

# ***SN-Link Adapter V3***

## ***User Guide***

*Version 1.0*

**32-Bit Cortex-M0 Series**  
**8051 Flash Series**  
**8-Bit Embedded ICE Series**

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*AMENDENT HISTORY*

<b>Version</b>	<b>Date</b>	<b>Description</b>
1.0	2017/02/10	First Version

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# 1 Introduction

The SN-Link Adapter V3 is an in-circuit debugger and programmer for the 32-Bit Cortex-M0, 8051 and 8-Bit Embedded ICE microcontroller families.

The SWD, SWAT and I2C interface is used to communicate with the 32-Bit Cortex-M0, 8051 and 8-Bit Embedded ICE microcontroller located on your own application board.

## 1.1 Features

- USB Drivers aren't installed.
  - USB HID Driver
- 5 V power supplied by USB connector.
- Supports Online and Offline Programming.
  - Use with SN-Link ISP Tool
- Can provide 3.3 V or 5 V supply to the target board.

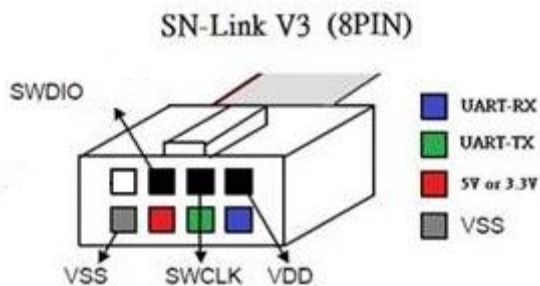
- **Note : Please refer to SONiX\_SN-Link ISP\_Uesr\_Guide for the Programming function.**

## 1.2 Hardware layout

Symbol	Description
<b>A</b>	USB type A interface
<b>B</b>	Power/ Link LED
	<ol style="list-style-type: none"> <li>The Status LED is green and is communicating successfully with the computer's USB HID driver.</li> <li>The Status LED is red and is communicating unsuccessfully with the computer's USB HID driver or connected to the USB power adapter.</li> </ol>
<b>C</b>	Communication activity LED
	<ol style="list-style-type: none"> <li>The Status LED is green and is communicating successfully with the target board.</li> <li>The Status LED which flashing green during programming with offline.</li> <li>The Status LED is green and is programming successfully with offline.</li> <li>The Status LED is red and is programming successfully with offline.</li> </ol>
<b>D</b>	8 pin cable connect to target board



## 1.3 Debugging connector layout



## 1.4 Debugging/Programming pins and connections

Table 1 summarizes the signals present on SN-Link Adapter V3 cable and their connection on the target board.

Table 1. SN-Link Adapter V3 cable connections

MCUs Type	MCUs Debugging Pin Name	SN-Link Adapter V3 Pin Name
32-Bit Cortex-M0 Series	VDD	VDD
	VSS	VSS
	SWCLK	SWCLK
	SWDIO	SWDIO
8051 Flash Series	VDD	VDD
	VSS	VSS
	SWAT	UART-RX
		UART-TX
8-Bit Embedded ICE Series	VDD	VDD
	VSS	VSS
	EICK	SWCLK
	EIDA	SWDIO

- **Note : SN-Link Adapter V3 can provide 5 V or 3.3 V supply to the target board.  
Please refer to SONiX\_SN-Link ISP\_Uesr\_Guide for the setting method.**

## 1.5 Integrated Development Environments

KEIL Integrated Development Environments for the 32-Bit Cortex-M0 and 8051 MCUs.  
M2IDE or SN8 C Studio software from SONiX's for the 8-Bit Embedded ICE MCUs.

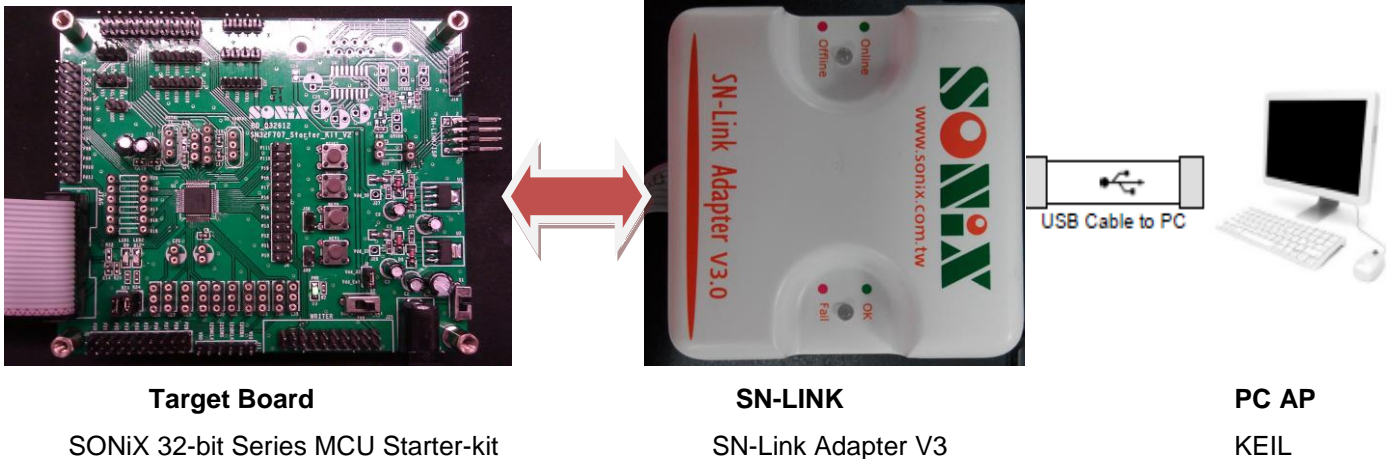
Table 2. The MCUs to be with the IDE

MCUs Type	IDE	Version
32-Bit Cortex-M0	Keil MDK-ARM	V4.53 or later
8051	Keil C51	V9.50a or later
8-Bit Embedded ICE	1. M2IDE	1. M2IDE V143 or later
	2. SN8 C Studio	2. SN8_C_Studio_V153 or later

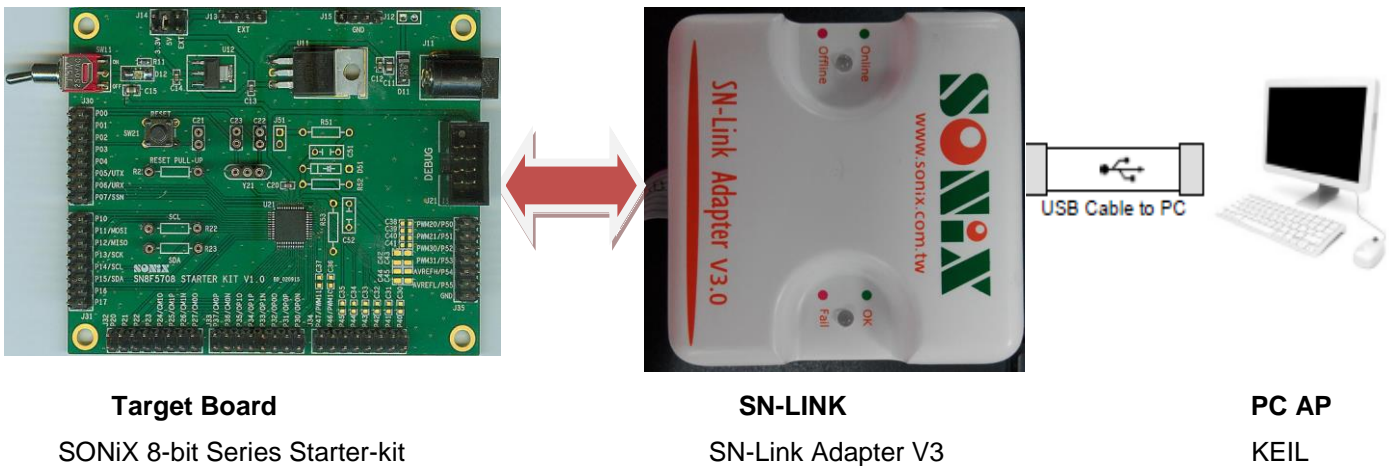
## 2 Hardware configuration

This section describes the same connector is used for a SWD, SWAT and I2C interface according to the cable connected to it.

### 2.1 32-Bit Cortex-M0 Series schematic diagram



### 2.2 8051 Flash Series schematic diagram



## 2.3 8-Bit Embedded ICE Series schematic diagram



**Target Board**

8-bit Embedded ICE Series MCU Start-kit

**SN-LINK**

SN-Link Adapter V3

**PC AP**

M2IDE/SN8 C Studio



# 3 Software configuration

This section describes the procedures to install the SN-Link driver and M2IDE/SN8 C Studio.

## 3.1 32-Bit Cortex-M0 Series

1. Install Keil MDK-ARM ◦
2. Install SN-Link Driver
  - Download the compressed SN-Link Driver software from the SONiX website.
  - <http://www.sonix.com.tw/article-tw-3939-25169>
  - SN-Link\_Driver for Keil CortexM0\_V2.00.315.zip or later

## 3.2 8051 Flash Series

1. Install Keil C51 ◦
2. Install SN-Link Driver
  - Download the compressed SN-Link Driver software from the SONiX website.
  - <http://www.sonix.com.tw/article-tw-3939-25169>
  - SN-Link\_Driver for Keil C51\_20161118\_V1.00.315.rar or later


## 3.3 8-Bit Embedded ICE Series

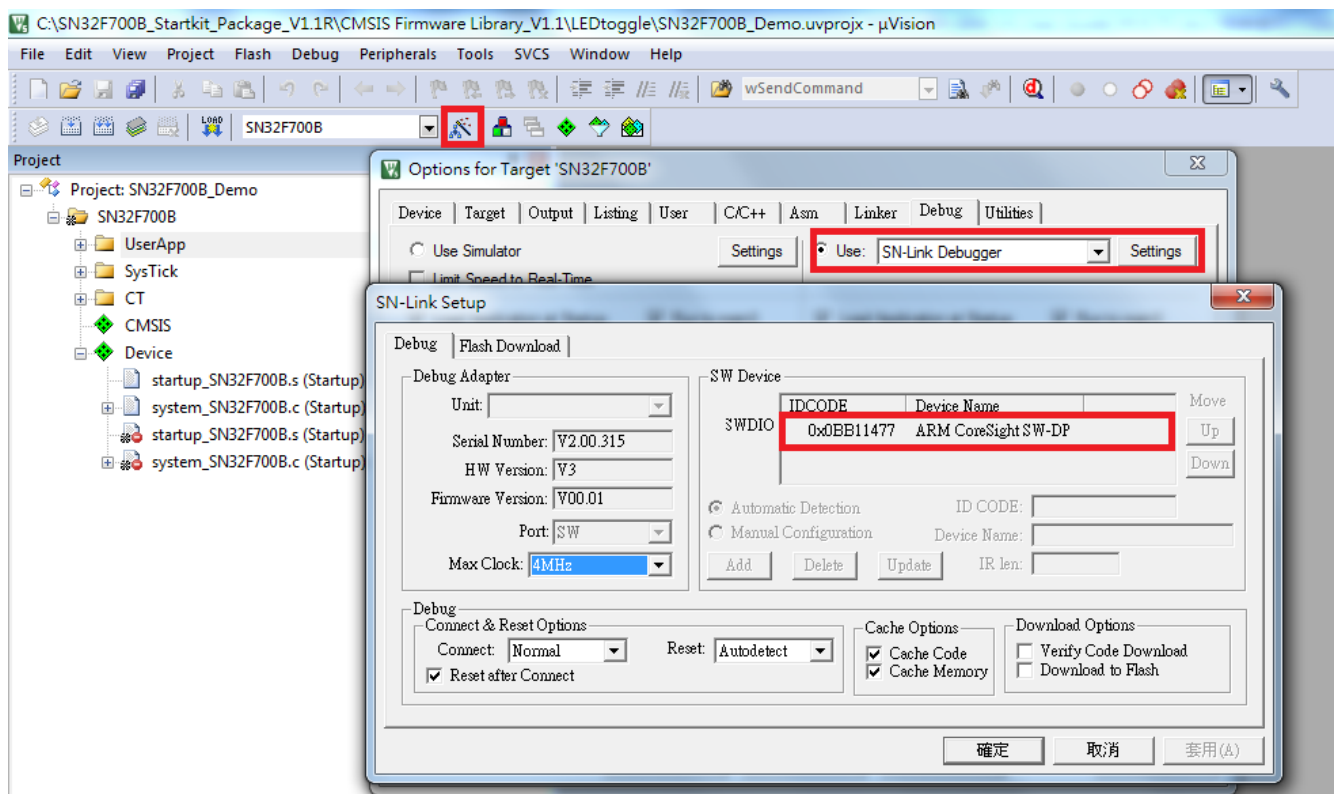
1. Use assembly language
  - 1.1 Install M2IDE
    - Download the M2IDE software from the SONiX website.
    - <http://www.sonix.com.tw/article-tw-3947-26591>
    - M2IDE\_V144.exe or later
2. Use C language
  - 2.1 Install SN8 C Studio
    - Download the M2IDE software from the SONiX website.
    - <http://www.sonix.com.tw/article-tw-3947-26596>
    - SN8\_C\_Studio\_V153\_160603(219.213).zip or later

# 4 Debug Setting

This section describes the debug setting use with IDE.


## 4.1 32-Bit Cortex-M0 Series

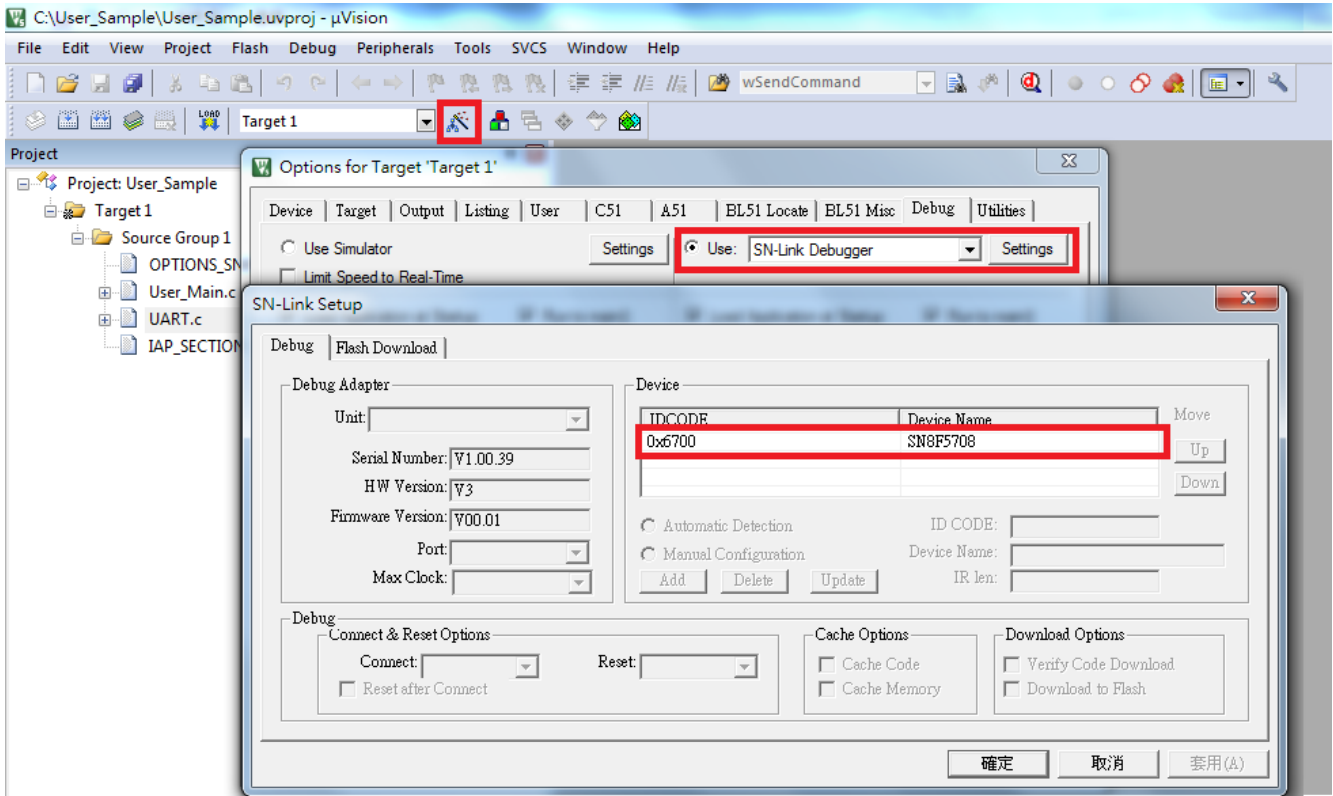
1. SN-Link Adapter V3 connected to USB Cable.
  - SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
2. SN-Link Adapter V3 connected to Target MCU.
3. Power on for Target board.
  - SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
4. Executive Keil uVision4 or uVision5 and open project.
5. Debug Setting in the dialog Options for Target – Debug
  -  Open the dialog via the toolbar icon or the menu Project - Options for Target




## 4.2 8051 Flash Series

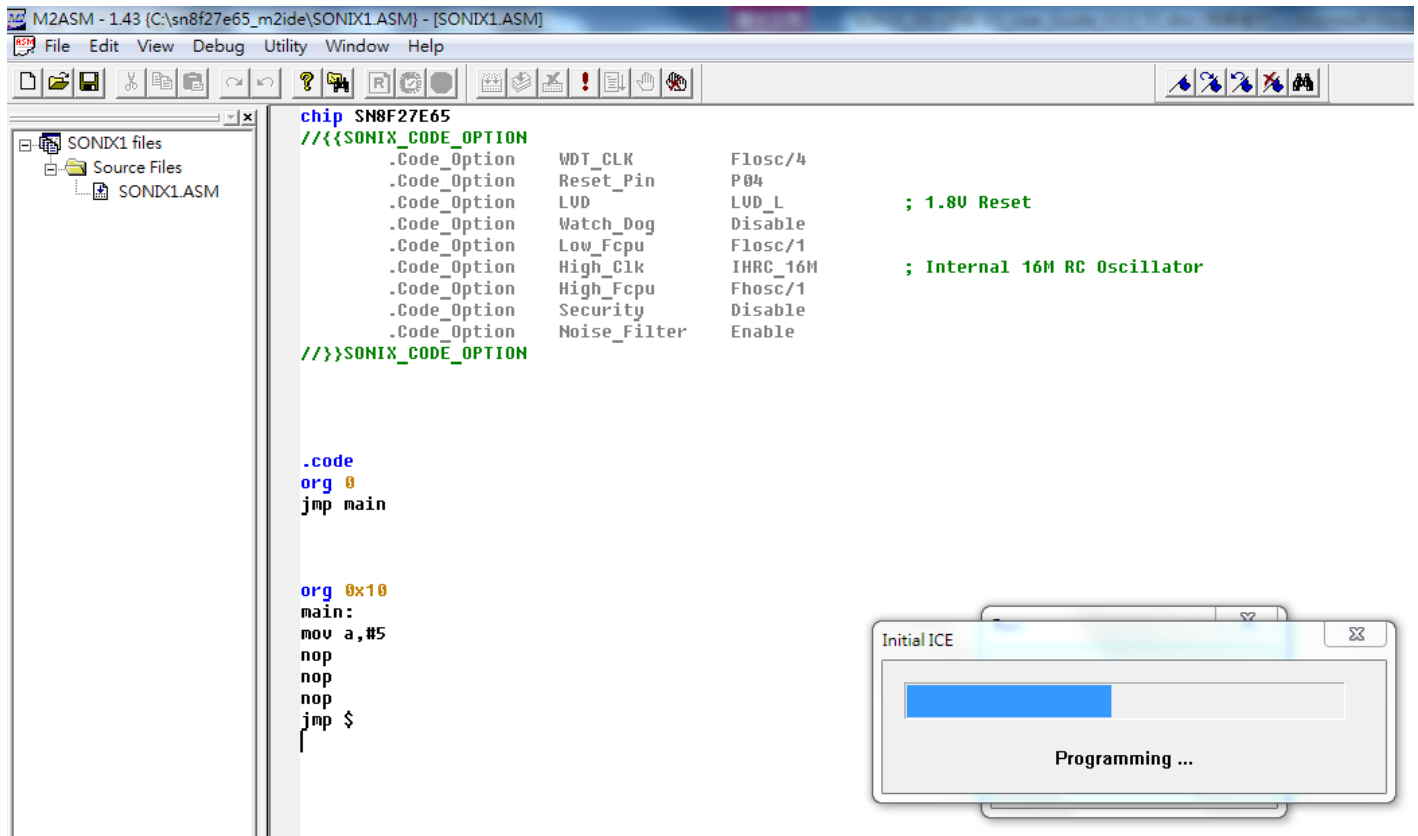
1. SN-Link Adapter V3 connected to USB Cable.
  - SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
2. SN-Link Adapter V3 connected to Target MCU.
3. Power on for Target board.

- SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
- 4. Executive Keil uVision4 or uVision5 and open project.
- 5. Debug Setting in the dialog Options for Target – Debug
  -  Open the dialog via the toolbar icon or the menu Project - Options for Target



### 4.3 8-Bit Embedded ICE Series

1. Use assembly language
  - 1.1 SN-Link Adapter V3 connected to USB Cable.
    - SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
  - 1.2 SN-Link Adapter V3 connected to Target MCU.
  - 1.3 Power on for Target board.
    - SN-Link Adapter V3 “Ok/Fail” LED is GREEN.
  - 1.4 Executive M2IDE and open project.
  - 1.5 Click 
    - Go(F5) via the toolbar icon or the menu Debug – Go(F5)



## 2. Use C language

### 2.1 SN-Link Adapter V3 connected to USB Cable.

- SN-Link Adapter V3 "Ok/Fail" LED is GREEN.

### 2.2 SN-Link Adapter V3 connected to Target MCU.

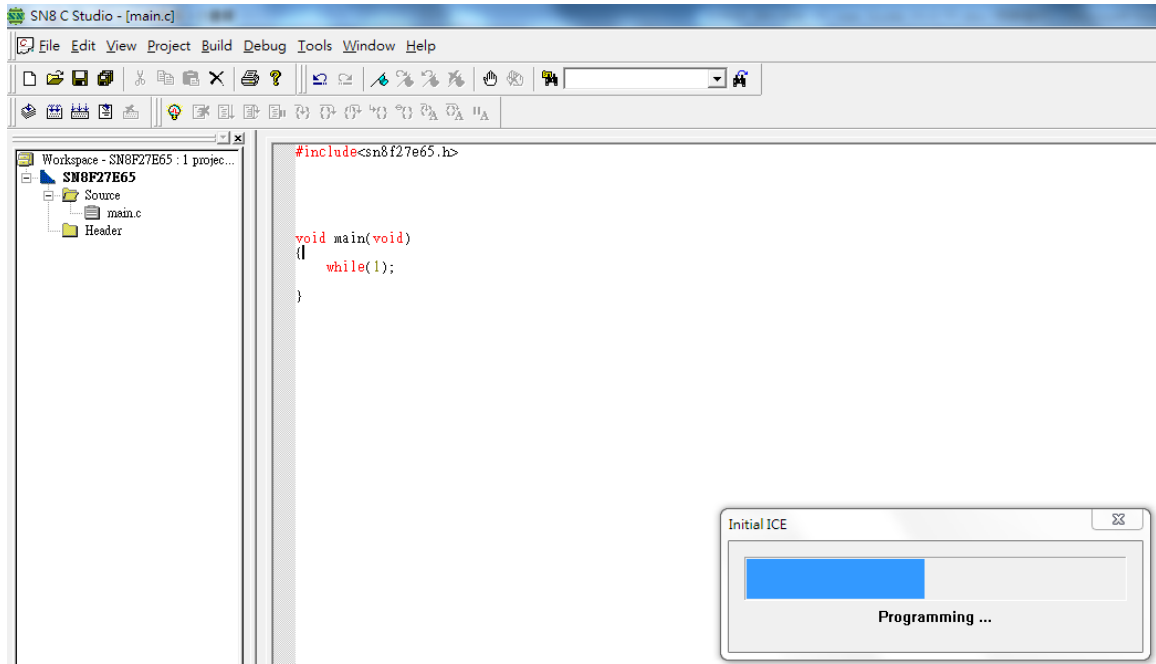
### 2.3 Power on for Target board.

- SN-Link Adapter V3 "Ok/Fail" LED is GREEN.

### 2.4 Executive SN8\_C\_Studio and open project.

### 2.5 Click

- Begin Debug(F5) via the toolbar icon or the menu Debug – Begin Debug(F5)



# 5 Support Chip

<b>SN-Link Adapter V3 SUPPORT MCUs</b>		
<b>32-Bit Cortex-M0 Series</b>	<b>8051 Flash Series</b>	<b>8-Bit Embedded ICE Series</b>
SN32F100 Series	SN8F5700 Series	SN8F25E00 Series
SN32F200 Series	SN8F5900 Series	SN8F26E00 Series
SN32F700 Series		SN8F27E00 Series
SN32F700B Series		SN8F27E90 Series
		SN8FMD20 Series
		SN8F22E80 Series

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