

# SSP v1.4.0 Developer Examples

Release Note

Renesas Synergy™ Platform  
Synergy Software  
SSP v1.4.0

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## 1. Introduction

This document contains the release notes for the Renesas Synergy™ Software Package (SSP) version 1.4.0 Developer Examples.

## 2. Release Information

<b>SSP Release Version</b>	v1.4.0
<b>Release date</b>	May 28, 2018

Note: Default pack while importing any developer example would be SSP v1.4.0.

## 3. Synergy MCUs Supported

MCUs from the S7G2, S5D9, S3A7, S3A6, and S124 Groups

## 4. SSP Examples and Hardware Kits Supported

This release ported Developer Examples to the SSP v1.4.0 and tested with applicable hardware kits. The following table indicates the software version and hardware kits tested with the Developer Examples.

Kits	Developer Examples Tested		SSP Version
	Driver APIs	Framework APIs	
DK-S7G2	35	18	v1.4.0
SK-S7G2	29	10	v1.4.0
PK-S5D9	25	10	v1.4.0
DK-S3A7	33	9	v1.4.0
TB-S3A6	13	2	v1.4.0
DK-S124	24	5	v1.4.0

Table 1 lists 38 SSP driver examples and Table 2 lists 19 SSP framework examples. Each table lists the SSP functional group and the hardware kits tested with each example.

Note: Examples that have not been developed for the target board have one of the following reason codes assigned:

- NP: No Peripheral. Peripheral required to test the Developer Example is not available on the board.
- NS: Not Supported. MCU does not support the feature.

**Table 1 SSP Driver Developer Examples**

Ref	Functional Group	Driver Examples	Verified on					
			DK-S7G2	SK-S7G2	PK-S5D9	DK-S3A7	TB-S3A6	DK-S124
		<b>APIs available</b>	<b>(35)</b>	<b>(29)</b>	<b>(25)</b>	<b>(33)</b>	<b>(13)</b>	<b>(24)</b>
1	Analog 2 APIs	r_adc	✓	✓	NP	✓	NP	✓
2		r_dac	✓	✓	✓	✓	NP	✓
3	Connectivity 8 APIs	r_sci_i2c	✓	✓	✓	✓	NP	✓
4		r_sci_spi	✓	NP	NP	✓	NP	NP
5		r_ioport	✓	✓	✓	✓	NP	✓
6		r_rsipi	✓	NP	NP	✓	NP	✓
7		r_riic	✓	✓	NS	✓	NP	NS
8		r_sci_uart	✓	NP	NP	✓	NP	NP
9		r_ssi	NP	NP	NP	✓	NP	NP
10		r_riic_slave	✓	✓	NP	✓	NP	NP
11		r_pdc	✓	NP	NP	NS	NP	NS

Ref	Functional Group	Driver Examples	Verified on					
			DK-S7G2	SK-S7G2	PK-S5D9	DK-S3A7	TB-S3A6	DK-S124
12	Graphics 4 APIs	r_jpeg	✓	✓	✓	NS	NP	NS
13		r_slcdc	NP	NP	NP	✓	NP	NP
14		r_glcdc	✓	NP	NP	NS	NP	NS
15	Input 2 APIs	r_kint	✓	✓	✓	✓	NP	✓
16		r_icu	✓	✓	✓	✓	NP	✓
17	Monitoring 5 APIs	r_crc	✓	✓	✓	✓	✓	✓
18		r_wdt	✓	✓	✓	✓	✓	✓
19		r_iwdt	✓	✓	✓	✓	✓	✓
20		r_doc	✓	✓	✓	✓	✓	✓
21		r_cac	✓	✓	✓	✓	✓	✓
22	Power 5 APIs	r_lpm	✓	✓	✓	✓	NP	✓
23		r_lvd	✓	✓	NS	✓	NP	✓
24		r_lpmv2_sleep	✓	✓	✓	✓	NP	✓
25		r_lpmv2_standby	✓	✓	✓	✓	NP	✓
26		r_lpmv2_deepstandby	✓	✓	✓	NS	NP	NS
27	Storage 4 APIs	r_flash_hp	✓	✓	✓	NS	NP	NS
28		r_flash_lp	NS	NS	NS	✓	NP	✓
29		r_qspi	✓	✓	✓	✓	NP	NS
30		r_sdmmc	✓	NP	NP	✓	NP	NS
31	System 2 APIs	r_fmi	✓	✓	✓	✓	✓	✓
32		r_elc	✓	✓	✓	✓	✓	✓
33	Timers 4 APIs	r_gpt	✓	✓	✓	✓	✓	✓
34		r_rtc	✓	✓	✓	✓	✓	✓
35		r_agt	✓	✓	✓	✓	✓	✓
36		r_input_capture	✓	✓	✓	✓	✓	✓
37	Transfer 2 APIs	r_dmac	✓	✓	✓	✓	✓	NS
38		r_dtc	✓	✓	✓	✓	✓	✓

**Table 2 SSP Framework Developer Examples**

Ref	Functional Group	Framework Examples	DK-S7G2	SK-S7G2	PK-S5D9	DK-S3A7	TB-S3A6	DK-S124
	<b>APIs available</b>		<b>(18)</b>	<b>(10)</b>	<b>(10)</b>	<b>(9)</b>	<b>(2)</b>	<b>(5)</b>
1	Analog	sf_adc_periodic	✓	NP	NP	✓	NP	✓
2	Audio through DAC	sf_audio_playback	✓	NP	NP	✓	NP	NP
3	Audio through I2S	sf_audio_playback	NP	NP	NP	✓	NS	NP
4	Connectivity 3 APIs	sf_el_ux_comms	✓	NP	NP	✓	NP	NP
5		sf_i2c	✓	NP	NP	NP	NP	✓
6		sf_spi	✓	NP	NP	✓	NP	✓
7	File System	sf_el_fx	✓	NP	NP	✓	NP	NS
8	Graphics	sf_jpeg_decoder	✓	NP	NP	NP	NP	NS
9	Input 2 APIs	sf_external_irq	✓	✓	✓	✓	NP	✓
10		sf_touch_panel_i2c	✓	✓	✓	NP	NP	NS
11	Netx™-DHCP-Client	netx_dhcp_client	✓	✓	✓	NP	NP	NS
12	NetX-DHCP-Server	netx_dhcp_server	✓	✓	✓	NS	NS	NS
13	NetX-DNS	nx_dnsclient	✓	✓	✓	NS	NS	NS
14	NetX-HTTP-Client	netx_http_client	✓	✓	✓	NS	NS	NS
15	NetX-HTTP-Server	netx_http_server	✓	NP	NP	NS	NS	NS

Ref	Functional Group	Framework Examples	DK-S7G2	SK-S7G2	PK-S5D9	DK-S3A7	TB-S3A6	DK-S124
16	NetX-SMTP	nx_smtpclient	✓	✓	✓	NS	NS	NS
17	NetX-Telnet-Server	Netx_telnet_server	✓	✓	✓	NS	NS	NS
18	Services 2 APIs	sf_message	✓	✓	✓	✓	✓	NP
19		sf_thread_monitor	✓	✓	✓	✓	✓	✓

## 5. SSP v1.4.0 Developer Examples Release Summary

**Table 3 SSP Developer Examples Documents**

Ref	Doc no.	Module	APIs
1	r11an0144eu0103	Analog Drivers (A/D Converter)	r_adc and r_dac
2	r11an0149eu0103	Analog Framework	sf_adc_periodic
3	r11an0150eu0103	Audio Playback Framework (DAC)	sf_audio_playback_hw_dac
4	r11an0197eu0103	Audio Playback Framework (I2S)	sf_audio_playback_hw_i2s
5	r11an0152eu0103	Connectivity Drivers	r_ioport, r_sci_spi, r_rspi, r_sci_i2c, r_riic, r_sci_uart, and r_riic_slave
6	r11an0233eu0102	Connectivity SSI Driver	r_ssi
7	r11an0153eu0103	Connectivity Framework	sf_i2c, sf_spi, and sf_el_ux_comms
8	r11an0154eu0103	FileX® Framework	sf_el_fx
9	r11an0201eu0102	GLCDC Driver	r_glcdc
10	r11an0155eu0103	Graphics Driver	r_jpeg, r_pdc, and r_slcdc
11	r11an0156eu0103	Graphics JPEG Decode Framework	sf_jpeg_decoder
12	r11an0198eu0102	Input Driver	r_kint and r_icu
13	r11an0157eu0103	Input Framework	sf_external_irq and sf_touch_panel_i2c
14	r11an0158eu0103	Monitoring Driver	r_crc, r_wdt, r_iwdt, r_doc, and r_cac
15	r11an0170eu0103	NetX DHCP Client Framework	netx_dhcp_client
16	r11an0159eu0103	NetX DHCP Server Framework	netx_dhcp_server
17	r11an0160eu0103	NetX DNS Client Framework	nx_dnsClient
18	r11an0161eu0103	NetX HTTP Client Framework	netx_http_client
19	r11an0162eu0103	NetX HTTP Server Framework	netx_http_server
20	r11an0163eu0103	NetX SMTP Client Framework	netx_smtpclient
21	r11an0164eu0103	NetX Telnet Server Framework	netx_telnet_server
22	r11an0165eu0103	Low Power Mode Driver	r_lpm and r_lvd
23	r11an0199eu0102	LPMV2 mode	r_lpmv2_standby, r_lpmv2_sleep, and r_lpmv2_deepstandby
24	r11an0166eu0103	Services	sf_thread_monitor and sf_message
25	r11an0167eu0103	Storage Driver	r_flash_hp, r_flash_lp, r_qspi, and r_sdmmc
26	r11an0168eu0103	System (FMI) Driver	r_elc r_fmi and
27	r11an0169eu0103	Timer Drivers	r_gpt, r_agt, r_gpt_input_capture, and r_rtc
28	r11an0200eu0102	Transfer	r_dtc and r_dmac

## 6. Limitations

Hardware and software limitations that impact the Renesas Synergy Developer Examples include:

1. Open API in SF\_Message, Analog ADC periodic framework issues error for the first time. Call the close and open APIs in sequence to use these modules. This limitation is due to the auto-generated synergy files which create open instance during initialization.
2. DNS client and SMTP client issues error for the first time. Call the close and create APIs in sequence to use these modules. This limitation is due to the auto-generated synergy files which generate the "create" instance during initialization.
3. SSP 1.4.0 does not allow GPT timer period to be set more than 1398 ms (for DK-S124 only). The GPT is run on 16-bit timer, as GPT\_Input\_capture uses the only available 32-bit timer on this MCU.
4. For graphics-related applications, only 640\*480 image resolution is supported
5. For the graphics GLCDC driver example, the CLUT command is not in use.

## 7. Known Issues

The known issues related to this release include the following items:

1. The "get" API is not working in the Developers Example for the HTTP Client.  
HTTP CLIENT Get Start request gives an error NX\_HTTP\_FAILED, which means an HTTP Client error when communicating with the HTTP Server.  
The Consecutive HTTP CLIENT GET Packet request gives error NX\_HTTP\_NOT\_READY.
2. RSPI read/write not working properly:  
Sometimes a Read or Write to the Bluetooth SPI device does not work and the read data is received as 0xFF only.  
While trying to write, sometimes a buffer full is received from the BLE device.
3. Reset API for GPT and AGT timers is not supported in this version

## Website and Support

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