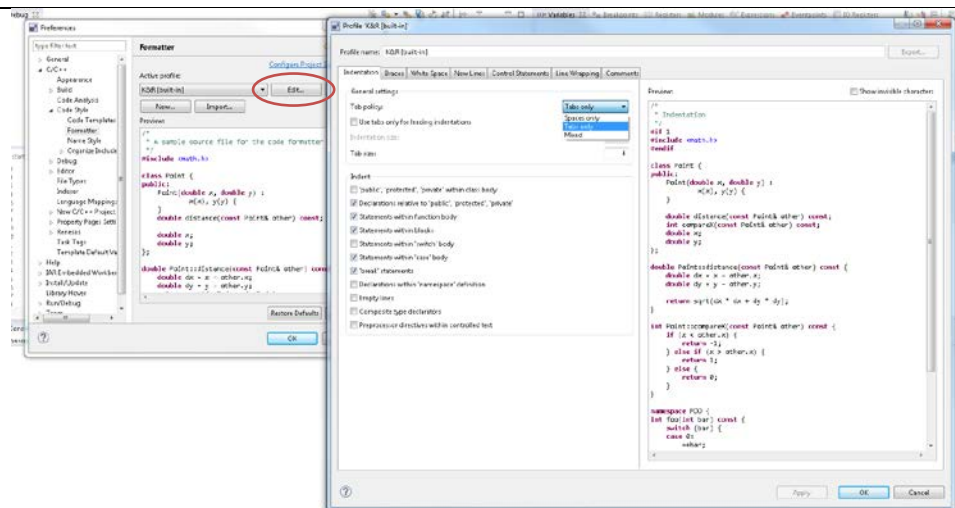
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QE compatibility    | <p>If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1.<br/>Other QE series can be used with e<sup>2</sup> studio 6.0.</p> <p>What is QE?<br/><a href="https://www.renesas.com/qe">https://www.renesas.com/qe</a></p> <p>Details of QE for TCP/IP<br/><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.SWTError: No more handles" this can be caused by certain multi-monitor software and the Eclipse framework.</p> <p>If this error occurs there are 2 workarounds:</p> <ol style="list-style-type: none"> <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>So 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.kpitgnu tools.com">www.kpitgnu tools.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>                                                                                                                                                                                                        |
| 2010 | HEW Importer | <p>Symptoms: Project fails to build after importing a legacy project from HEW</p> <p>Conditions: If a long filename or path is used, and the HEW project importer is used, the project may fail to build.</p> <p>Workaround: Move the original HEW project to a shallow directory structure (i.e.) C:\Workspace and import from there. Also, ensure that the HEW project is relocated before importing into e<sup>2</sup> studio.</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          | If eventpoints do not always work just after they are set, you can use the "Apply to Target" toolbar button in the Eventpoint view to send the Eventpoints to the target manually. This will always ensure the debugger target has all the required eventpoint updates before execution starts. |
| 5772 | IAR Plugins          | <p>The IAR Plugin Manager is included in 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 | When the load module for RL78/G10 which created at CC-RL is debugged in E1, please specify the following option:<br>[Linker] -> [Device] -> "Set enable/disable on-chip debug by link option"                                                                                                   |
| 7217 | Application          | The restore default settings does not restore all the options set during project generation. Instead, it sets the defaults to the base settings for the device family in use.                                                                                                                   |
| 7524 | RZ/T1 Debugging      | <p>In a RZ/T1 RAM-based project, the "Reload" function does not work.</p> <p>Reloading or re-downloading during debugging resets the device and the RAM content is erased.</p> <p>To continue the debugging, disconnect and connect the debugger again.</p>                                     |
|      | Use spaces as tabs   | <p>Eclipse and CDT both have settings for use spaces as tabs. The option on the Editor preferences page conflicts with the CDT formatter settings.</p> <p>To change the use spaces as tabs option in e<sup>2</sup> studio please use this page:</p>                                             |



|       |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | Installer problems         | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|       | Antivirus                  | In some situations, the Norton anti-virus tool can interfere with the building of Renesas Synergy projects. If possible, please disable the antivirus program when building Renesas Synergy projects on systems with Norton Antivirus installed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|       | Green Hills RH850 Projects | <p>When debugging the RH850 object built with the Green Hills compiler in e<sup>2</sup> studio, specify the following option for the compiler option:<br/>-gtws</p> <p>The GUI setting menu is as follows.<br/>[GHS C Compiler for V800 Standalone]-[Debugging Option]<br/>"Generate Target-Walkable Stack" -&gt; 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"> <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.<br/>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]<br/>Delete the specification of this folder with the compile option include path setting.</p>                                                                                                                                                                                 |
| 24883 | R2/A2M                    | RZ / A2M project generated by e <sup>2</sup> studio does not support GCC ARM 7.x. Please use GCC ARM 6.3.                                                                                                                                                                                                                                                                                                                                                                                             |
| 28824 | GDB Server Synergy        | <p>When using Synergy and RZ devices (with a JLink connection) the "Use Flash Breakpoints" option on the Debug Configuration is currently ignored and the setting will default to "On".</p> <p>If needed, the workaround is to use a JLink script file with the JLINK_ExecCommand("DisableFlashBPs") command to override this setting.</p>                                                                                                                                                            |
| 27960 | Code Generator            | <p>It is not currently possible to add the code generator to a RX IAR project which is using the version 4.x.</p> <p>An error will be displayed with the error message "The selected project is not supported by Code Generator!" Note: This issue does not occur with IAR Toolchain for RX (3.x).</p>                                                                                                                                                                                                |
| 27913 | GDB server RL78           | 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.                                                                                                                                                                                                                                                                                                                                                 |
| 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.</p> <p>(e.g. "1file.o" and "*filename.o").</p>                                                                                                                                                                   |
| 29278 | RZ Debugging              | You may experience download failures when debugging RZ/A1 Dual_SPI projects. In that case, it is recommended to replace the J-Link dll (JLinkARM.dll) under DebugComp/RZ/ARM/Segger with the DLL version of V6.44h (2019-05-03) or earlier. Alternatively use V6.48a or later.                                                                                                                                                                                                                        |
| 30431 | RA                        | The Smart Demo functionality for RA does not currently work. The project cannot be created successfully.                                                                                                                                                                                                                                                                                                                                                                                              |

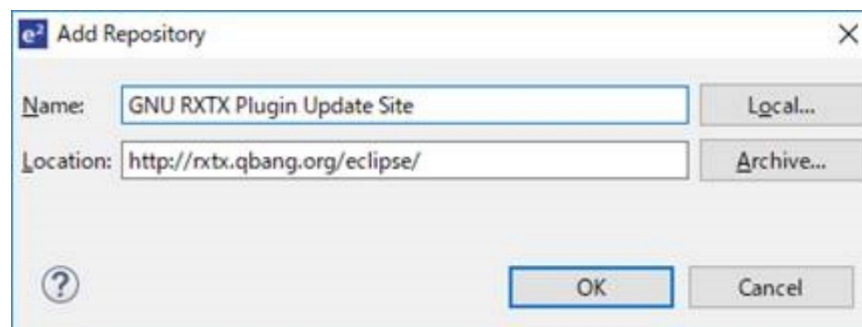
### RZ/G Linux Platform Tools

When using RZ/G Linux Platform Tools, gnu.io.rtx plug-ins should be installed same as Nebula plug-ins.

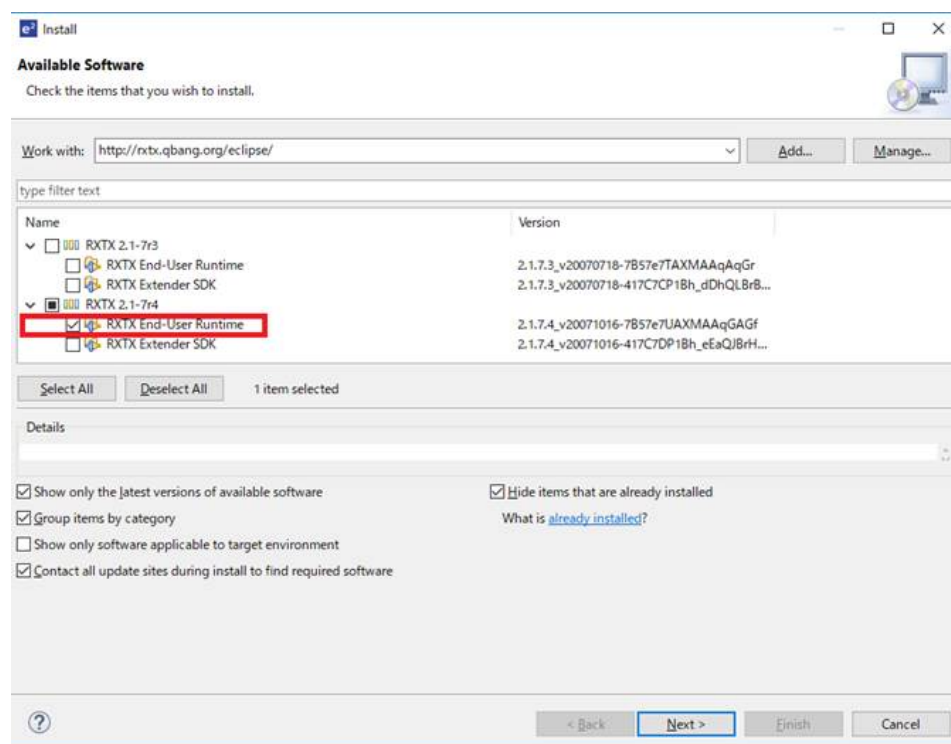
Please follow the below steps to install gnu.io.rtx plug-ins.

Start the e<sup>2</sup> studio and select [Help] -> [Install New Software] from the menu bar to open the [Install] dialog box.

Click on the [Add] button, enter "GNU RTX Plugin Update Site" as a name and "<http://rtx.qbang.org/eclipse/>" as a location, and click on the [OK] button.



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



### 29869 Debug Configuration RX

To be able to connect with RX7xx devices, please specify the Operating Frequency value in Debug Tool Settings/Performance Timer

## 6. Open Issues in 7.7.0

Open issues in the e<sup>2</sup> studio 7.7 product will be kept up to date [here](#):

Please visit to see the latest open issue list.

## 7. Appendix

### 7.1 Website and Support

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

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### Renesas Electronics Corporation

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#### **Renesas Electronics America Inc.**

1001 Murphy Ranch Road, Milpitas, CA 95035, U.S.A.  
Tel: +1-408-432-8888, Fax: +1-408-434-5351

#### **Renesas Electronics Canada Limited**

9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3  
Tel: +1-905-237-2004

#### **Renesas Electronics Europe Limited**

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K  
Tel: +44-1628-651-700, Fax: +44-1628-651-804

#### **Renesas Electronics Europe GmbH**

Arcadiastrasse 10, 40472 Düsseldorf, Germany  
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

#### **Renesas Electronics (China) Co., Ltd.**

Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China  
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

#### **Renesas Electronics (Shanghai) Co., Ltd.**

Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, 200333 P. R. China  
Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

#### **Renesas Electronics Hong Kong Limited**

Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
Tel: +852-2265-6688, Fax: +852 2886-9022

#### **Renesas Electronics Taiwan Co., Ltd.**

13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan  
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

#### **Renesas Electronics Singapore Pte. Ltd.**

80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949  
Tel: +65-6213-0200, Fax: +65-6213-0300

#### **Renesas Electronics Malaysia Sdn.Bhd.**

Unit 1207, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia  
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

#### **Renesas Electronics India Pvt. Ltd.**

No.777C, 100 Feet Road, HAL 2nd Stage, Indiranagar, Bangalore 560 038, India  
Tel: +91-80-67208700, Fax: +91-80-67208777

#### **Renesas Electronics Korea Co., Ltd.**

17F, KAMCO Yangjae Tower, 262, Gangnam-daero, Gangnam-gu, Seoul, 06265 Korea  
Tel: +82-2-558-3737, Fax: +82-2-558-5338