

【通知】

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E2 仿真器可通过使用 CAN 通信时间测量解决方案，
减少解决问题所需的时间并提升速度

概述

本文件概述了基于“提高开发效率”这一概念的高级片上调试仿真器（E2 仿真器），并介绍了 RH850 产品家族的 CAN 通信时间测量解决方案。使用 E2 仿真器可快速解决 CAN 通信响应时间相关的问题。

1. E2 仿真器概述

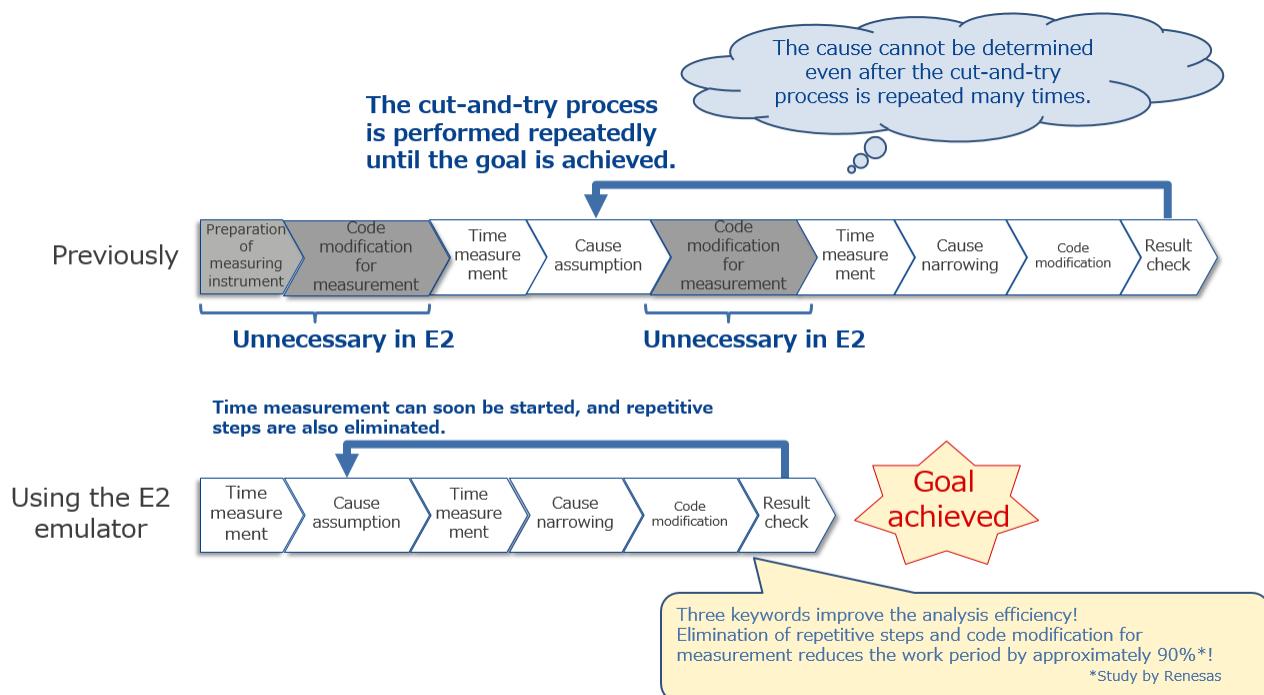
E2 仿真器是基于“提高开发效率”这一概念开发的一款新一代片上调试仿真器和闪存编程器。该仿真器的最大下载速度是 E1 仿真器的两倍。除了本文件中介绍的 CAN 通信时间测量解决方案，E2 仿真器还可与各种解决方案结合使用来进一步减少开发时间。

有关 E2 仿真器的详细信息，请参见下面的 URL 地址。

<https://www.renesas.com/e2>

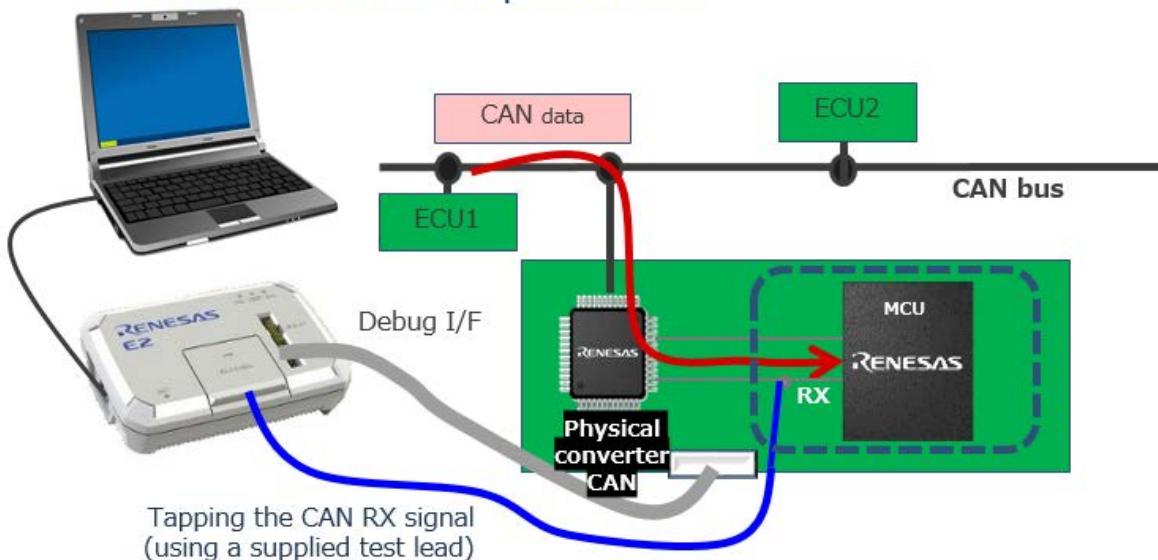
2. CAN 通信时间测量解决方案

E2 仿真器的三个关键词是“易于测量”、“无数据丢失”和“快速识别”，可提高 CAN 通信响应时间的分析效率。



- 易于测量

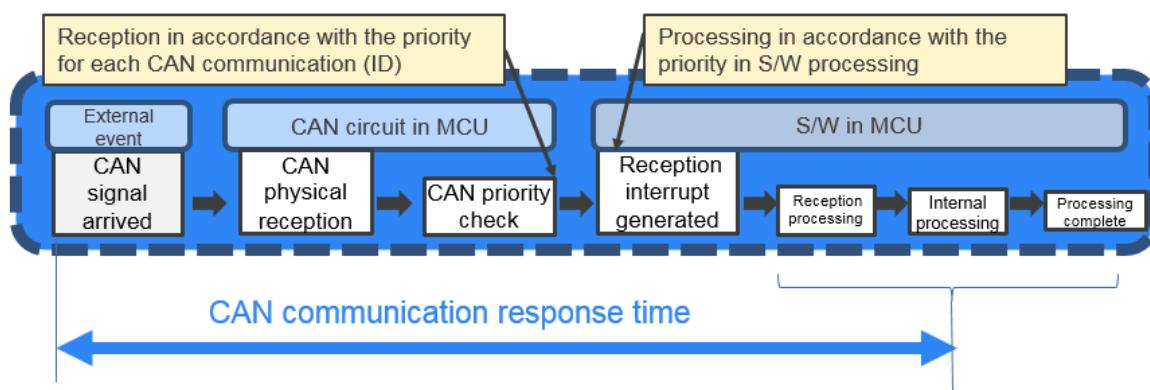
The E2 emulator can singly and easily measure the CAN communication response time.



E2 仿真器无需使用昂贵的 CAN 分析仪，可独立轻松测量响应时间，这对 CAN 通信非常重要。
测量时只需使用提供的测试引线将 E2 仿真器连接到 MCU RX 信号即可。

- 无数据丢失

Breaking the program is possible in the case of "set time < CAN communication response time".



如果用户指定的 CAN 通信响应时间超过设定值，E2 仿真器可以停止程序。

- 快速识别

Checking trace data from the measurement end point to locate a problem

Trace result

```

Trace
Number Time (h:min:s.ms,us,ns) Line Number/Address Source/Disassemble
1251 00h00min00s000ms000μs000ns main.c#218 PORT_APO    4= 0x0002;
1252          0x00000136a      +186    mov sp, r6
1252-1     main.c#222 CommandExec(rcv_data);
1252-1     0x00000136c      +188    jari _CommandExec, lp
1252-2     main.c#241 _CommandExec:
1252-2     00h00min00s000ms000μs087ns 0x0000013d8 void CommandExec( unsigned long* rc
1254     00h00min00s000ms000μs025ns      +0      ld.w 0x0(r6), r2
1255     main.c#246      switch( rcv_data[0] ) {
1255          0x0000013dc      +4      cmp 0x5, r2
1255-1     main.c#246      switch( rcv_data[0] ) {
1255-1     0x0000013de      +6      bnz _CommandExec+0x16
1255-2     main.c#262      }
1255-2     00h00min00s000ms000μs050ns 0x0000013ee      +22      jmp [lp]
1256     main.c#224      _INTRCAN5REC:
1256     00h00min00s000ms000μs050ns 0x000001370      inst_dbtag_0x21();
1257     main.c#224      +192      dbtag 0x21
1257     inst_dbtag 0x21();

```

CAN communication history

[Time]	[Type]	[Contents]
0h 00m 00s 251ms 452us 316	CAN	ID=0x3E6 DLC=0x8 DATA=0xE603000000
0h 00m 00s 251ms 702us 425	CAN	ID=0x3E7 DLC=0x8 DATA=0xE703000000000000 Ack=0
0h 00m 00s 251ms 946us 958	SWTrace	DBTAG 0x021

Measurement end point of the CAN communication response time

通过从 CAN 通信历史记录中查找 CAN 通信响应时间的测量终点，然后检查测量终点的跟踪数据，可以快速找出程序中的问题。

3. 如何购买产品

关于产品订购，请联系您当地的瑞萨电子营销办事处或经销商，并提供以下信息。

关于产品定价，请按照相同的方式进行咨询。

产品名称	E2 仿真器
可订购部件名称	RTE0T00020KCE00000R

修订记录

Rev.	发行日	修订内容	
		页	要点
1.00	Jul. 01, 2018	-	初版发行

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TS Colophon 2.1