SUNIX Serial ISA Card Driver Installation Guide
For Windows CE 5.0

A. Driver installation

A.1 Driver installation

Step 1. Please double click "SUNIX WinCE 5.0 Driver Vx.x.x.x.msi"

Step 2. Driver will install in C:\PLATFORM\Sunix_WinCE50\

Step 3. Finish driver install wizard

A.2 Add driver into Platform Design

Step 1. Create a new platform design

Step 3. Select a BSP

Step 4. Select a design template

Step 5. in "FileView", choice "Projects" and click mouse right button.

Step 6. choice "Insert Existing Project..." and open snxcard.pbpxml in C:\PLATFORM\Sunix_WinCE50\

Step 7. Prepare a hardware target platform (please follow [**Prepare a hardware target platform**] step)

Step 8. Modify snxcard.reg (please follow [**Modify snxcard.reg**] step).

Step 9. Use "Build and Sysgen" to build OS image.

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(1). Prepare a hardware target platform

The platform setting must meet the following requirements.

1. If your motherboards have the standard serial port, then,

   Please don't have a conflict with standard serial port (IoBase or IRQ) in target device.

   (Serial Card jump setting don't like this example: 02F8, 03E8, 02E8... IRQ3, IRQ4, IRQ5)

   (Please reference your motherboard menu)

   Serial card jump setting can use of the other IOBase and IRQ.

2. In the motherboard BIOS setting, you must be to preserve IRQ for each serial card.

   Example step (AwardBIOS) (please reference your motherboard menu):

   BIOS --> PNP/PCI Configuration --> Resources Controlled By --> change setting to "Manual".

   BIOS --> PNP/PCI Configuration --> IRQ Resources --> IRQ-5 assigned to --> change setting to "Legacy ISA".

   BIOS --> PNP/PCI Configuration --> IRQ Resources --> IRQ-7 assigned to --> change setting to "Legacy ISA".

   BIOS --> INTEGRATED PERIPHERALS --> Onboard Parallel Port --> change setting to disabled.

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3. Edit C:\Platform\Sunix_WinCE50\snxcard.reg file to modify parameters for each serial port.

   Please follow [**Modify snxcard.reg**] step.

Note :

If you want to use the same motherboard standard serial port IoBase or IRQ(02F8, 03E8, 02E8... IRQ3, IRQ4, IRQ5)

You must be disabled your motherboard standard serial port, and also need to mark standard serial port registry in the

platform.reg. please follow [**Disabled motherboard step**] step.

(2). Disabled motherboard step.

BIOS --> INTEGRATED PERIPHERALS --> Onboard Serial Port 1--> change setting to disabled.

BIOS --> INTEGRATED PERIPHERALS --> Onboard Serial Port 2--> change setting to disabled.

BIOS --> INTEGRATED PERIPHERALS --> Onboard Parallel Port --> change setting to disabled.

1. **Mark standard serial port registry. Please open platform.reg in "Hardware Specific Files" under Parameters.**

Find string "[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial]" You will find this section.

```
; @CESYSGEN IF CE_MODULES_SERIAL

IF BSP_NOSERIAL !

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial]

"SysIntr"=dword:13

"IoBase"=dword:02F8

"IoLen"=dword:8

"DeviceArrayIndex"=dword:0

"Prefix"="COM"

"IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"

"Dll"="Com16550.Dll"

"Order"=dword:0

"Priority"=dword:0

; Turn on follows for Installable ISR (isr16550 supporting SOFTWARE FIFO

;     "Irq"=dword:3

;     "IsrDll"="isr16550.dll"

;     "IsrHandler"="ISRHandler"


[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial\Unimodem]

"Tsp"="Unimodem.dll"

"DeviceType"=dword:0

"FriendlyName"=LOC_FRIENDLYNAME_SERIAL

"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00

ENDIF BSP_NOSERIAL !


IF BSP_SERIAL2

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial2]

"SysIntr"=dword:14

"IoBase"=dword:03E8

"IoLen"=dword:8

"DeviceArrayIndex"=dword:1

"Prefix"="COM"

"IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"

"Dll"="Com16550.Dll"

"Order"=dword:0
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[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial2\Unimodem]

"Tsp"="Unimodem.dll"

"DeviceType"=dword:0

"FriendlyName"=LOC_FRIENDLYNAME_SERIAL2

"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00

ENDIF BSP_SERIAL2

IF BSP_SERIAL3

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial3]

"SysIntr"=dword:15

"IoBase"=dword:02E8

"IoLen"=dword:8

"DeviceArrayIndex"=dword:2

"Prefix"="COM"

"IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"

"Dll"="Com16550.Dll"

"Order"=dword:0

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial3\Unimodem]

"Tsp"="Unimodem.dll"

"DeviceType"=dword:0

"FriendlyName"=LOC_FRIENDLYNAME_SERIAL3

"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00

ENDIF BSP_SERIAL3

2. **Please use ";" characters mark all registry.**

IF BSP_NOSERIAL !

;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial]

;   "SysIntr"=dword:13

;   "IoBase"=dword:02F8

;   "IoLen"=dword:8

;   "DeviceArrayIndex"=dword:0

;   "Prefix"="COM"

;   "IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"

;   "Dll"="Com16550.Dll"

;   "Order"=dword:0

;   "Priority"=dword:0

;; Turn on follows for Installable ISR (isr16550 supporting SOFTWARE FIFO

;;   "Irq"=dword:3

;;   "IsrDll"="isr16550.dll"

;;   "IsrHandler"="ISRHandler"

```
;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial\Unimodem]
;    "Tsp"="Unimodem.dll"
;    "DeviceType"=dword:0
;    "FriendlyName"=LOC_FRIENDLYNAME_SERIAL
;    "DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
ENDIF BSP_NOSERIAL !


IF BSP_SERIAL2
;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial2]
;    "SysIntr"=dword:14
;    "IoBase"=dword:03E8
;    "IoLen"=dword:8
;    "DeviceArrayIndex"=dword:1
;    "Prefix"="COM"
;    "IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"
;    "Dll"="Com16550.Dll"
;    "Order"=dword:0


;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial2\Unimodem]
;    "Tsp"="Unimodem.dll"
;    "DeviceType"=dword:0
;    "FriendlyName"=LOC_FRIENDLYNAME_SERIAL2
;    "DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
ENDIF BSP_SERIAL2


IF BSP_SERIAL3
;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial3]
;    "SysIntr"=dword:15
;    "IoBase"=dword:02E8
;    "IoLen"=dword:8
;    "DeviceArrayIndex"=dword:2
;    "Prefix"="COM"
;    "IClass"="{CC5195AC-BA49-48a0-BE17-DF6D1B0173DD}"
;    "Dll"="Com16550.Dll"
;    "Order"=dword:0


;[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\Serial3\Unimodem]
;    "Tsp"="Unimodem.dll"
;    "DeviceType"=dword:0
;    "FriendlyName"=LOC_FRIENDLYNAME_SERIAL3
;    "DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
ENDIF BSP_SERIAL3
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(3) Modify snxcard.reg

1. Default snxcard.reg file section.

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort1]
"Prefix"="COM"
"Index"=dword:2
"DeviceArrayIndex"=dword:0
"Dll"="snxport.dll"
"IsrDll"="snxintr.dll"
"IsrHandler"="ISRHandler"
"IoBase"=dword:0
"IoLen"=dword:8
"Irq"=dword:0
"SysIntr"=dword:0
"Flags"=dword:0
"ChipID"=dword:0
[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort1\Unimodem]
"Tsp"="Unimodem.dll"
"DeviceType"=dword:0
"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
"FriendlyName"="SUNIX Port 1"

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort2]
"Prefix"="COM"
"Index"=dword:3
"DeviceArrayIndex"=dword:1
"Dll"="snxport.dll"
"IsrDll"="snxintr.dll"
"IsrHandler"="ISRHandler"
"IoBase"=dword:0
"IoLen"=dword:8
"Irq"=dword:0
"SysIntr"=dword:0
"Flags"=dword:0
"ChipID"=dword:0
[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort2\Unimodem]
"Tsp"="Unimodem.dll"
"DeviceType"=dword:0
"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
"FriendlyName"="SUNIX Port 2"

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2. **Edit C:\Platform\Sunix_WinCE50\snxcard.reg file to modify parameters for each serial port**

Example: IRQ: 5, 7   IObase: 0X0250, 0X0258

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[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort1]
"Prefix"="COM"
"Index"=dword:2
"DeviceArrayIndex"=dword:0
"Dll"="snxport.dll"
"IsrDll"="snxintr.dll"
"IsrHandler"="ISRHandler"
"IoBase"=dword:0250
"IoLen"=dword:8
"Irq"=dword:5
"SysIntr"=dword:15        ← SysInter = Irq + 0x10
"Flags"=dword:0
"ChipID"=dword:2
[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort1\Unimodem]
"Tsp"="Unimodem.dll"
"DeviceType"=dword:0
"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
"FriendlyName"="SUNIX Port 1"


[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort2]
"Prefix"="COM"
"Index"=dword:3
"DeviceArrayIndex"=dword:1
"Dll"="snxport.dll"
"IsrDll"="snxintr.dll"
"IsrHandler"="ISRHandler"
"IoBase"=dword:0258
"IoLen"=dword:8
"Irq"=dword:7
"SysIntr"=dword:17    ← SysInter = Irq + 0x10
"Flags"=dword:0
"ChipID"=dword:2
[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\SnxPort2\Unimodem]
"Tsp"="Unimodem.dll"
"DeviceType"=dword:0
"DevConfig"=hex: 10,00, 00,00, 05,00,00,00, 10,01,00,00, 00,4B,00,00, 00,00, 08, 00, 00, 00,00,00,00
"FriendlyName"="SUNIX Port 2"
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