# e² studio 7.0.0

Release Note

R20UT4353EE0100
Rev.1.00
July 13th, 2018

## Introduction

This document outlines the device support, new features added in 7.0.0, fixed issues and open issues in e² studio 7.0.0.

## Contents

# 1. Product Information

## 1.1 Supported Operating Systems

These operating systems are officially supported by e² studio:

- Windows 7 32-bit
- Windows 7 64-bit
- 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 e² studio 7.0.0.

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

**Note:**

*1: Project converter is now available to convert from GNU ARM-RZ/GNU ARM-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.

Required version for Synergy is 4.9.3.

Recommended version for RZ is 6.3.1. Although versions 5.x and 7.x can be registered and used.

*3: Legacy GNUARM toolchains are available from https://gcc-renesas.com/. In addition, the latest RX and RL 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 e² studio. These Eclipse plugins are provided by IAR and are not supported by Renesas.

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

# 2. Device Support

## 2.1 Project Generator Support

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

| CPU | Family | Devices |
|---|---|---|
| EC-1 | EC-1 | R9A06G043 |
| 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) |
| | D1M2 | R7F701408, R7F701410, R7F701428, R7F701430,(Debug Support Only) |
| | E1L | R7F701201, R7F701205,(Debug Support Only) |
| | E1M-S | R7F701202, R7F701204,(Debug Support Only) |
| | E1x-FCC1 | R7F701Z05, R7F701Z06, R7F701Z07,(Debug Support Only) |
| | F1H | R7F701501, R7F701502, R7F701503, R7F701506, R7F701507, R7F701508, R7F701511, R7F701512, R7F701513,(Debug Support Only) |
| | F1H-GW | 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, 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) |

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|---|---|---|
| | P1H-C | R7F701370AEEBG, 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) |
| | R1L | 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 |
| | 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, 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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|---|---|
| | 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 | |
| | 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 | |
| G1C | R5F10JBC, R5F10JGC, R5F10KBC, R5F10KGC |
| G1D | R5F11AGG, R5F11AGH, R5F11AGJ |
| G1E | R5F10FLC, R5F10FLD, R5F10FLE, R5F10FMC, R5F10FMD, R5F10FME |
| | R5F11B7C, R5F11B7E, R5F11BBC, R5F11BBE, R5F11BCC, R5F11BCE, R5F11BGC, R5F11BGE, R5F11BLC, R5F11BLE |
| G1F | |

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|---|---|---|
| | 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, R5F10NPG, 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, 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 |
| | 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 |
| | 23T | R5F523T3, R5F523T5 |
| | 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, |

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| | | 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) |
| | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML |
| 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 |
| | G | R8A77430, R8A77450<br><br>R8A77430_Core1, R8A77450_Core1,(Debug Support Only) |
| | G1C | R8A77470 |
| | G1H | R8A77420 |
| | G1N | R8A77440 |
| | 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 |
| Renesas Synergy *1 | 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 |
| 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 |

Note: *1: The Synergy Software Package (SSP) can supply additional Renesas Synergy™ device support. Please check the release note for the SSP version you are using for additional device support.

## 2.2 Code Generator Support

| CPU | Family | 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, 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 |

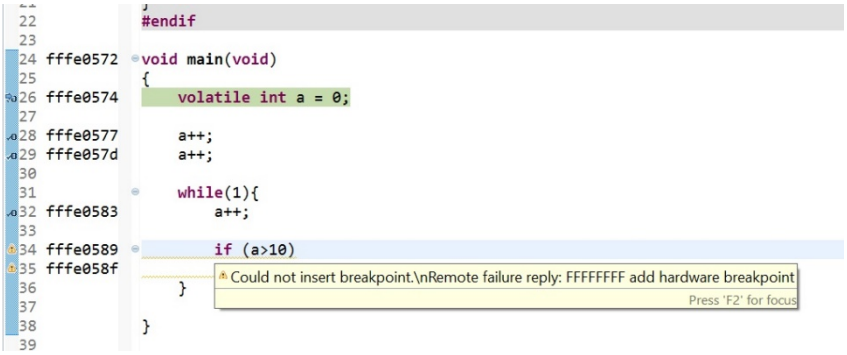
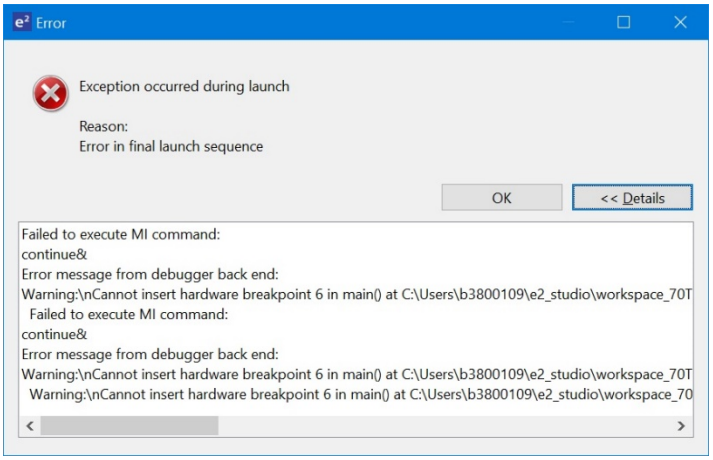
| | | |
|---|---|---|
| | L12 | R5F10RB8, R5F10RBA, R5F10RBC, R5F10RF8, R5F10RFA, R5F10RFC, R5F10RG8, R5F10RGA, R5F10RGC, R5F10RJ8, R5F10RJA, R5F10RJC, R5F10RLA, R5F10RLC |
| | L13 | R5F10WLA, R5F10WLC, R5F10WLD, R5F10WLE, R5F10WLF, R5F10WLG, R5F10WMA, R5F10WMC, R5F10WMD, R5F10WME, R5F10WMF, R5F10WMG |
| | 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 |
| | 24U | R5F524UB, R5F524UC, R5F524UE |
| | 64M | R5F564MF, R5F564MG, R5F564MJ, R5F564ML |
| | 651 | R5F56514, R5F56517, R5F56519 |
| | 65N | R5F565N4, R5F565N7, R5F565N9 |
| | 71M | R5F571MF, R5F571MG, R5F571MJ, R5F571ML |
| RZ | T1 | R7S910001, R7S910002, R7S910006, R7S910007, R7S910011, R7S910013, R7S910015, R7S910016, R7S910017, R7S910018, R7S910025, R7S910026, R7S910027, R7S910028, R7S910035, R7S910036, R7S910101, R7S910102, R7S910106, R7S910107, R7S910111, R7S910113, R7S910115, R7S910116, R7S910117, R7S910118, R7S910125, R7S910126, R7S910127, R7S910128, R7S910135, R7S910136 |

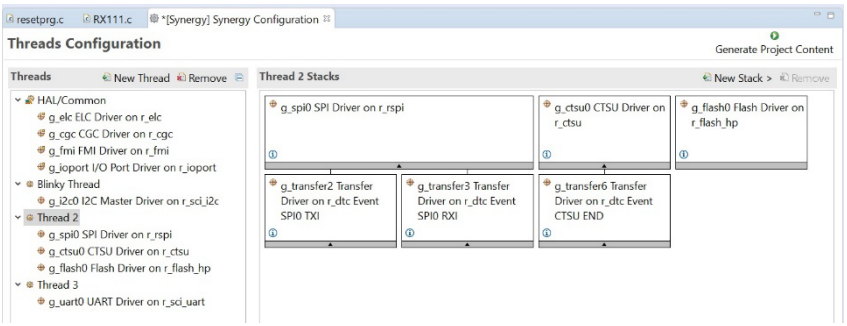
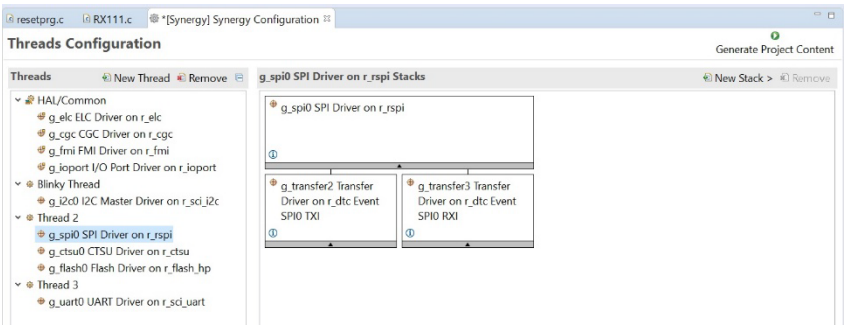
## 3. Smart Manual Support

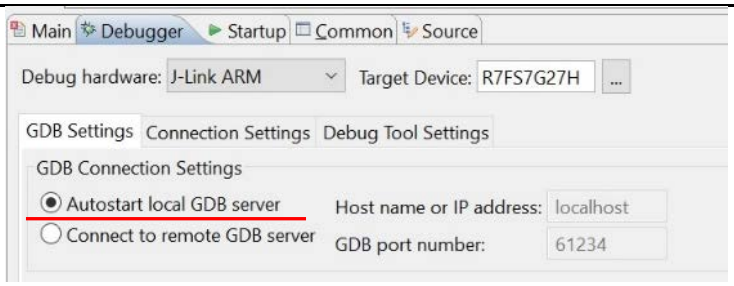
Smart manual support is delivered independently of e² studio releases when available. The following devices are available as of the 10th of July 2018.

- RX62G
- RX62T
- RX63N
- RX63T
- RX64M
- RX71M
- RX110
- RX111
- RX113
- RX210
- RX220
- RX631
- RX651
- RX65N
- RX24U
- RX24T
- RL78/L12
- RL78/L13
- RL78/G14
- RL78/G13
- RL78/G12
- RL78/G11
- RL78/G10
- RL78/G1F

## 4. What is new in 7.0.0?

| Component | Device | Description |
|---|---|---|
| Synergy Headless Build | Renesas Synergy | When using e² studio to do a headless build with Synergy it can be difficult to setup a brand-new workspace and configure the licence file location.<br><br>This has been improved to use a command line parameter on the e² studio command line.<br><br>`-vmargs -Dcom.renesas.synergyLicenseFile="<absolute path to licence file>"` |
| Debugger | All | Breakpoint error handling has been improved in this version of e2 studio. The reason for breakpoints not being set is more clearly shown in the source window.<br><br>  <br><br>Hovering over the breakpoints which are not set will clearly show the reason for the failure.<br><br>If breakpoints fail on the launch of the debugger then the launch is aborted. An error is displayed and you can now see the exact reason for failure. If you then remove the breakpoint causing the problem and re-launch it should work.<br><br>  |

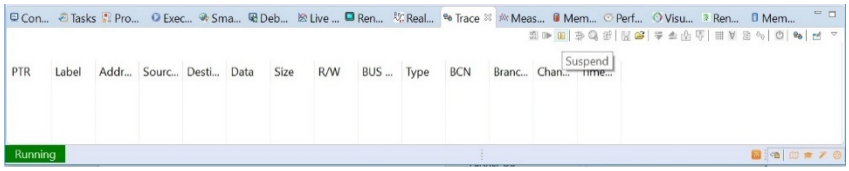
| | | |
|---|---|---|
| Synergy Editor | Renesas Synergy | The threads page user interface has been updated to navigate your threads and Synergy software stacks more effectively.<br><br>Previously thread selection was a flat list which only allowed each thread to be selecting. In this case all software stacks were shown in the graphical area.<br><br>Now the threads are shown as a tree meaning you can still select the entire content of a thread or choose an individual software stack. When choosing an individual software stack only that software stack is shown in the graphical view.<br><br>In the example below the user has selected the thread and 3 software stacks are shown.<br><br>  <br><br>In the example below the user has selected the exact software stack and in this case only that one is shown.<br><br>  |
| RZ Toolchain management | RZ | e² studio has been updated to allow the registration and use of the Linaro GCC 7.2-2017.11 toolchain for RZ application build and debugging. This can be used for RZ/A Linux Target builds. |
| Debugger | All | In older versions of e² studio when debugging multiple debug connections, you needed to set the port numbers for GDB and ADM manually for the second debug connection.<br><br>This was not user friendly so a new setting was added to automatically select available ports.<br><br>This can be seen for all devices on the debug configuration page. |

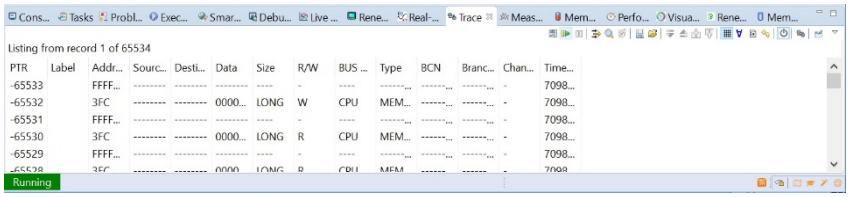



The “Autostart local GDB server” is the option to use for automatic port configuration.

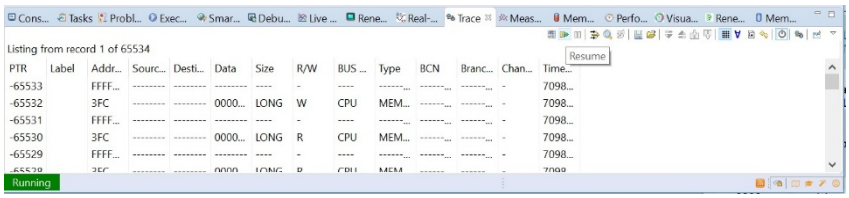
If you need to attach to an existing already running GDB server use the “Connect to remote GDB server” and enter the first port number which was output to the console when the GDB server connects.

| | | |
|---|---|---|
| Trace | All | The Trace plugin and debugger have been improved to now offer Trace capture pause and re-start.<br><br>When the debugger is running you can now press the pause button on the Trace view. When this button is pressed the trace is shown within the trace view for the captured data up to the point trace was paused. |



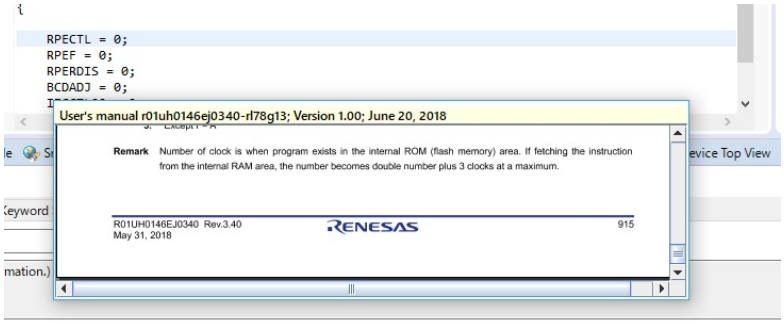




Pressing the resume button then re-starts trace capture.

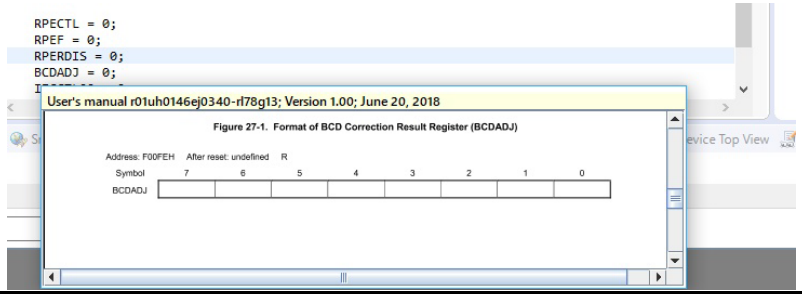


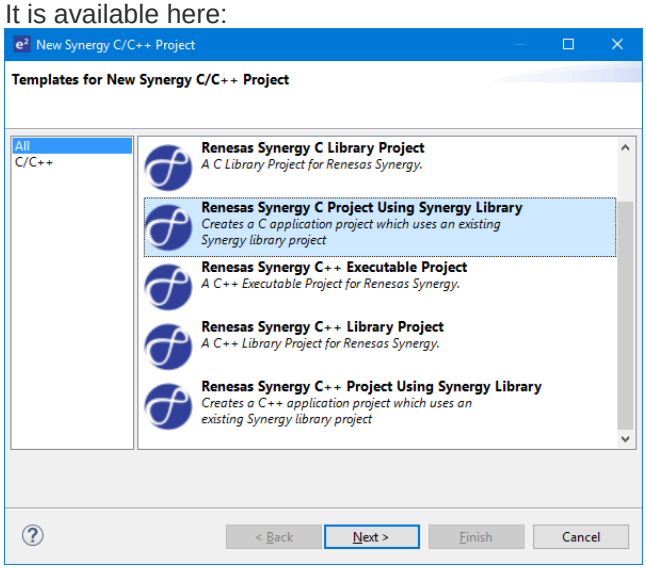

| | | |
|---|---|---|
| Smart Manual | RL78 | In previous versions of e² studio occasionally the Smart Manual link to hardware manual was displayed in the wrong location. The expected behaviour is to jump to the SFR register definition location in the manual.<br><br>In some cases, for the RL78 device family the location was incorrect. |

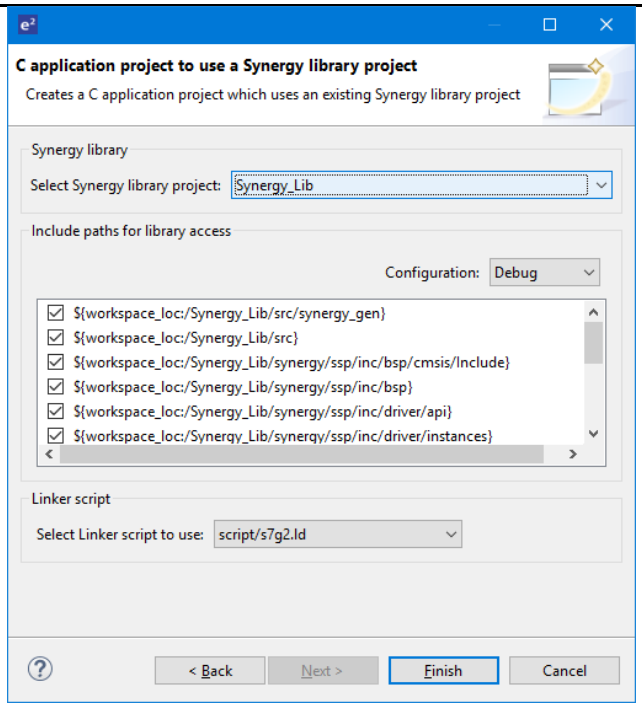
Occasional behaviour in old versions of e² studio:




Corrected behaviour in latest version of e² studio:

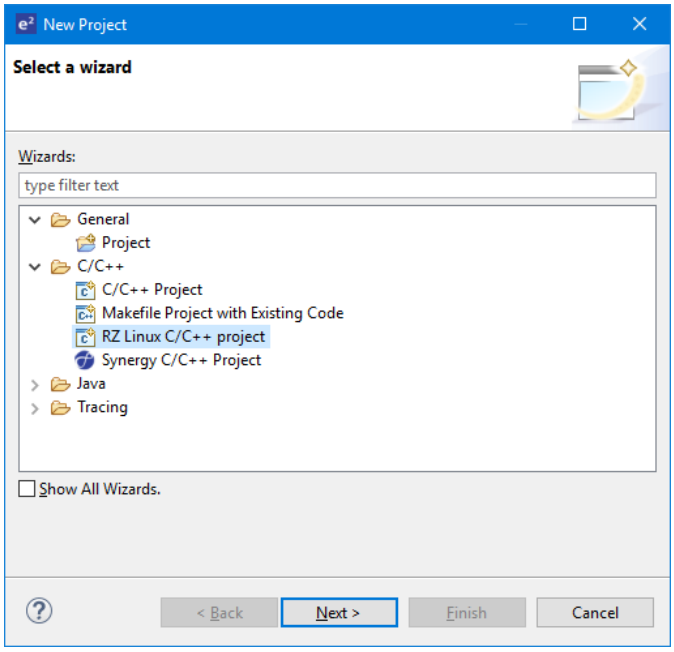


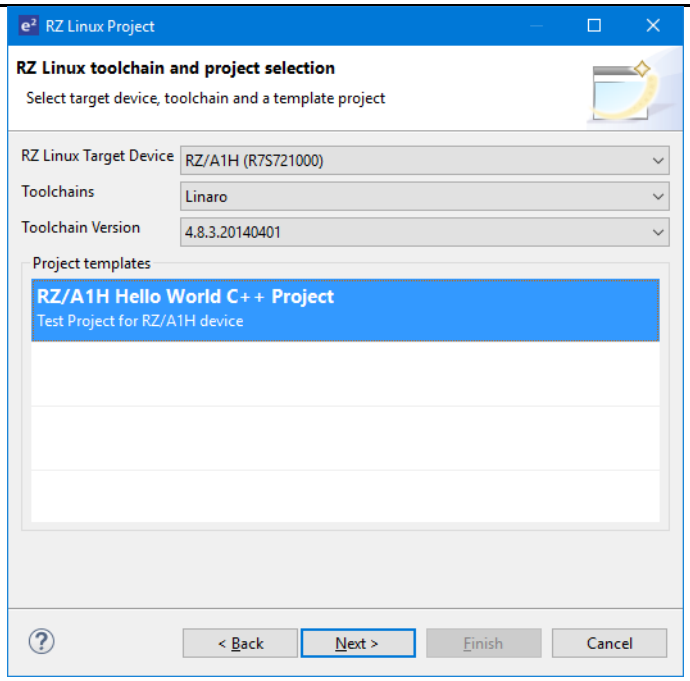

| | | |
|---|---|---|
| Synergy Application Project Generator for using SSP Library | Synergy | A new project type has been added for Synergy to assist you in generating an application project setup for using an existing Synergy Software Platform (SSP) library.<br><br>It is available here:<br>  <br><br><br>The library must exist in the workspace you are using. These libraries will then appear within the wizard for selection.<br><br>When selected the include paths that are required for setup are automatically displayed: |

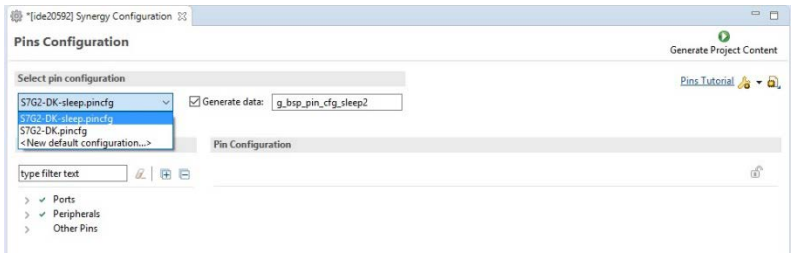
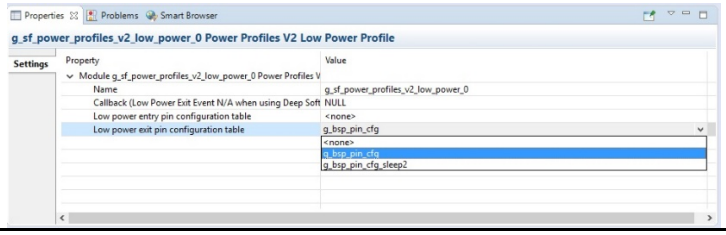


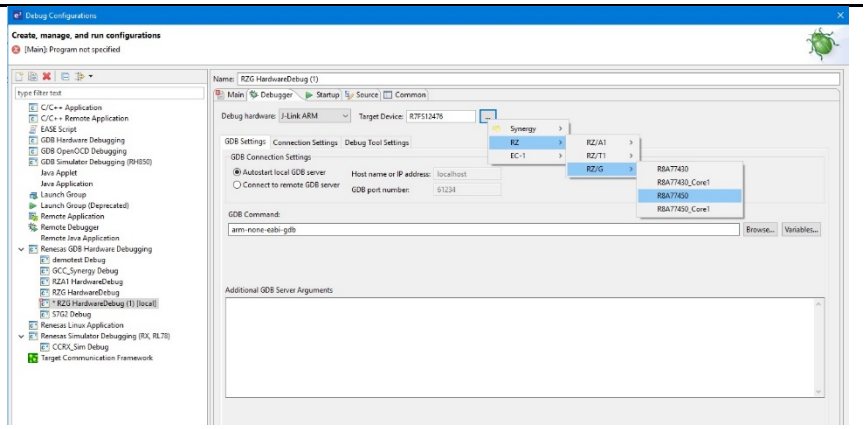

When Finish is clicked then the project is created with the build setting all ready to use the Synergy library.

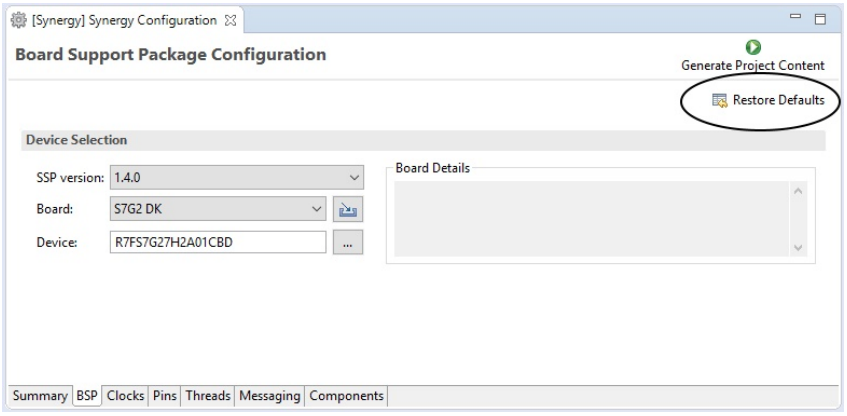
| | | |
|---|---|---|
| RZ/A Linux Target Debug | RZ | Linux target OS application debugging is supported. This is achievable with Ethernet and Serial connections to the target board.<br><br>This project type is available from the RZ Linux C/C++ project type. See below: |

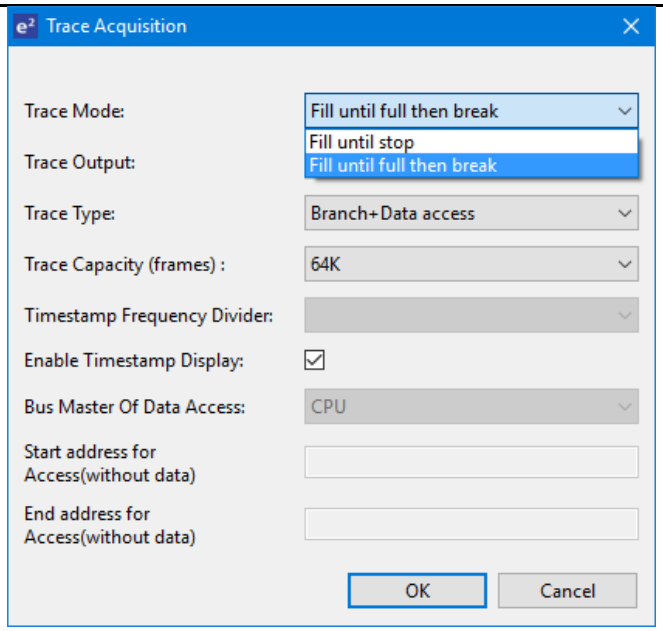


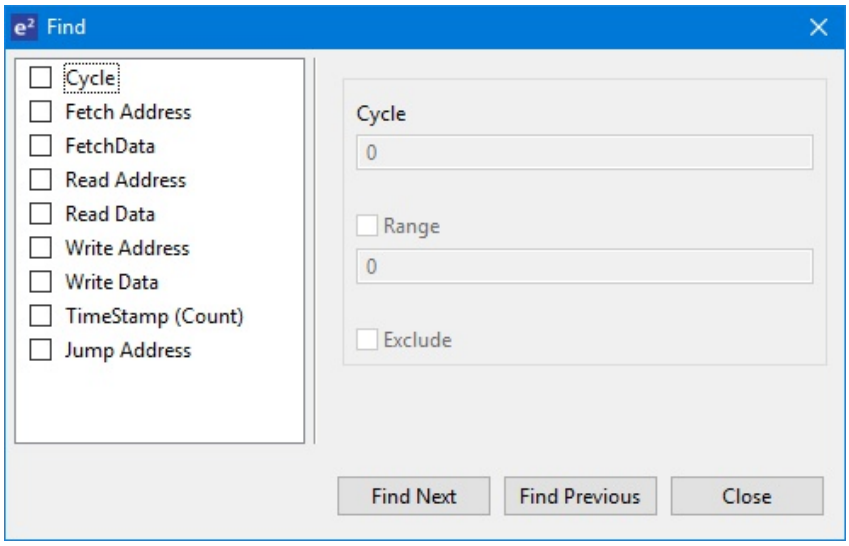


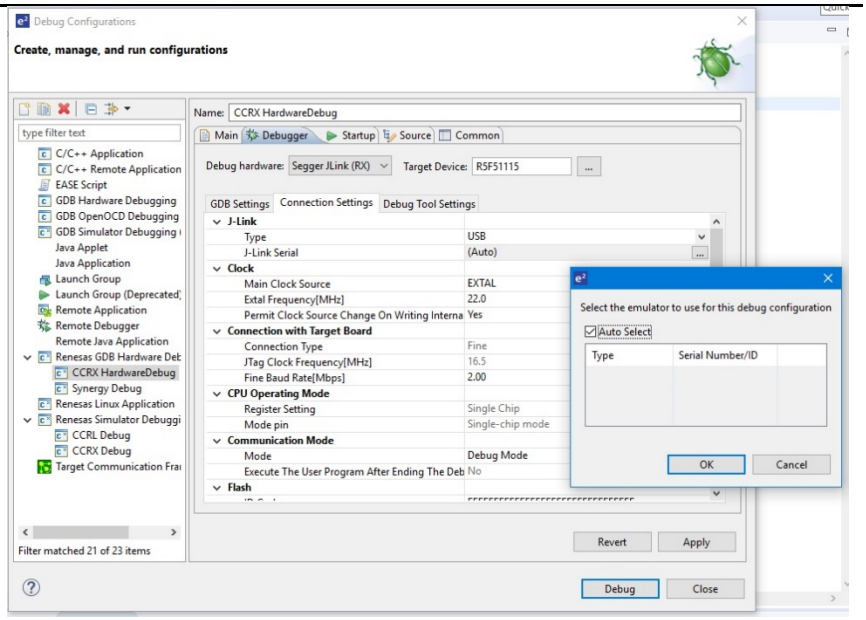

| | | |
|---|---|---|
| Ensure Synergy pin structures are available as enum in properties window | Synergy | Pin configurations setup in the Synergy pin view are now made available in the properties window.<br><br>The generated data file name as listed in the pins view is made available In the Power Profile pin configuration properties page. See below:<br><br>  <br><br><br>  <br> |
| RZ/G Segger J-Link Debugging | RZ | The RZ debugger has been updated to also allow connection to the RZ/G device family via J-link Note, there is no project generation support to automatically create this configuration.<br><br>The RZ/G devices are available for selection in the “Renesas GDB Hardware Debugging” debug configuration category. |

| | | |
|---|---|---|
| | |  |
| E2 Emulator Debugging | RX, RL78, RH850 | E2 emulator support has been added for the RZ, RL78 and RH850 device families. Debugging function is the same as the E1 Emulator. |
| CCRL Compiler | RL78 | The CCRL V1.07 compiler for RL78 is now supported. |
| Eclipse Platform & CDT | | This version of e² studio is based on Eclipse Oxygen.3 and CDT 9.4. This release note does not describe the Eclipse framework and CDT plugin issues and fixes. You can find the detailed information on the sites below:<br><br>For information on the Neon release see here:<br>https://projects.eclipse.org/releases/oxygen<br><br>CDT:<br>Please see New and Noteworthy for CDT here:<br><br>https://wiki.eclipse.org/CDT/User/NewIn93<br>https://wiki.eclipse.org/CDT/User/NewIn94<br><br>The Eclipse bug tracker is here:<br>https://bugs.eclipse.org/bugs/ |
| Memory Usage View | Synergy and RZ | When supported by updated device support files in e² studio or the Synergy Software Platform (SSP) the Memory Usage View now supports the graphical view to show usage in the ROM and RAM memory areas. |
| Simulator RL78 Advanced Debugging | RL78 | The RL78 Simulator support has been enhanced to support Profile, Trace and Coverage views. |
| GNU ARM Eclipse Plugins | Synergy and RZ | The GNU ARM Eclipse plugins have been updated to a newer revision.<br>The version included is Version: 2.6.1.201806250952<br><br>This plug-in is part of the GNU MCU Eclipse project.<br>For more details, visit <http://gnu-mcu-eclipse.github.io> |
| Synergy Software Platform Network Install | Synergy | A new feature has been added which makes it much easier to install SSP in a shared network location and point your e² studio installation at that rather than using a local install folder for the SSP pack files. |

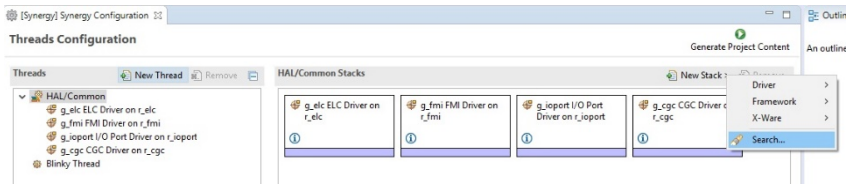
| | | |
|---|---|---|
| | | This can be achieved by opening the file (eclipse/e2studio.ini) in a text editor and adding the following line at the end of the file:<br><br>-Dcom.renesas.synergyPacksFolder=\\myServer\myPath\to\packs<br><br>On start-up e² studio will read the installed packs from this location rather than the packs folder underneath the application folder. |
| Synergy Editor | Synergy | The Synergy editor has a new feature to restore the BSP properties back to default values. This can be seen in the image below:<br><br>  |
| Synergy Editor | Synergy | In previous versions of e² studio the files which hold the configuration data values for the Synergy modules were copied to the project directory in the folder .moduledescriptions.<br><br>This allowed you to still use the project when the required SSP pack was not installed. However, it also increased the project directory size.<br><br>From this version of e² studio the .moduledescriptions are now stored once at an application level. If you import and existing project into the latest e² studio it will continue to use the .moduledescriptions in your project. If for some reason this is not available or you create a new project the editor will use the application stored .moduledescriptions. |
| Trace | RX, RL78, RH850 | When using the trace view a new feature has been added to break the execution when the trace buffer is full. This feature is available for:<br><br>• RX (E1, E20, E2, E2 LITE, EZ, Simulator)<br>• RL78 (IECUBE, Simulator)<br>• RH850 (E1)<br><br>The feature is available from the trace view within the Trace Acquisition dialog: |



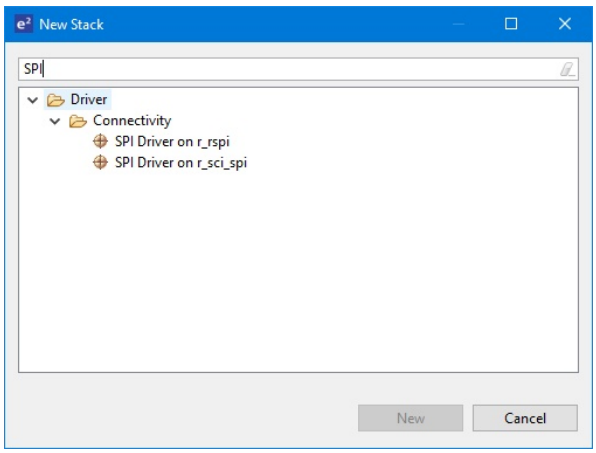

| | | |
|---|---|---|
| Trace | RL78, RH850 | The find trace feature has been enhanced to fully utilise the features in the RL78 and RH850 debugger.<br><br>This functionality is available from the trace view:<br><br>  |
| Segger J-Link Support | RX | The Segger J-Link debug configuration for RX device support has been improved to allow automatic connection or specific emulator connection. |




| | | |
|---|---|---|
| Synergy Editor – Threads Tab | Synergy | To improve usability the add new Synergy module functionality on the threads page has been improved. There has been a new “Search…” menu added to the “New Stack” menu hierarchy. See below: |

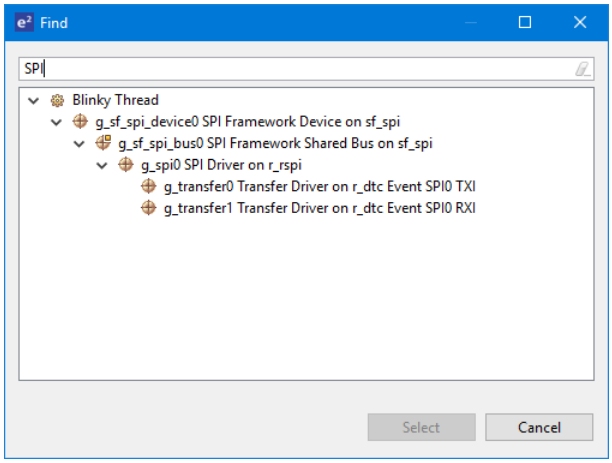


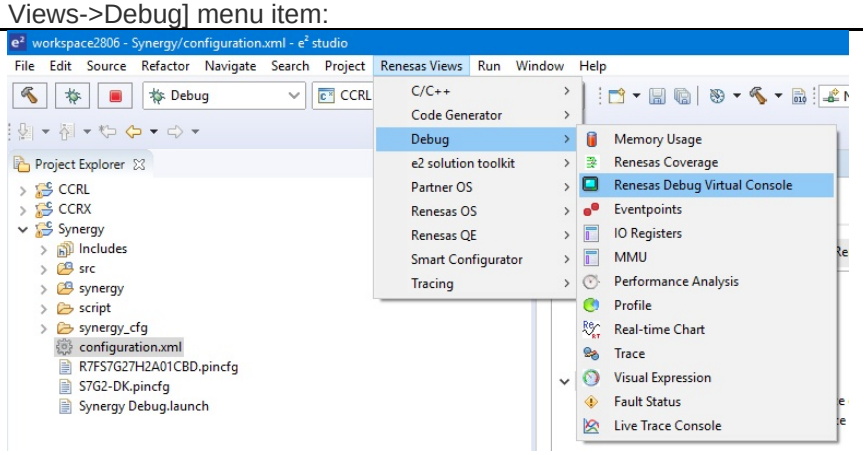

Clicking this menu item then opens a dialog allowing you to search and filter on the available SSP modules. In the example below, we have entered SPI and this is the result:

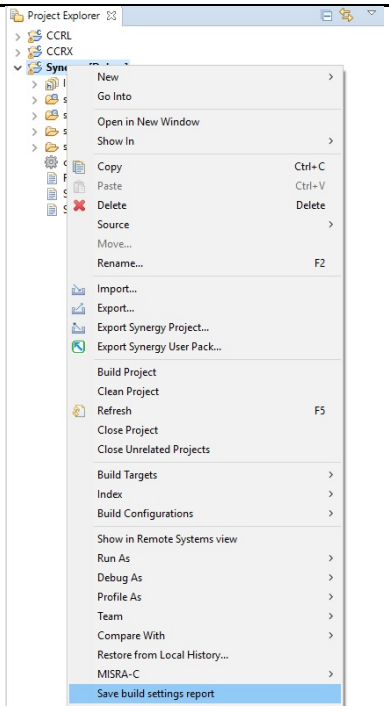


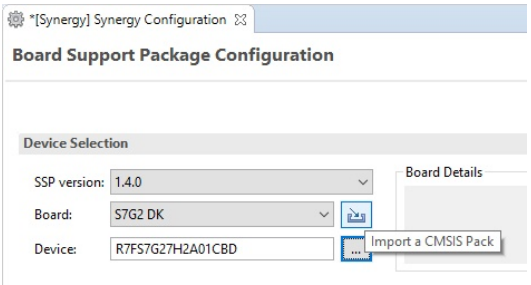

In addition to this functionality a search of software stacks already created has also been implemented. This can be accessed by using the CTRL+F shortcut or [Edit->Find] menu when the Threads tab is focused. A dialog is shown with your configured stacks.

Then when you type a search condition the matching parts of the software stack are shown. Selecting the correct module and pressing the “Select” button then automatically highlights the module in the Threads Page.

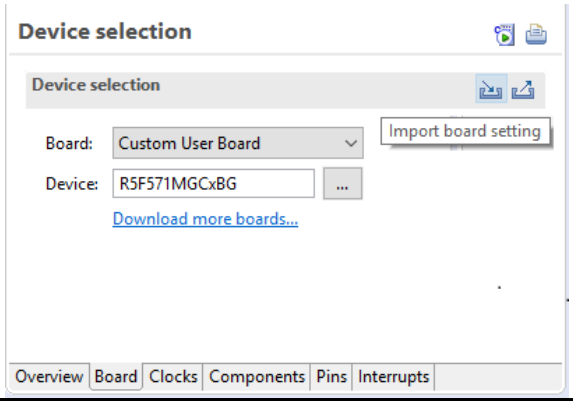



| | | |
|---|---|---|
| Synergy Debugger | Synergy | When the Synergy debugger reaches an interrupt in older versions of e² studio the call stack within the debug view was not populated with as much information as possible.<br><br>In the latest version the call stack is more complete allowing the user to see a more complete call stack in the interrupt use case. |
| Debug Console | All | In previous versions of e² studio some users have struggled to find the debug console functionality. This provides support for customers to use this as a virtual serial input/output channel for RX. It is also used for semihosting support for ARM.<br><br>Previously the view was embedded within the console view of e² studio. Now the view has been moved underneath the [Renesas Views->Debug] menu item:<br><br>  <br><br><br>All other functionality is the same but more customers should be able to discover the view and its functionality. |
| Build Settings Report | All | The Build Settings Report has been improved to include all options and order the options in the same way as the user interface. This should enable checking the options against the report to be much easier. |




| | | |
|---|---|---|
| Synergy Editor | Synergy | A link to the import CMSIS component has been added to the BSP tab of the Synergy editor. This is to improve accessibility of the import CMSIS component functionality when wanting to add a custom board to the IDE.<br>  <br> |
| Partner OS Improvement | All | Numerous improvements have been made to the Partner OS plugin:<br>• Added ability to set thresholds and this data to then be saved and restored for future debug sessions.<br>• When stacks reach threshold or overflow, popup messages will be displayed to notify user about the stacks reaching their thresholds.<br>• Added context menu and toolbars for setting thresholds<br>• Added sort feature to the stack graph column within the stack tab. |
| Smart Configurator | RX | Smart Configurator has been updated to support RX110, RX111 and RX113.<br><br>In previous versions of e² studio, BSP version mismatch occurred when user downloads the newly updated FIT modules from website. From this version, Smart Configurator will be able to update BSP to the latest version. So, user can use the newly updated FIT modules with the correct BSP dependencies at ease.<br><br>Importing and exporting board information has been supported. Clock and pins can be configured for specific board by importing board description file. |

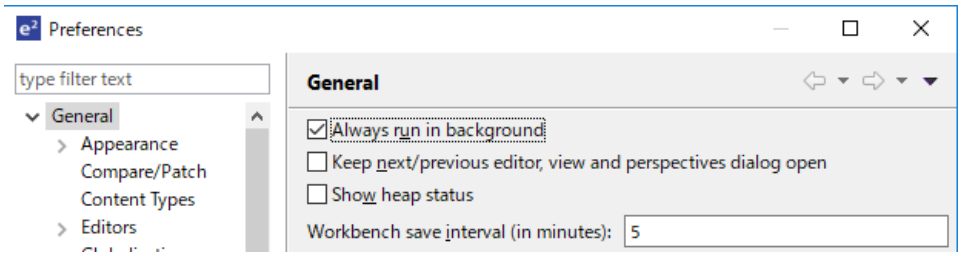
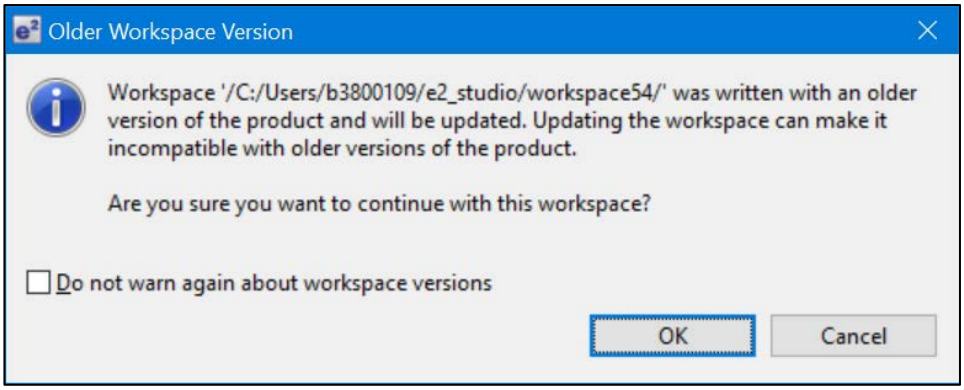
Board description files for Renesas Starter Kit can be downloaded using Smart Configurator. Clock and pin settings modified using Smart Configurator can also be exported as user board description file.

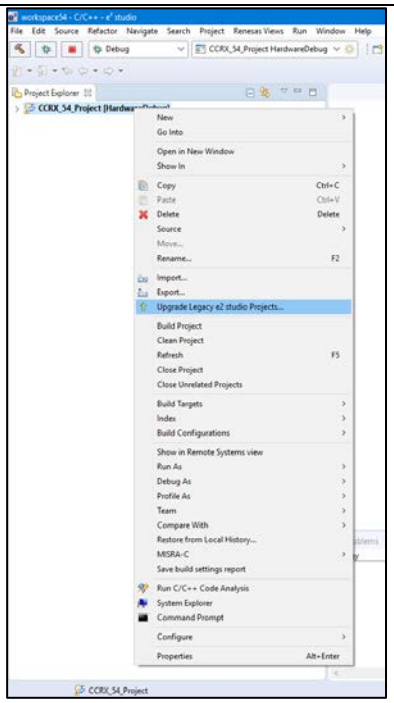


## 5. Useful workarounds and information for 7.0.0

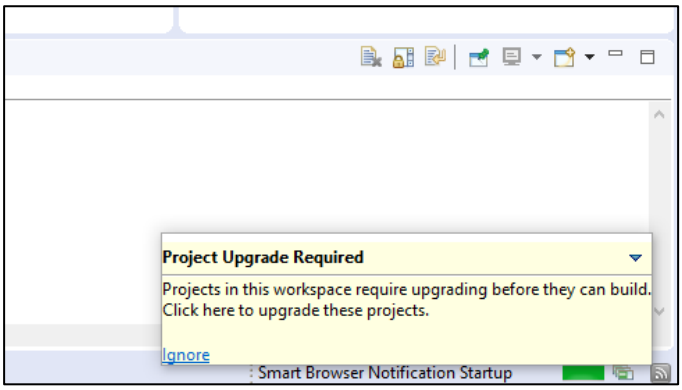
Please visit the Renesas FAQ for e² studio for the latest up to date information:

Online FAQ link.

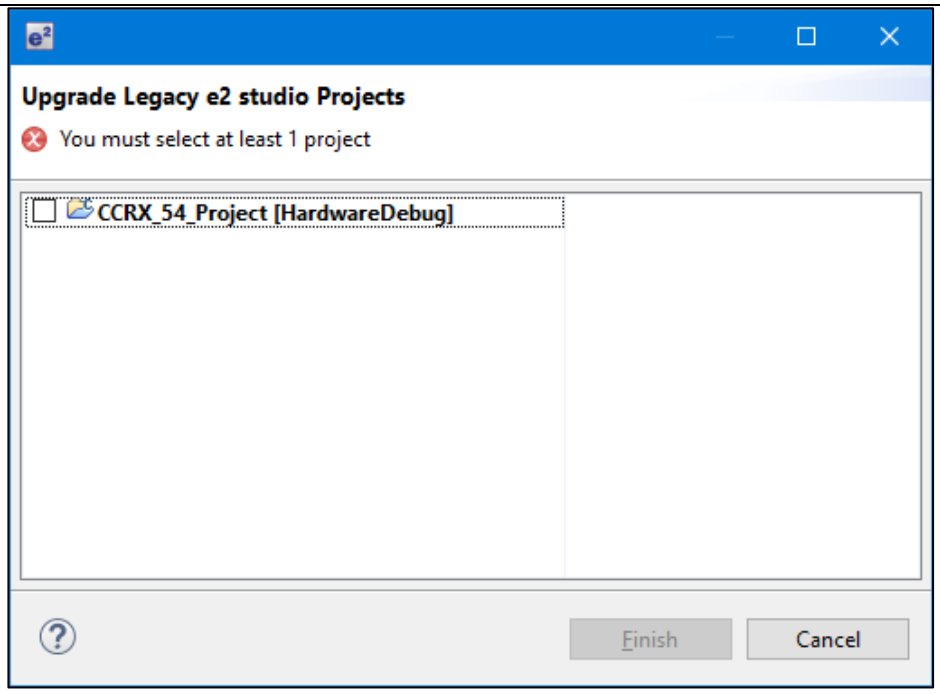
| ID | Component | Workaround or information |
|---|---|---|
| | Progress dialog | The default option of progress dialog settings in Eclipse has been modified. This will ensure all updates happen in the background and no dialog shown in the foreground when updating.<br><br>To restore foreground updates, please disable this option on the General preference page to show a progress dialog for long-running operations.<br><br>  |
| | SH support | The Renesas SH device family is no longer supported in e² studio.<br><br>If you need to use the SH device support please use e² studio 5.4 or earlier. |
| | Importing old projects into 6.x | All projects being migrated into the latest e² studio from e² studio 5.4 and earlier versions will need to be migrated to the new builder plugins. The new builder plugins have different user interface pages and different option IDs.<br><br>Upon opening an older workspace, the following dialog would be displayed:<br><br>  <br><br>Clicking OK will update the workspace to the newer e² studio.<br><br>Importing an existing project to the workspace or opening a workspace with old projects will automatically start the legacy project upgrade procedure.<br><br>If for some reason this process does not start it is also possible to launch the “Upgrade Legacy of e2 studio Projects…” from the project context menu. |




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




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

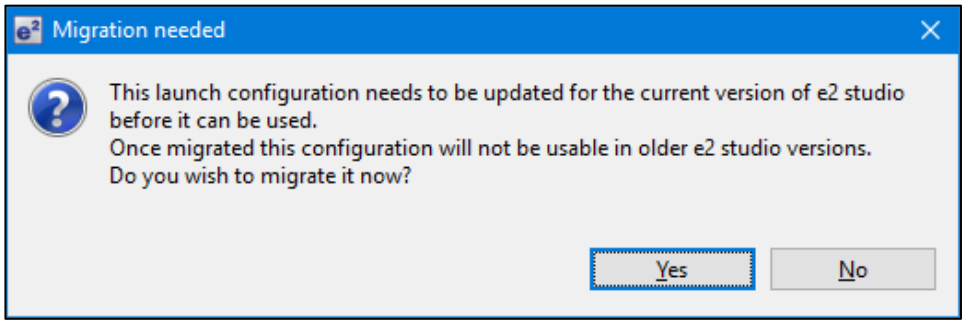



To upgrade the project, click the corresponding check box and then click Finish. Note, this will update the project to the latest build plugins and options. Before doing this you should ensure your project is backed up as this operation is not reversible.

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

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

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



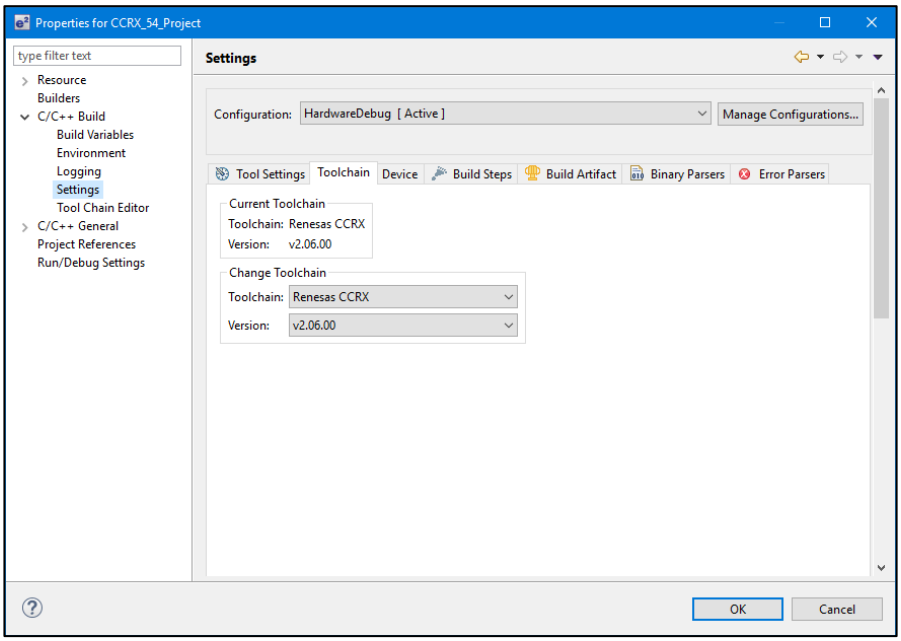

Please ensure that your projects are backed up or in revision control before migration allowing you to return to older versions if required.

Toolchain Management

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

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

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




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

RZ Toolchain

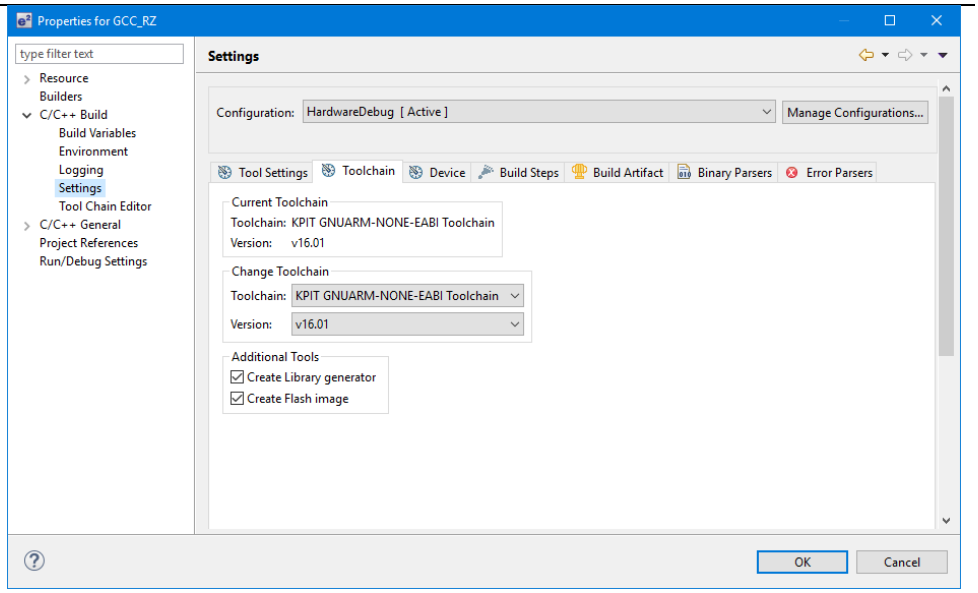
The now legacy KPIT GNU ARM-NONE toolchain is still supported within the e² studio product but now using the gnuarmeclipse plugins.

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

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

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

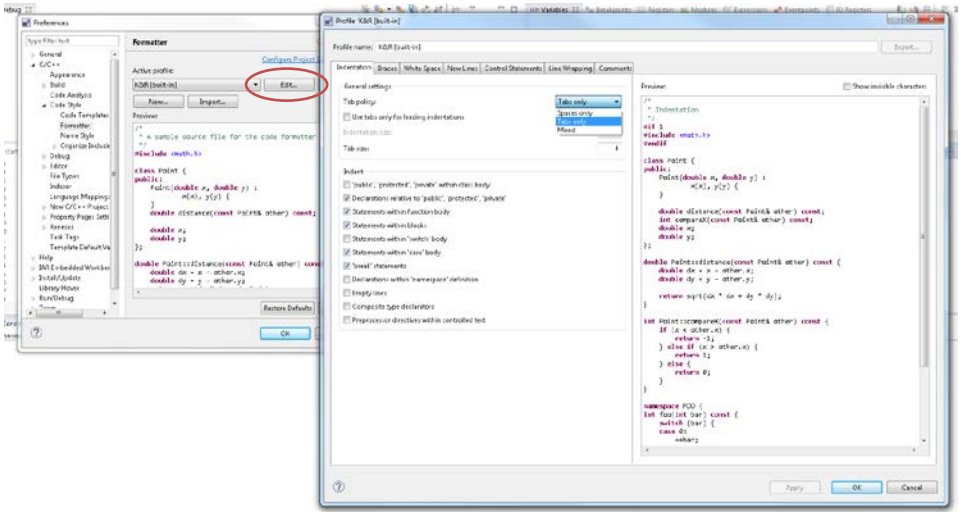
Once integrated it is possible to integrate the library generator from the toolchain tab of the build settings page.




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

| | | |
|---|---|---|
| | QE compatibility | If QE for TCP/IP V1.0.0 is used, please update it to V1.0.1.<br>Other QE series can be used with e² studio 6.0.<br><br>What is QE?<br>https://www.renesas.com/products/software-tools/tools/solution-toolkit/qe.html<br><br>Details of QE for TCP/IP<br>https://www.renesas.com/products/software-tools/tools/solution-toolkit/qe-qe-for-tcp-ip.html |
| 5954 | Application | If you experience the error message “org.eclipse.swt.SWTError: No more handles” this can be caused by certain multi-monitor software and the Eclipse framework.<br><br>If this error occurs there are 2 workarounds:<br><br>1. Use a single monitor display.<br>2. Uninstall the multiple monitor software from your graphics chipset vendor and revert to the standard Windows multi-monitor feature. |
| 6981 | RL78 Debugging | When debugging IAR C source file with an OCD emulator (E1), the Monitor program area (0x00002-0x00003) is used.<br><br>So this area must be excluded from usable address space. Please add '-HFF' in the linker option.<br><br>- Open Property.<br><br>- Select [C/C++ build]-[Settings] at left side.<br><br>- Select 'IAR RL78 Xlink linker' at right side, add '-HFF' at the textbox 'command'.<br><br>Not doing this will cause problems with connection and download when using interrupts. |
| NA | Application | If you are experiencing slow building of projects within e² studio there are some possibilities to improve. |

| | | |
|---|---|---|
| | | The system environment will attempt to find the make.exe tool via the system environment. If you ensure the directory make resides in is at the start of the path variable it will find it more quickly. Especially important if there are network drives in the path.<br><br>In the project properties, C/C++ Build tab, behavior tab you can switch on parallel build. This will take advantage of the multi-cores on your host machine if it has them. |
| NA | RZ GCC | In 3.0 the KPIT GCC RZ toolchain was supported at version 14.01. This version is no longer supported within e² studio.<br><br>KPIT modified the name of their ARM toolchain to be ARM-none-eabi to follow standard ARM naming convention like other GCC toolchain vendors.<br><br>The ARM-none toolchain is available at versions 14.01, 14.02 and 16.01 from the www.gcc-renesas.com website. The binaries in the 14.01 version are identical to those used in the 14.01 RZ toolchain.<br><br>Once the toolchain is installed your projects will be imported and ported to ensure there is as little disruption as possible due to this change. |
| NA | KPIT GCC | The KPIT toolchains are now no longer supported by the www.kpitgnutools.com website. Support is now available from the www.gcc-renesas.com website.<br><br>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.<br><br>Both integrate into e² studio and can be selected from the project wizard. |
| 2010 | HEW Importer | Symptoms: Project fails to build after importing a legacy project from HEW<br><br>Conditions: If a long filename or path is used, and the HEW project importer is used, the project may fail to build.<br><br>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 e² studio. |
| 1922 | Application | Symptoms: Project fails to build in first instance after archive project import (not from HEW)<br><br>Conditions: If an archived project is imported, it may fail to build the first time, due to a residual .d file.<br><br>Workaround: Clean and Build a second time. |
| NA | Eventpoints | If eventpoints do not always work just after they are set, you can use the "Apply to Target" toolbar button in the Eventpoint view to send the Eventpoints to the target manually. This will always ensure the debugger target has all the required eventpoint updates before execution starts. |
| 5772 | IAR Plugins | The IAR Plugin Manager is included in e² studio and provides support for RX, RL78, RH850 and RZ (ARM).<br><br>This tool, simplifies installation and configuration of IAR toolchain plugins. You can access this though Help -> IAR Embedded Workbench plugin manager. |

| | | |
|---|---|---|
| 7524 | RZ/T1 Debugging | In a RZ/T1 RAM-based project, the "Reload" function does not work.<br>Reloading or re-downloading during debugging resets the device and the RAM content is erased.<br>To continue the debugging, disconnect and connect the debugger again. |
| | Use spaces as tabs | Eclipse and CDT both have settings for use spaces as tabs. The option on the Editor preferences page conflicts with the CDT formatter settings.<br>To change the use spaces as tabs option in e² studio please use this page:<br>  |
| | Installer problems | In some situations, the AVG virus checker appears to interfere with the e² studio installation process. If you experience such a problem, please temporarily disable the AVG tool and try the installation again. |
| | Antivirus | In some situations, the Norton anti-virus tool can interfere with the building of Renesas Synergy projects. If possible, please disable the antivirus program when building Renesas Synergy projects on systems with Norton Antivirus installed. |
| | Green Hills RH850 Projects | When debugging the RH850 object built with the Green Hills compiler in e² studio, specify the following option for the compiler option.<br>-gtws<br>The GUI setting menu is as follows.<br>[GHS C Compiler for V800 Standalone]-[Debugging Option]<br>"Generate Target-Walkable Stack" -> On<br>If this option is not specified, Step Over and Step Return may not work properly. |
| 17052 | Debugging | When debugging using a project with duplicate filenames that are located in different source folders problems can be seen with breakpoint setting.<br>When a breakpoint is set at a source line in this file it will also stop at the same source line in the other same named file when execution passes through. |
| 18505 | RZ debugging | When debugging with RZ/T1 in certain situations you may experience problems stepping:<br>If the following conditions are met:<br>1. Code is located close to address 0x0<br>2. There is very little library code included into the project<br>3. There are unused functions in the program |

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

e.g.

C:\Renesas\e2_studip\eclipse\plugins\com.renesas.cg_2.11.0.v20180601-1047\CodeGenerator\Tools\register COM.bat

## 6. Open Issues in 7.0.0

Open issues in the e² studio 7.0 product will be kept up to date here:

Please visit to see the latest open issue list.

# 7. Appendix

## 7.1 Website and Support

Renesas Electronics Website
http://www.renesas.com/

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

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(Rev.4.0-1 November 2017)

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