

S3 Ethernet Add-On Application

Introduction

This document describes how to utilize the SSP Ethernet Add-on Driver to expand the network connectivity of Synergy S3. Upon completion of this note you will be able to add this driver to your own project, configure it correctly for the target application, and write code using the NetX Network Stack. The included example project demonstrates a simple web server application as a reference and efficient starting point.

Document Scope

The following topics are covered in this document:

- Installation of Ethernet Add-on distribution
- Quick Setup for DK-S3A7 with DM9051 Demo Board
- Using NetX Application Layer Modules with Ethernet Add-on driver
- Running the Example Application

Target Device

The example application targets Renesas Synergy S3A7/S3A3 groups.

PC Recommendations

- A PC running Windows® 7(32-bit, 64-bit), Windows® 10(32-bit, 64-bit) with the following Renesas software installed:
 - e² studio ISDE version: 5.3.1.002 or IAR EW for Synergy v7.71.1
 - Synergy Software Package (SSP) 1.2.0 or SSC(Synergy Standalone Configurator) 5.3.1
- A PC with a USB 2.0 port and connection to the target board with Ethernet cable

Required Resources

To build and run the example application, you will need:

- DK-S3A7 Version 2.0 or later
- DM9051 Demo Board Version 2.1 or later (For the Asia region, you can purchase this item through the TaoBao online shop. Otherwise, you can contact with Davicom Semiconductor directly through the email sales@davicom.com.tw)

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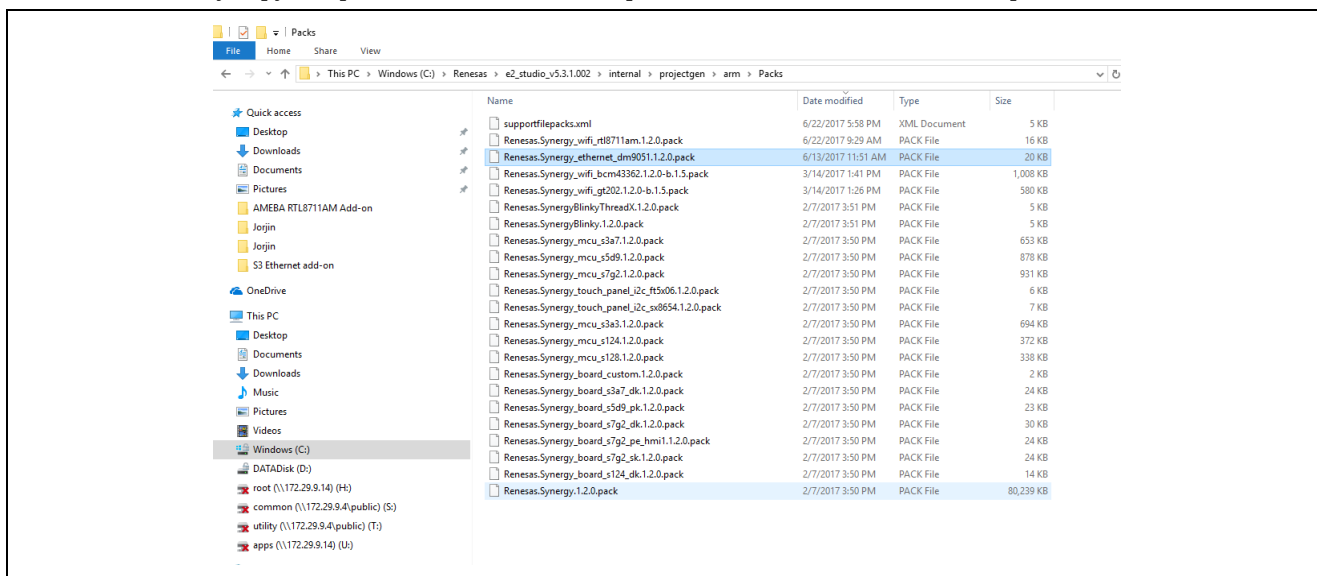
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1. Installation information of Ethernet Add-on Driver

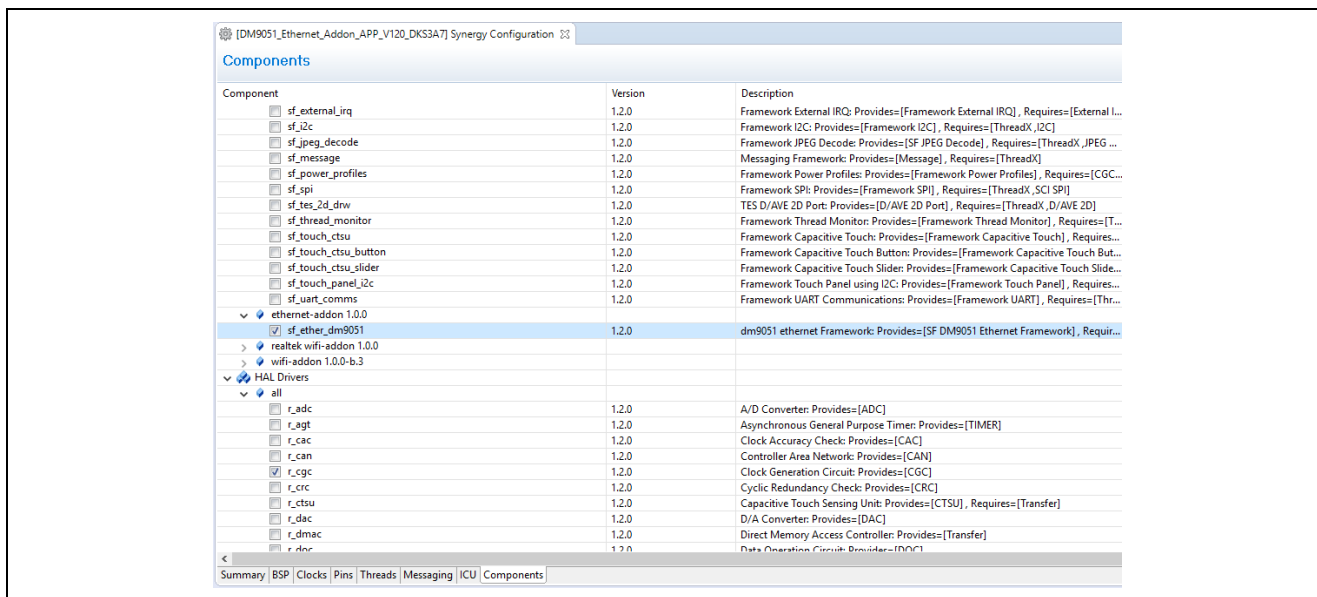
1.1 Installation

The steps to install the distributions are as follows:

1. Check SSP v1.2.0 has been installed first
Note: The default installation folder for the SSP is C:\Renesas\e2_studio
2. Download the Ethernet Add-on pack from Renesas Synergy Gallery (<https://synergycastle.renesas.com/>)
Note: The file locates in Davicom's project, which is under Partner Showcase of Synergy Gallery.
3. Open the SSP Packs folder following the below direction under e2_studio folder
e2_studio → internal → projectgen → arm → Packs
4. Manually copy and paste the Ethernet Add-on pack into the Packs folder as below picture



5. After the previous processes are done, you should be able to see an available Add-on component in the Synergy configurator as below picture.



1.2 Release information and compatible tools

Release Module Name	Version	Description
DM9051 Ethernet Add-on module	1.0.0	This Ethernet Add-on pack is based on the SSP version 1.2.0

Tools	Version	Description
e ² studio	5.3.1	Software development environment
GNU ARM Compiler	4_9-2015q3	GNU ARM® compiler GCC_4.9.3.20150529
IAR Compiler	7.71.1	IAR ARM® compiler toolchain

2. Quick Setup for DK-S3A7 with DM9051 DEMO Board

2.1 DM9051 DEMO Board

Connect the Davicom DM9051 Demo Board to the PMODA connector on the DK-S3A7 platform. The DM9051 Demo Board can't be plugged into the PMODA connector directly because the interrupt pins are not available on any of the PMOD connectors on the DK-S3A7 v2.0 board. You need to connect pin 2 of DM9051 Demo Board to pin P5_6 of port pin header J9 on the DK-S3A7 board. See Table 2.1 for the DM9051 Demo Board connections to PMODA on DK-S3A7

Table 1 DM9051 Demo Board connections to PMODA on DK-S3A7

DM9051 Demo Board (J1) header pin #	PMODA header pin#	Description
1	1	Chip Select (Port 4 Pin 11)
3	2	SPI MOSI (Port 4 Pin 9 MOSI3_A)
5	3	SPI MISO (Port 4 Pin 8 MISO3_A)
7	4	SPI CLK (Port 4 Pin 10 SCK3_A)
9	5	GND
11	6	VCC
2	NC	This interrupt request pin of DM9051 should be connected to an IRQ pin of S3A7. In this App-Note, we use P5_6(IRQ15) to get interrupt request.
4	8	Not Connected
6	9	Not Connected
8	10	Not Connected
10	11	Not Connected
12	12	Not Connected

Note: Make sure that 3.3 volt is selected for PMODA

Note: The schematic of DM9051 Demo Board can be downloaded through the below link

http://www.davicom.com.tw/userfile/24247/DM9051_demo_v2.1.pdf

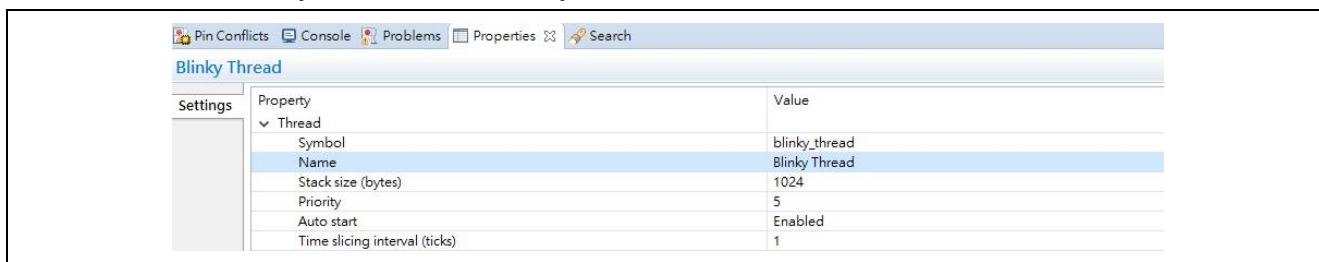


Figure 2.1 shows the DM9051 Demo Board connected to the PMODA connector on DK-S3A7

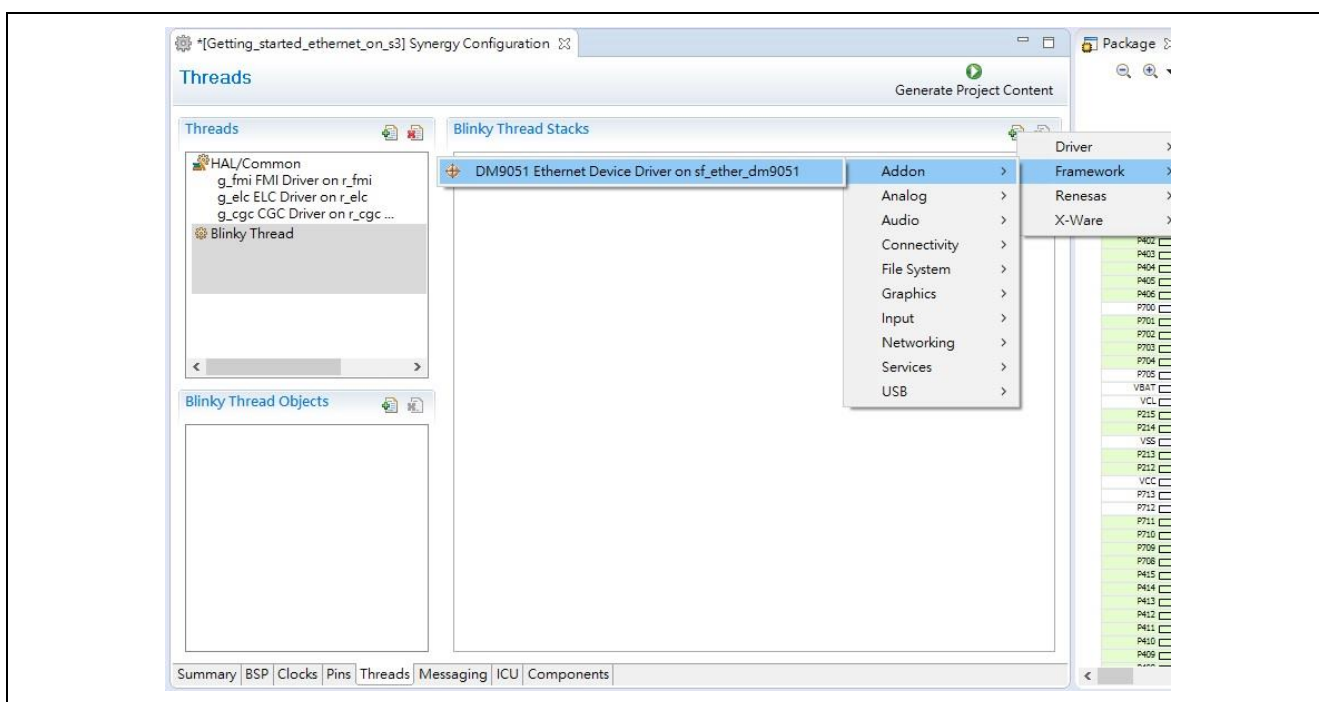
2.2 Configuring Ethernet Add-on components

The following instructions list the common steps in creating an e²studio project with Ethernet Add-on.

1. Start the Synergy Project wizard in e²studio by clicking File > New > Synergy Project
2. Choose SSP version 1.2.0 or newer
 - Choose S3A7 DK as the board
3. Create a project with your desired Project template
 - Choose Blinky with ThreadX gives you a project with ThreadX already added
4. Switch to the Threads tab
5. Add a thread to system if one is not already present
 - Use Blinky thread, which is already created



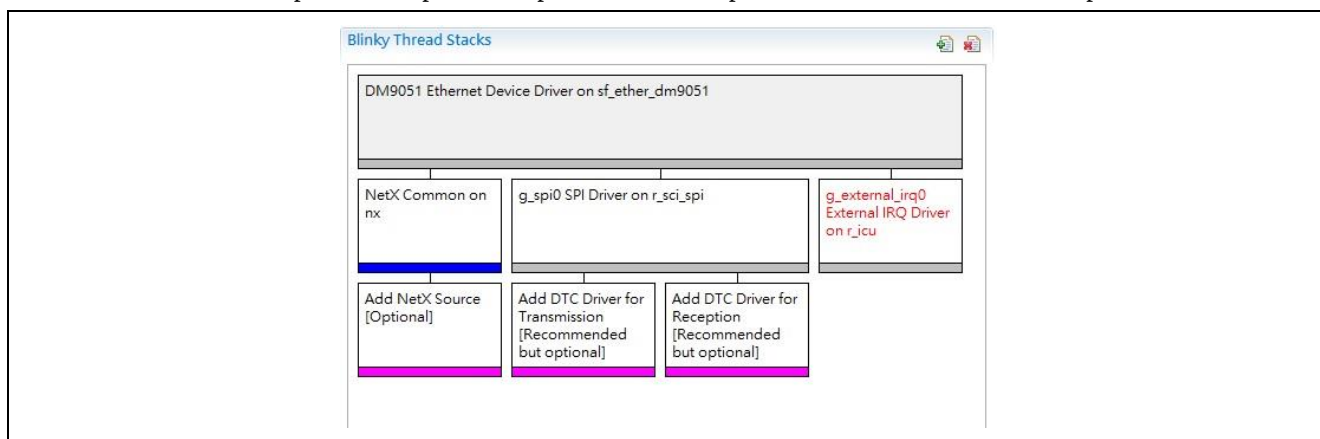
6. Add Add-on module through the “New Stack >” button
 - You can find the Add-on module, which is named as DM9051 Ethernet Device Driver, through the “Framework > Addon”



7. Add SPI Driver on r_sci_spi under DM9051 Ethernet Device Driver
 Note: Make sure to remove the DTC driver for transmission and reception

8. Thread pane setup

- After the previous steps are completed, the thread pane should be as same as below picture



- Configure the property of DM9051 Ethernet Device Driver

Note: As the DM9051 Demo Board connections, the Port 4 Pin 11 is set for SPI CS of DM9051, and the Port 5 Pin 6 is set for Interrupt Request of DM9051.

Property	Value
Common	
SPI CS Pin for DM9051	IOPORT_PORT_04_PIN_11
External IRQ Pin for DM9051	IOPORT_PORT_05_PIN_6
MAC Address High Bits	0x00000060
MAC Address Low Bits	0x6E905102
Module g_sf_el_nx0 DM9051 Device Driver on sf_ether_dm9051	
Name of NetX Driver Entry	g_sf_el_nx0
Name of Device Driver	g_sf_ether_dm90510

- Configure the property of SPI Driver on r_sci_spi

Note: For DM9051, The maximum clock frequency of SPI is 50 MHz. Here, we use 10MHz for implementation.

Property	Value
Common	
Parameter Checking	Default (BSP)
Module g_spi0 SPI Driver on r_sci_spi	
Name	g_spi0
Channel	0
Operating Mode	Master
Clock Phase	Data sampling on odd edge, data variation on even edge
Clock Polarity	Low when idle
Mode Fault Error	Disable
Bit Order	MSB First
Bitrate	100000
Bit Rate Modulation Enable	Enable
Callback	g_spi_ether_callback
Receive Interrupt Priority	Priority 2
Transmit Interrupt Priority	Priority 2
Transmit End Interrupt Priority	Priority 2
Error Interrupt Priority	Priority 2

- Configure the property of External IRQ Driver on r_icu

Note: As the DM9051 Demo Board connections, the external IRQ pin is Port 5 Pin 6, which supports IRQ channel 15.

g_dm9051_irq External IRQ Driver on r_icu		
Settings	Property	Value
Information	✓ Common	Default (BSP)
	Parameter Checking	
	✓ Module g_dm9051_irq External IRQ Driver on r_icu	
	Name	g_dm9051_irq
	Channel	15
	Trigger	🔒 Falling
	Digital Filtering	🔒 Enabled
	Digital Filtering Sample Clock (Only valid when Digital Filtering is Enabled)	🔒 PCLK / 1
	Interrupt enabled after initialization	🔒 True
	Callback	🔒 g_dm9051_interrupt_request
	Interrupt Priority	Priority 3 (CM4: valid, CM0+: lowest - not valid if using ThreadX)

9. SPI Pin configurations

- For DK-S3A7 on PMODA, use SCI3
- From the Pins tab, go to the **Pin Selection** section
- Go to **Peripherals > Connectivity:SCI > SCI3**
- Set SCI3 up in **Custom** operation mode. Set up P409, P408, and P410 for SCI SPI use.

Pin Selection

type filter text

- ✓ Peripherals
 - > Monitoring:CAC
 - > ✓ Analog:ADC
 - > Analog:OPAMP
 - > Analog:COMP
 - > Analog:DAC12
 - > ✓ Connectivity:CAN
 - > ✓ Connectivity:IIC
 - ✓ Connectivity:SCI
 - SCI0
 - SCI1
 - SCI2
 - ✓ SCI3
 - SCI4
 - SCI9
 - > Connectivity:SPI
 - > Connectivity:SSI
 - > ✓ Connectivity:USBf
 - > Input:CTSUs

Pin Configuration

Module name: SCI3
Usage: When using Simple I2C mode, ensure port pins output type is n-ch open drain.
When switching between I2C and other modes, first disable.

Pin Group Selection: Mixed
Operation Mode: Custom

Input/Output

TXD_MOSI: ✓ P409
RXD_MISO: ✓ P408
SCK: ✓ P410
CTS_RTS_SS: None
SDA: None
SCL: None

10. SPI Chip-Select pin configurations

- From the Pins tab, go to the **Pin Selection** section
- Go to **Ports > P4 > P411**

Pin Configuration

Module name: P411
Symbolic Name:
Comment:

Port Capabilities:
AGT1: AGTOA
CTSUs: TS07
GPT9: GTIOCA
IRQ0: IRQ04
OPS0: GTOVUP
SCI0: SDA
SCI0: TXD_MOSI
SCI3: CTS_RTS_SS
SDHI0: DAT0
SPI0: MOSI

P411 Configuration

Mode: Output mode (Initial High)
Pull up: None
IRQ: None
Drive Capacity: Low
Output type: CMOS

11. Set up the IRQ pin P5_6 for DK-S3A7, which is IRQ15:
 - From the Pins tab, go to the **Pin Selection** section
 - Go to **Ports > P5 > P506**

Pin Configuration

Module name: P506

Symbolic Name:

Comment:

Port Capabilities: ADC0: AN22
IRQ0: IRQ15

P506 Configuration

Mode: Input mode

Pull up: None

IRQ: IRQ15

Drive Capacity: Low

Output type: CMOS

Chip input/output

P506: ✓ GPIO

Note: For the IAR EW, the Ethernet Add-on component can be configured by Synergy Standalone Configurator (SSC), and the configuration steps are as same as above.

3. Writing an Application with the Ethernet Add-on driver

As the Figure 3.1, the DM9051 device driver is fully integrated with NetX Network stack inside the SSP, so users can not only easily extend the Ethernet connectivity on Synergy S3, but also leverage the NetX Network stack to develop the Network application. In this section, we will deeply introduce how to utilize DM9051 Add-on driver by using the NetX API calls or the NetX Application Layer Modules.

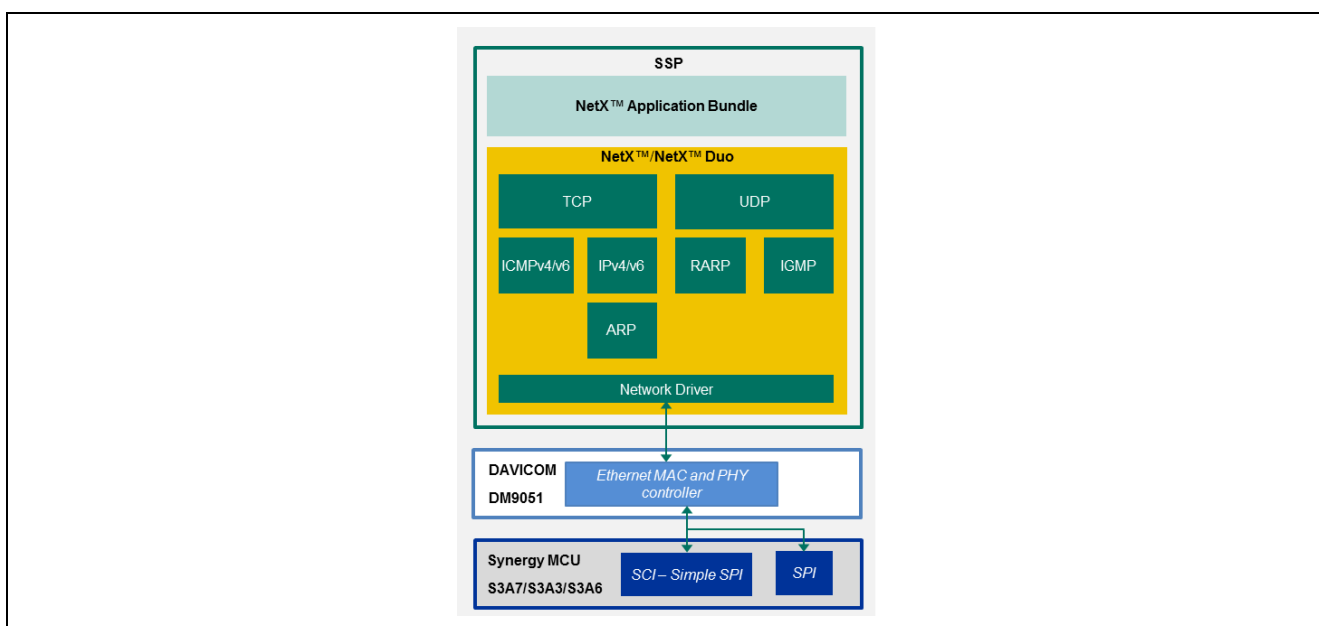


Figure 3.1 Infrastructure of NetX application implementation with DM9051 Add-on Driver

3.1 Using NetX API Calls

Each IP instance in NetX has a primary interface network driver specified by the application in the `nx_ip_create` service. On the other hand, each IP instance has a helper thread, which is responsible for handling all deferred packet processing and all periodic processing. Therefore, the first processing in an IP creation is to call the `nx_ip_create` service, and this service will start the network driver initialization and start an endless loop to process packet and periodic requests after the initialization is completed. For being able to utilize this service, we look up its description in NetX User's Manual as below picture, and it's easy to find out that there is a required input parameter, which is user-supplied network driver. That's where we are going to add a DM9051 driver entry function, which is defined in DM9051 Add-on driver.

nx_ip_create

Create an IP instance

Prototype

```
UINT nx_ip_create(NX_IP *ip_ptr, CHAR *name, ULONG ip_address,
                  ULONG network_mask, NX_PACKET_POOL *default_pool,
                  VOID (*ip_network_driver)(NX_IP_DRIVER *),
                  VOID *memory_ptr, ULONG memory_size,
                  UINT priority);
```

Below is a snippet of sample code which demonstrates how to create an IP instance and enable the application protocols by using the NetX APIs with DM9051 Add-on Driver.

```
/* Network Thread entry function */
void network_thread_entry(void)
{
    /* TODO: add your own code here */
    UINT status;
    ULONG actual_status;

    nx_system_initialize();

    status = nx_packet_pool_create(&g_packet_pool0, "NX Packet Pool", 2048,
                                   &g_packet_pool0_pool_memory[0], (16 * 2048));
    APP_ERR_TRAP(status)

    status = nx_ip_create(&g_ip, "NX IP Instance",
                          (IP_ADDRESS(192,168,1,90)), (IP_ADDRESS(255,255,255,0)),
                          &g_packet_pool0, g_sf_el_nx0,
                          &g_ip0_stack_memory[0], 2048, 3);
    APP_ERR_TRAP(status)

    status = nx_arp_enable(&g_ip, mem_arp, sizeof(mem_arp));
    APP_ERR_TRAP(status)

    status = nx_tcp_enable(&g_ip);
    APP_ERR_TRAP(status)

    status = nx_icmp_enable(&g_ip);
    APP_ERR_TRAP(status)

    status = nx_ip_interface_status_check (&g_ip, 0, NX_IP_INITIALIZE_DONE,
                                           &actual_status, NX_WAIT_FOREVER);
    APP_ERR_TRAP(status)
}
```

Note: The “`g_sf_el_nx0`” is a name of DM9051 driver entry function. Once you select the module of **DM9051 Device Driver on sf_ether_dm9051** in the Synergy Configurator, the name of DM9051 driver entry can be configured in the below properties window.

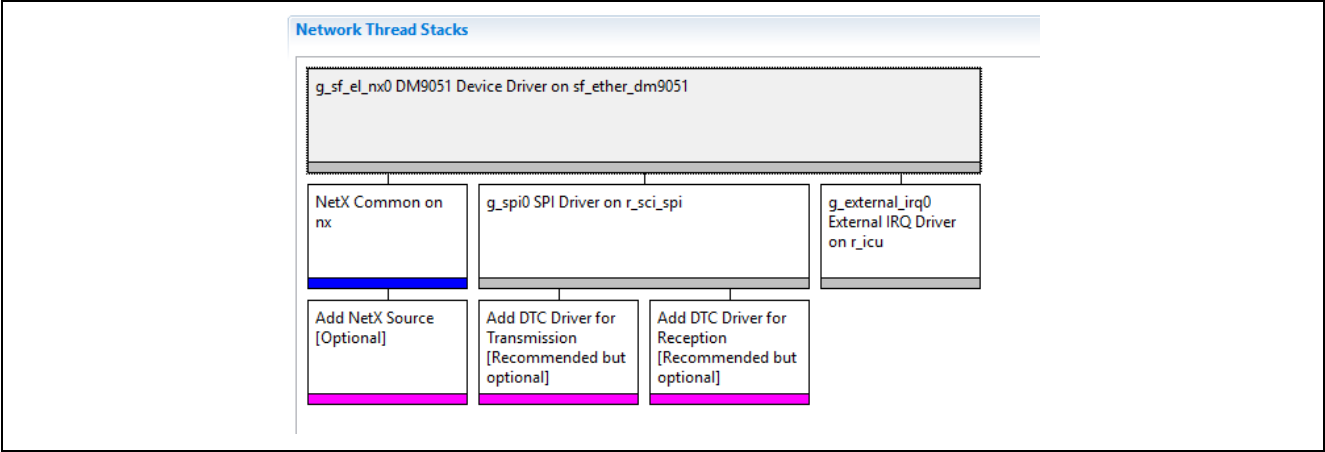


Figure 3.2 The module view of DM9051 Device Driver on sd_ether_dm9051

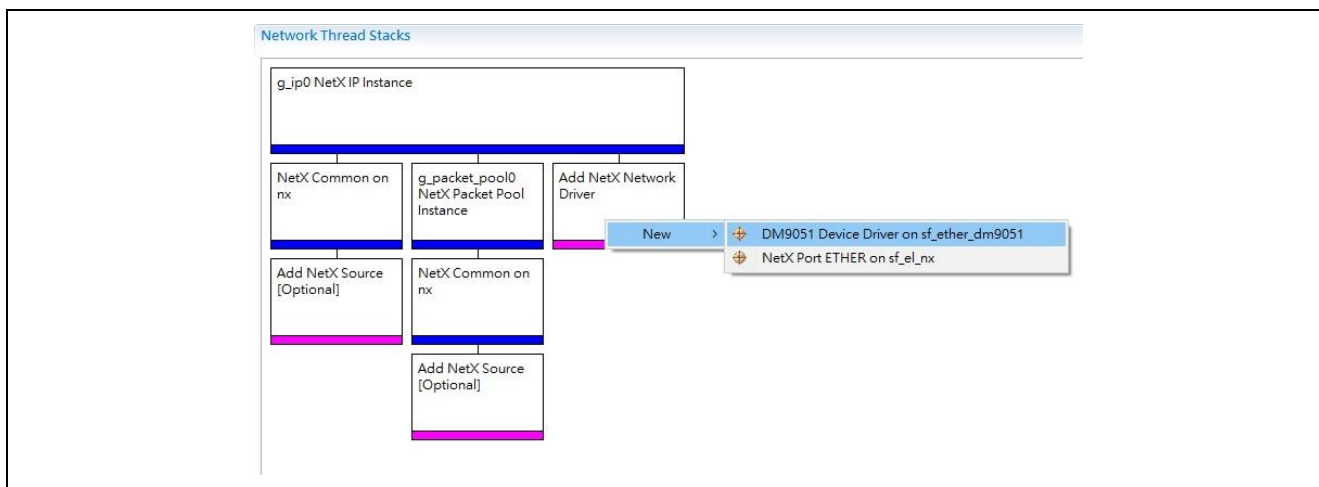
The screenshot shows the 'Properties' window for the 'g_sf_el_nx0 DM9051 Device Driver on sf_ether_dm9051'. The 'Information' tab is selected, displaying a table of properties and their values.

Property	Value
Common	
SPI CS Pin for DM9051	IOPORT_PORT_04_PIN_11
External IRQ Pin for DM9051	IOPORT_PORT_05_PIN_6
MAC Address High Bits	0x00000060
MAC Address Low Bits	0x6E905102
Module g_sf_el_nx0 DM9051 Device Driver on sf_ether_dm9051	
Name of NetX Driver Entry	g_sf_el_nx0
Name of Device Driver	g_sf_ether_dm90510

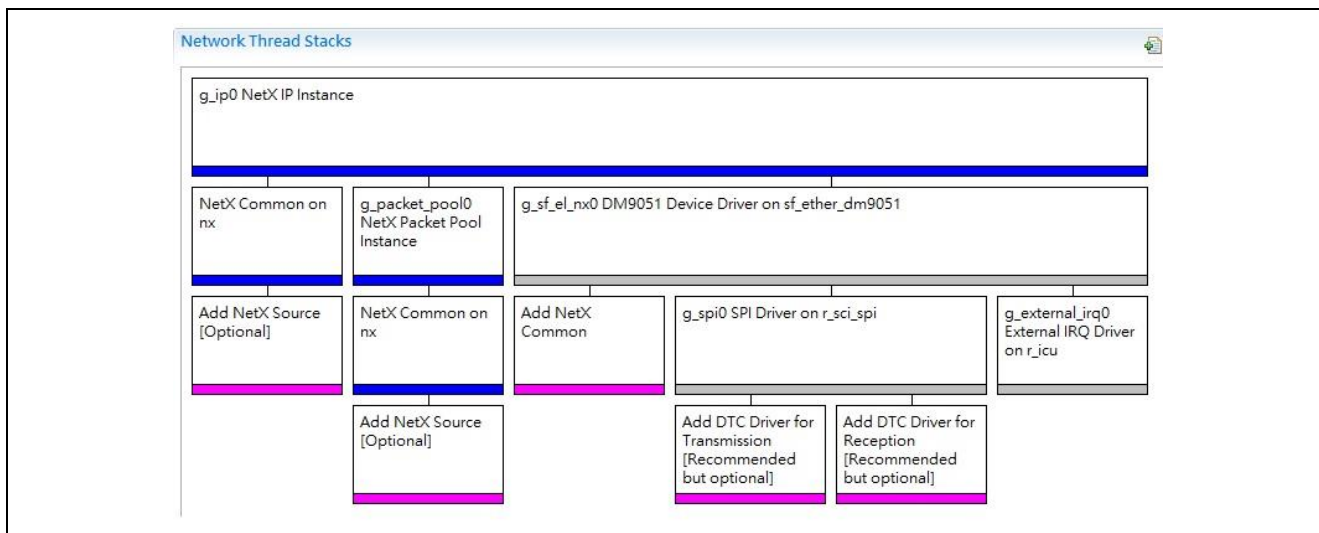
Figure 3.3 The configurable properties for DM9051 Device Driver on sd_ether_dm9051

3.2 Using NetX Application Layer Modules

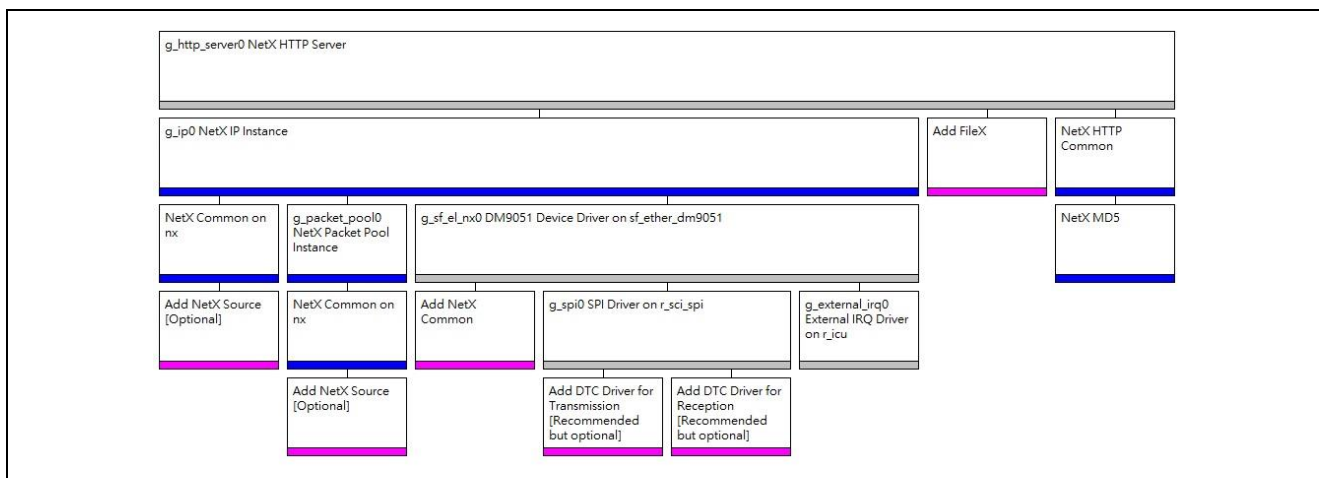
In the SSP v 1.2.0, NetX and NetX Application Layer modules are integrated into the SSP. To use these modules with DM9051 Device Driver, add the DM9051 Device Driver module as NetX Network Driver under NetX IP instance module. The following pictures show the common steps in using NetX Application Layer modules with Ethernet Add-on module.



Configure DM9051 Device Driver as same as the steps we did in section 2.2



After a NetX IP instance is created, we can use it to establish NetX Application Layer modules, such as HTTP, DHCP, etc.

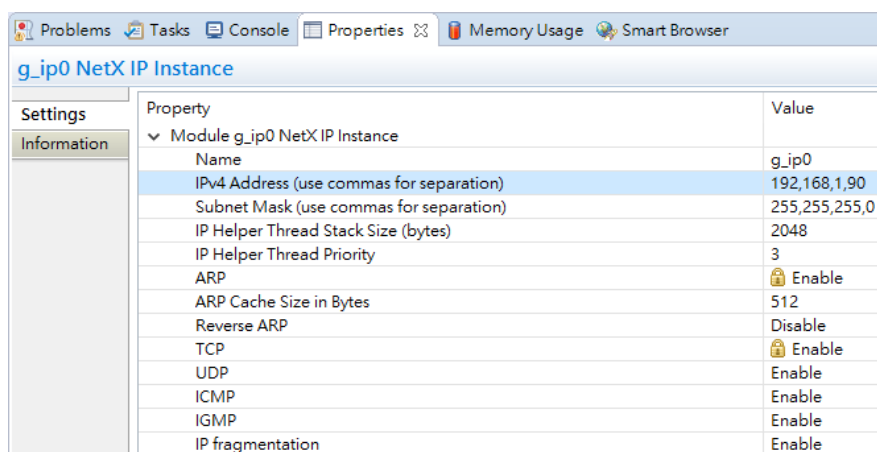


4. Application Example of Ethernet Add-On

4.1 Importing, Configuring, and Building the Project

Before you can run this example application, you must change the default IP address for the application in the ISDE configurator to IP addresses that are appropriate for your network and PC. The following steps describe how to import, configure, change the default IP address in the application to an IP address appropriate for your network, and then build the project:

1. Follow the procedure in the Synergy Project Import Guide (r11an0023eu0116_synergy_ssp.pdf) to import the project into the e2 studio ISDE. Do not build the project
2. Open the `configuration.xml` for the project, select the **Threads** tab, and choose **Network Thread**. Click on `g_ip0`, NetX IP instance, on the **Properties** window, and change the IPv4 address to the one, which is in the same domain of the PC and is not being used. In this application, the default setting of IP address for the board is chosen as 192.168.1.90



Property	Value
Module g_ip0 NetX IP Instance	
Name	g_ip0
IPv4 Address (use commas for separation)	192,168,1,90
Subnet Mask (use commas for separation)	255,255,255,0
IP Helper Thread Stack Size (bytes)	2048
IP Helper Thread Priority	3
ARP	Enable
ARP Cache Size in Bytes	512
Reverse ARP	Disable
TCP	Enable
UDP	Enable
ICMP	Enable
IGMP	Enable
IP fragmentation	Enable

Figure 4.1 The properties view of NetX IP instance module

3. After selecting an IP Address for the board is completed, you should also configure a static IP address for your Ethernet Port of your PC. The processes are shown as below.

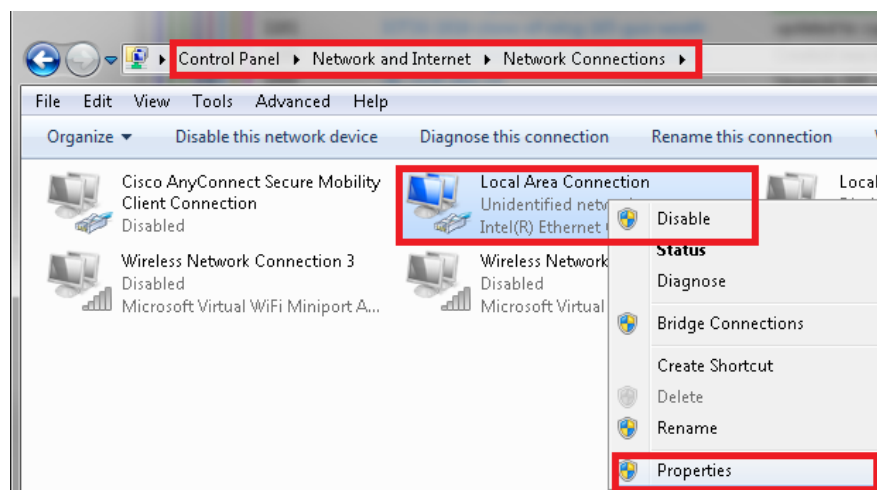


Figure 4.2 Configure the Ethernet port of your PC to static IP address in order to test the Board

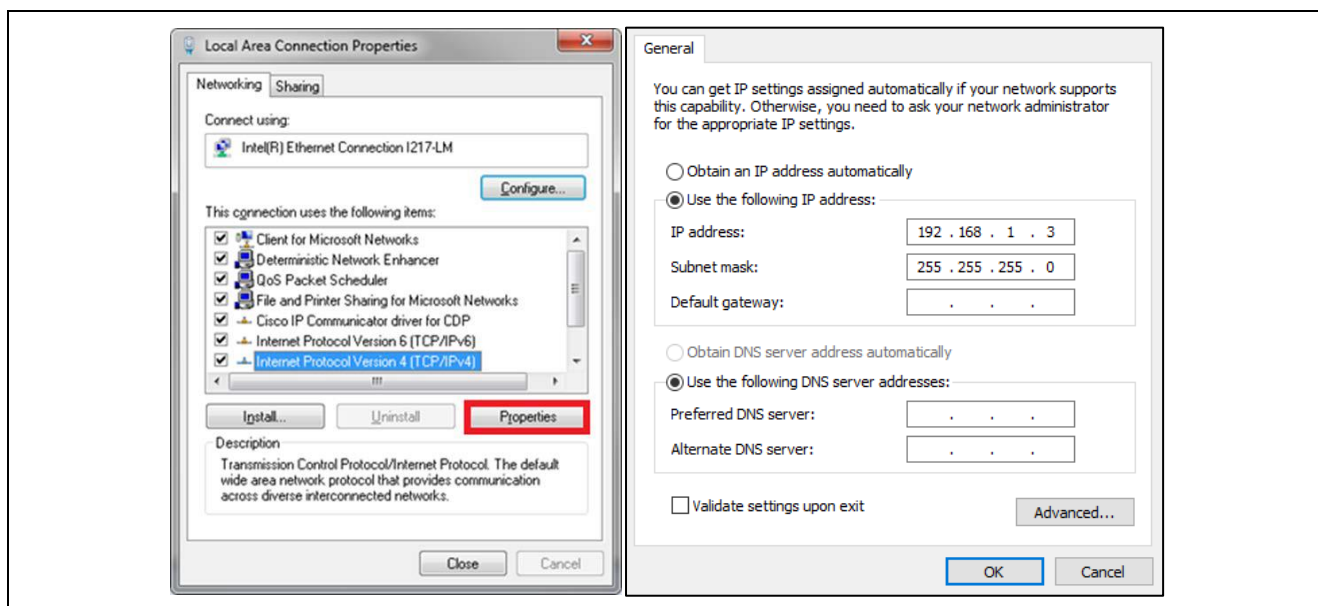


Figure 4.3 Static IP address for the Ethernet port of the PC

- Follow the procedure in the Synergy Project Import Guide (r11an0023eu0116_synergy_ssp.pdf) to build and debug the project. When prompted to select the debug configuration, select Ethernet_Addon_Application_V120_DK_S3A7 Debug (under **Renesas GDB Hardware Debugging**)

4.2 Running the Application Example

The application example implements a simple web server application on a Renesas Synergy development board (DK-S3A7) using the DM9051 Add-on module, SSP and the NetX network stack. For being able to run the application on the Synergy board (DK-S3A7), you need to configure two DIPSWs by following steps.

Step 1: Enable the PMOD connector of the Synergy board (DK-S3A7) by setting the DIPSW S5 PMOD switch to ON.

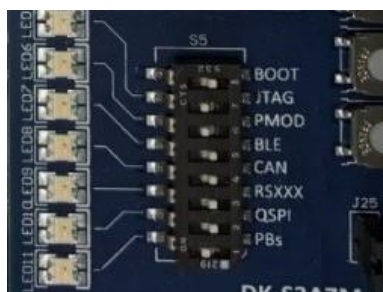


Figure 4.4 The setting of DIPSW S5 for the DK-S3A7

Step 2: Enable the USB Host connector of the Synergy board (DK-S3A7) by setting the DIPSW S6 USBF switch to OFF.



Figure 4.5 The setting of DIPSW S6 for the DK-S3A7

The NetX HTTP Server is designed for use with the FileX embedded file system, and we use the USB Drive to store the HTTP files in this application. Therefore, you need to insert the USB Drive into the USB connector (USB Mass storage) as shown in Figure 4.6 before you start to run the application.

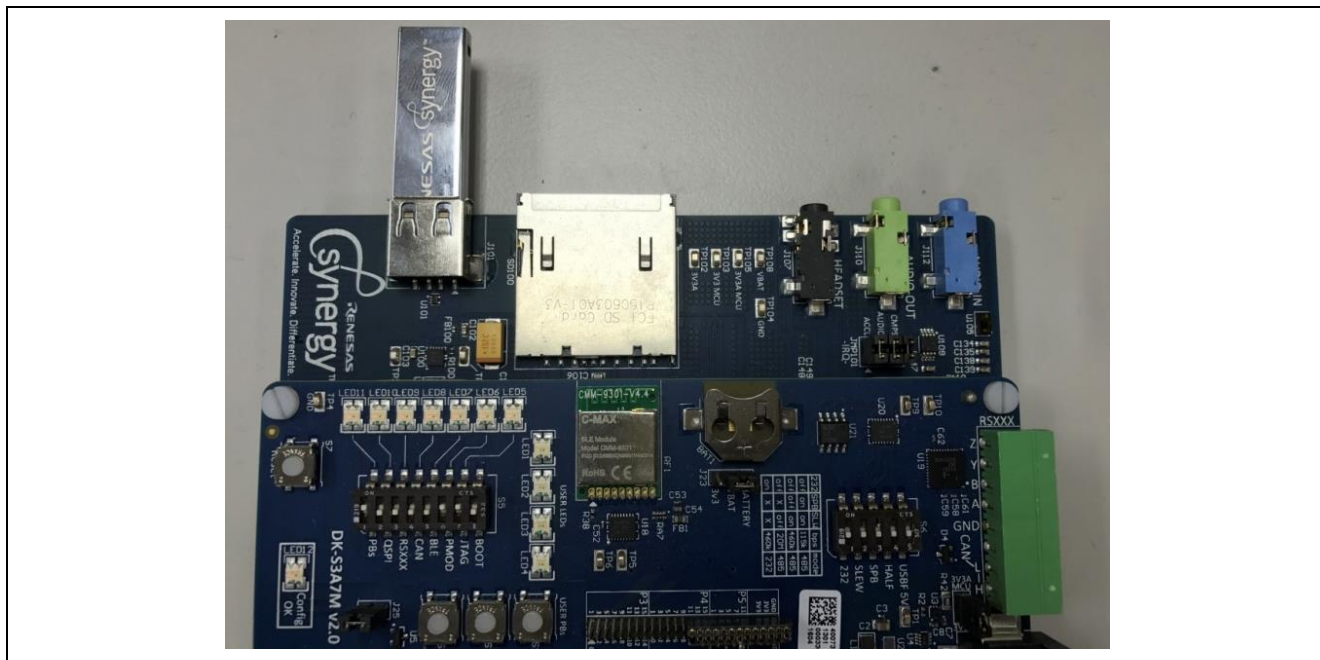


Figure 4.6 USB Drive connection for DK-S3A7

To run the example web server application:

1. In a Command Prompt window on your PC, enter the 「ping」 command with the IP address that you specified for the board (192.168.1.90). In the following example, the ping result for the board address is shown in Figure 4.7. If the connectivity and configurations are proper, you will see the ping working.

```
C:\Users\cpchan>ping 192.168.1.90

Pinging 192.168.1.90 with 32 bytes of data:
Reply from 192.168.1.90: bytes=32 time=3ms TTL=128
Reply from 192.168.1.90: bytes=32 time=2ms TTL=128
Reply from 192.168.1.90: bytes=32 time=1ms TTL=128
Reply from 192.168.1.90: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.1.90:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 2ms

C:\Users\cpchan>
```

Figure 4.7 Ping results

2. In the URL text field of web browser, enter the IP address, which you used with the ping command in the previous step. You should see the view in Figure 4.8.

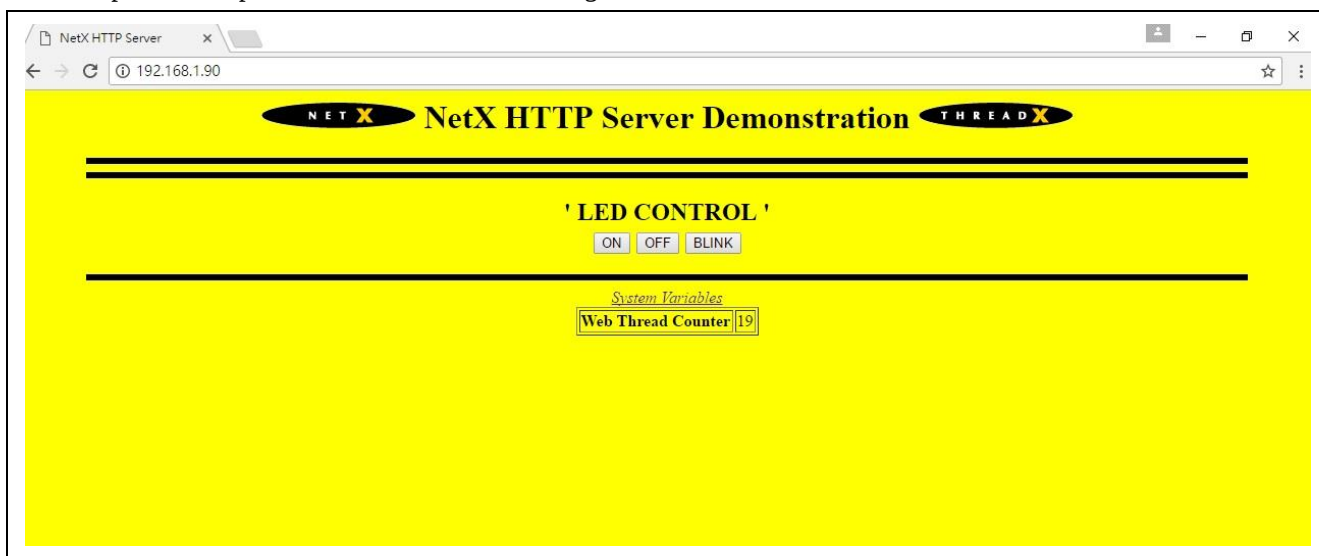
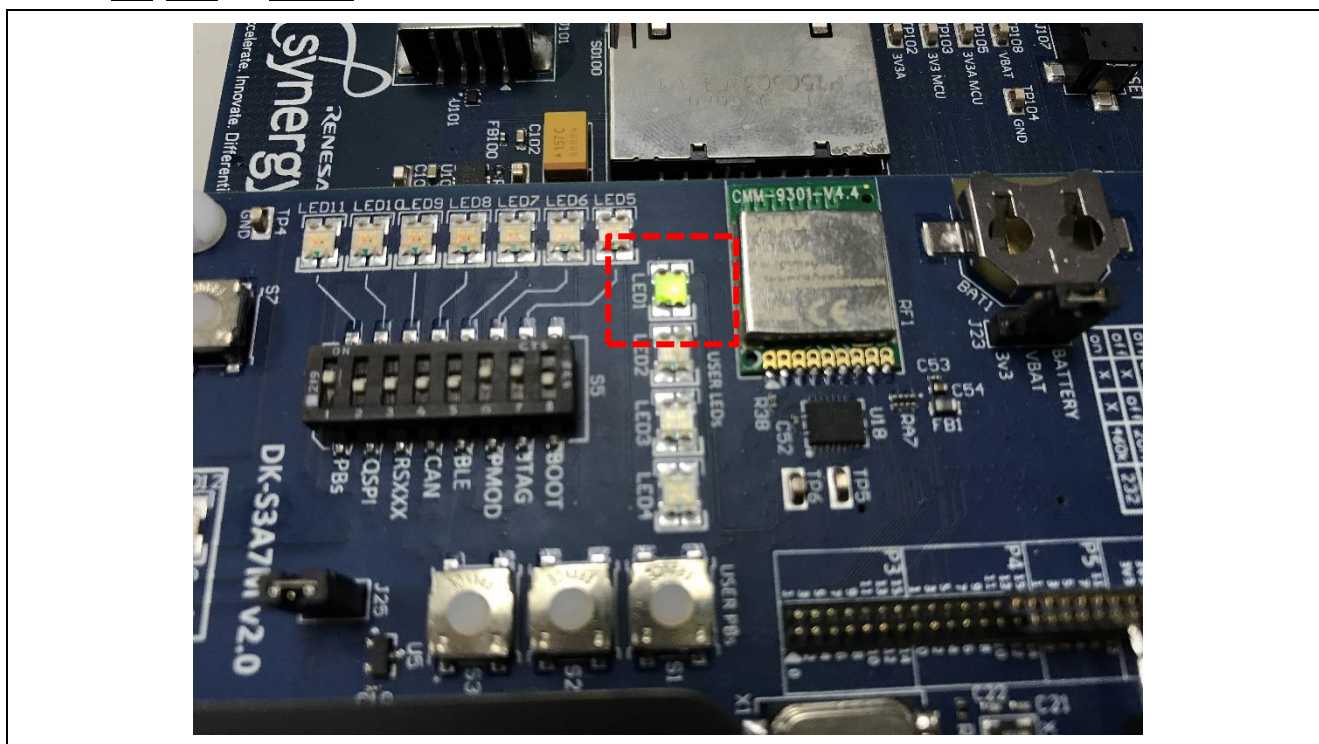


Figure 4.8 HTTP Web page

3. In the web page, you can control the status of LED1 on DK-S3A7 board by clicking the web buttons, which are **ON**, **OFF** and **BLINK**.



4. Click **Terminate** button to close the debugger.

5. S3 Ethernet Add-on Application Implementation Details

In this section, the implementation details of S3 Ethernet application are described. The Ethernet application is created on top of the NetX Webserver application, which is available for DK/SK-S7G2, PK-S5D9 and PEHMI. One of the reasons for choosing the NetX Webserver application is to showcase the modular approach for adding a new application on top of the existing application. The DM9051 Add-on Module satisfies NetX driver function requirement and uniform interface of NetX IP Instance Module to be able to move NetX application from other device to Synergy S3 without changing the application. In Figure 5.1, the Webserver application consists of the Network thread, Web thread, and the USB thread. A few modifications are done on the web page layout. The Thread1 to Thread7 are removed to simplify the project, and the relative thread counters, which are thread_1_counter, thread_2_counter..., are removed to simplify the

display parameters of web page. On the other hand, the LED control thread is added to implement IO control through HTTP web interface.

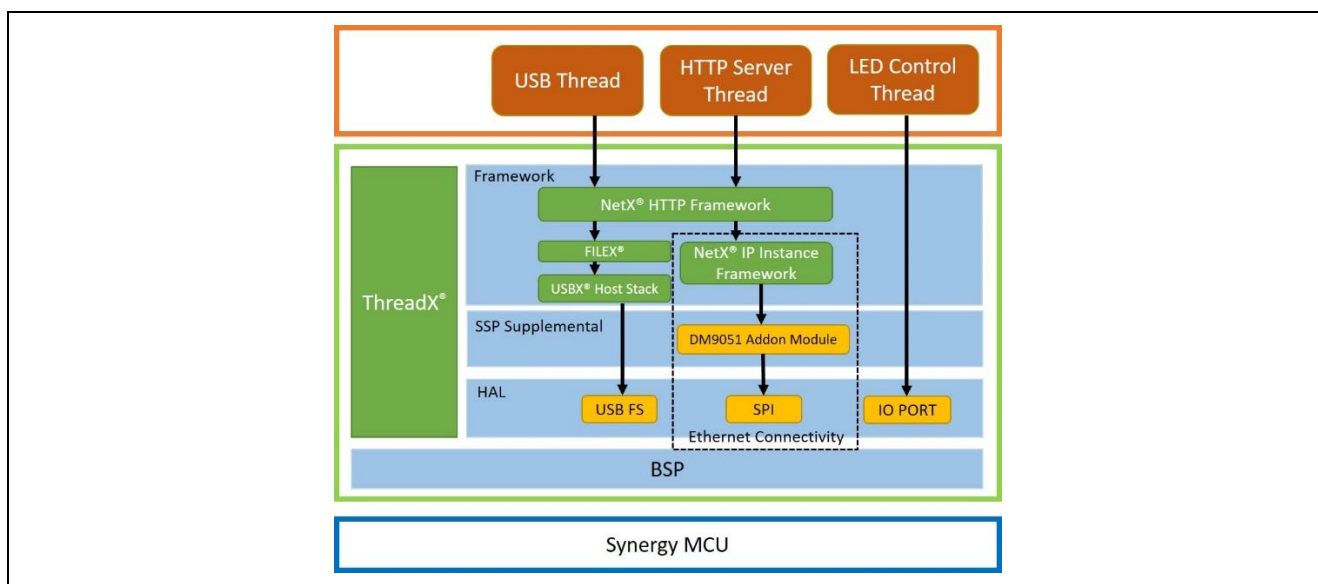


Figure 5.1 Architecture of NetX Webserver application on DK-S3A7

The details of the NetX Webserver application for DK-S3A7 and its thread are given in the following sections.

5.1 HTTP Server Thread

This thread module along with Synergy Configurator created code, brings in the HTTP server creation, with the TCP/IP core stack. In addition, it also brings the USBX Host Mass Storage Stack and DM9051 driver add-on. Essentially, this thread is responsible for HTTP server, Ethernet Connectivity, and executing the user code.

The configurator generated code is part of the `common_data.c/h` and `http_server_thread.c/h` under the `src/synergy_gen` folder. The code, under these files, are common code specific to the thread's module stack components selected. In this case, the common code related to NetX is available under `g_comm_init()` function. Also, in the common code, the NetX driver entry function, packet pool creation for the DM9051 driver module is also available as part of the configurator created code.

In the user application code(`src/http_server_thread_entry.c`), it waits for USB device to be inserted, updates the previously created FileX media instance for NetX HTTP Server Media Pointer, starts the HTTP Server and resumes the LED Control Thread.

In the SSP v1.2.0, this will be configurator created, along with FileX media pointer for the HTTP server).

Currently `nx_http_server_create` is user written code, but in the SSP v1.2.0, this is configurator created. In this application, this is still user written code and is part of `http_server_thread.c`.

Note: Before USB device is detected/inserted, HTTP server gets created by Synergy configurator with `&g_fx_media0`, which is a pointer to FileX Media Control Block for a USB flash device. Therefore, this media pointer should be updated before HTTP Server gets started.

On the other hand, the HTTP server creation API also requires the `authentication_check` and `get_notify` functions where user page creation and handling of the page specific Get/Set are handled. These are in `src/demo_nx_http_httpserver_query.c`. In addition to the page hosting, it also gives the option to Get/Set the user data from/on to the page. Additionally, the thread also sets the event flag to indicate the LED control thread that the user desired operation (ON/OFF/BLINK) for the LEDs on the board.

Once the USB removed event is gotten from USB Thread, this thread will stop the NetX HTTP server and turn off the LED Control Thread.

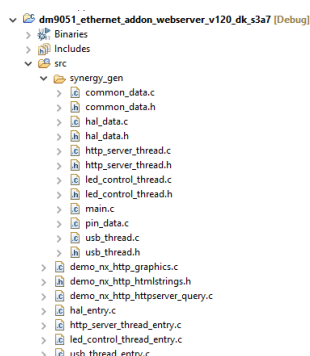
5.2 LED Control Thread

The thread mainly controls the LEDs based on the event received from the user through the HTTP server page.

5.3 USB Thread

The entry function of this thread doesn't contain any necessary process for USB Mass Storage operation. However, the `ux_host_change_callback`, which is used for checking USB Device insertion and setting the event to inform HTTP Server Thread, is located on the same source file.

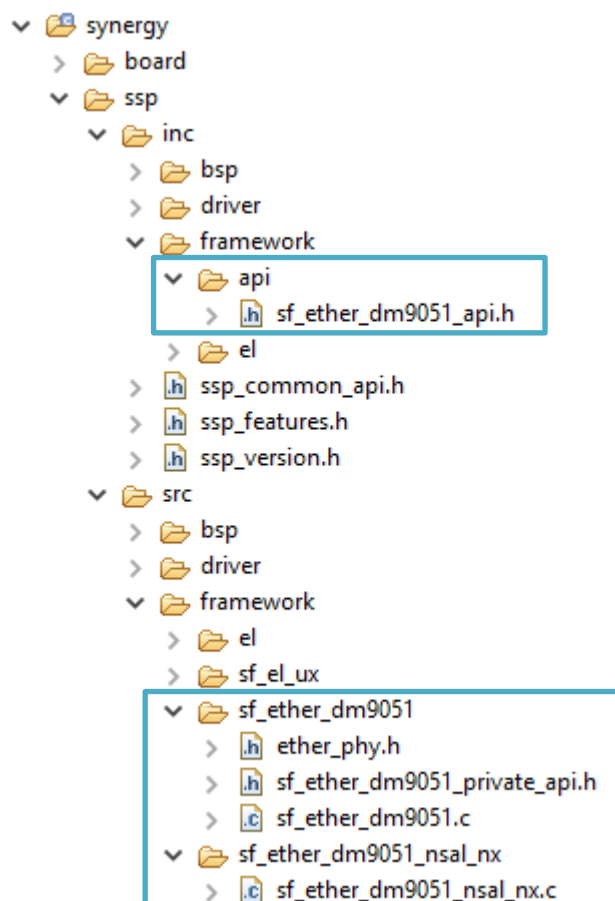
The sample directory structure of the NetX Webserver application code, the DM9051 Addon module, and its related driver, and code are as shown in Figure 5.2 and 5.3. The DM9051 Addon module is an add-on, and its relative files are listed under `synergy/ssp/src/framework/sf_ether_dm9051`, `synergy/ssp/src/framework/sf_ether_dm9051_nsal_nx`, and `synergy/ssp/inc/framework/api` folder.



```

dm9051_ethernet_addon_webserver_v120_dk_s3a7 [Debug]
├── Binaries
├── Includes
└── src
    ├── synergy_gen
    │   ├── common_data.c
    │   ├── common_data.h
    │   ├── hal_data.c
    │   ├── hal_data.h
    │   ├── http_server_thread.c
    │   ├── http_server_thread.h
    │   ├── led_control_thread.c
    │   ├── led_control_thread.h
    │   ├── main.c
    │   ├── pin_data.c
    │   ├── usb_thread.c
    │   └── usb_thread.h
    ├── demo_nx_http_graphics.c
    ├── demo_nx_http_htmlstrings.h
    ├── demo_nx_http_httpserver_query.c
    ├── hal_entry.c
    ├── http_server_thread_entry.c
    ├── led_control_thread_entry.c
    └── usb_thread_entry.c
  
```

Figure 5.2 NetX Webserver application and Synergy Configurator created code



```

synergy
├── board
├── ssp
│   ├── inc
│   │   ├── bsp
│   │   ├── driver
│   │   └── framework
│   │       ├── api
│   │       │   └── sf_ether_dm9051_api.h
│   │       ├── el
│   │       ├── ssp_common_api.h
│   │       ├── ssp_features.h
│   │       └── ssp_version.h
│   └── src
│       ├── bsp
│       ├── driver
│       └── framework
│           ├── el
│           ├── sf_el_ux
│           │   ├── sf_ether_dm9051
│           │   │   ├── ether_phy.h
│           │   │   ├── sf_ether_dm9051_private_api.h
│           │   │   ├── sf_ether_dm9051.c
│           │   └── sf_ether_dm9051_nsal_nx
│           │       └── sf_ether_dm9051_nsal_nx.c
  
```

Figure 5.3 DM9051 add-on code and its driver directory structure

Website and Support

Support: <https://synergygallery.renesas.com/support>

Technical Contact Details:

- America: https://renesas.zendesk.com/anonymous_requests/new
- Europe: <https://www.renesas.com/en-eu/support/contact.html>
- Japan: <https://www.renesas.com/ja-jp/support/contact.html>

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Revision History

Rev.	Date	Description	
		Page	Summary
1.0	May 18, 2017		Initial version
1.1	June 20, 2017		Modified version with additional contents

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