Overview

The USB virtual printer application is a simple application to demonstrate a virtual printer functionality. Because there is no printer language parsing, the received raw data is output directly in the debug console. As a result, only plain text is suitable for testing. For other printer language support, such as postscript, implement the corresponding parser.

System Requirements

Hardware requirements

- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (Tower module/base board, and so on) for a specific device
- Personal Computer (PC)

Software requirements

• The project files for lite version examples are in:

<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_printer_virtual_plain_text_lite/<rtos>/<toolchain> For non-lite version example, the path is:

<MCUXpresso_SDK_Install>/boards/<board>/usb_examples/usb_device_printer_virtual_plain_text/<rtos>/<toolchain>.

Note

The <rtos> is Bare Metal or FreeRTOS OS.

Getting Started

Hardware Settings

Note

Set the hardware jumpers (Tower system/base module) to default settings.

Prepare the example

- 1. Download the program to the target board.
- 2. Connect the target board to the external power source (the example is self-powered).
- 3. Power off the target board. Then power on again.
- 4. Connect a USB cable between the PC and the USB device port of the board.

Note

For detailed instructions, see the appropriate board User's Guide.

Run the example on Windows7

- 1. Plug in the device, which is running the printer example, into the PC.
- 2. Wait for the PC to auto-install the driver. When the PC completes the installation, no driver is found as follows:



Figure 1: printer in device manager

Opening the device manager, these devices are shown:



Figure 2: printer in device manager

3. Test generic printer driver. Right click the device in "Other devices" group, select "Update Driver Software...", select "Browse my computer for driver software", select "Let me pick from a list of device drivers on my computer", select "Printers", select "Generic" & "Generic / Text Only", and click on "Next" and "Yes" to install.

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/	Update Driver Software - Freescaleksdk printer demo	
	How do you want to search for driver software?	
	Search automatically for updated driver software Windows will search your computer and the internet for the latest driver software forum driver where when the driver is the internet of th	
	ror your device, unless you ve disabled this feature in your device installation settings.	
	Browse my computer for driver software	
	Locate and install driver software manually.	
	Cancel)
	🚊 Update Driver Software - Freescaleksdk printer demo	
	Browse for driver software on your computer	
	Search for driver software in this location:	
	E:\repos\mcu-sdk\middleware\usb\example\usb_device_printer_pl Browse	
	Include subfolders	
	[]	
	Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver	
	software in the same category as the device.	
	Next Cancel	
	Update Driver Software - Freescaleksdk printer demo	
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	Select your device's type from the list below.	
	Common hardware types:	
	Ports (COM & LPT)	
	Processors	
	So host adapters	
	Smart Card Hiter Smart card readers	
	Sound, video and game controllers	
	A	
	Next Cancel)
	Update Driver Software - Freescaleksdk printer demo	
	Add Printer Wizard	
	Select the manufacturer and model of your printer. If your printer came with an installation	
	disk, click Have Disk. If your printer is not listed, consult your printer documentation for a compatible printer.	
	Manufacturer A Printers	
	Generic Generic / Text Only	
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	Generic Gestetner HP infotec This driver is digitally signed. Tell me why driver signing is important Update Driver Warning Installing this device driver is not recommended because Windows cannot verify that it is compatible with your hardware. If the driver is not compatible, your hardware will not work correctly and your computer might become unstable or stop working completely. Do you want to continue installing this driver? Yes No)

Figure 3: printer in device manager

- 4. After installing the driver, the "Generic / Text Only" printer is available in the "Devices and Printers"
- 5. Print one text file using this printer.

printer_text.txt - Notepad	- • •
File Edit Format View Help	
KSDK USB device pr¦inter demo.	*
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Figure 4: printer in device manager

The debug console data is as follows:



Figure 5: printer in device manager

Run the example on Windows10

- 1. Plug in the device, which is running the printer example, into the PC.
- 2. Wait for the PC to auto-install the driver. When the PC completes the installation, opening the device manager, these devices are shown:



Figure 6: printer in device manager

3. Right click on the NXPksdk printer demo and select "Properties", in the pop-up window, select the "Events" and find the configured port.

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neral Driver	Details Events	
NXPks	dk printer demo	
Events		
Timestamp	Description	
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formation Device USBPR vas configured.	INT\NXPksdk_printer_demo\7&5daf5f7&0 <mark>&</mark> USB00	8
Driver Name: pr Class Guid: {62	mms013.inf F9C741-B25A-46CE-B54C-9BCCCE08B6F2}	
Driver Name: pr Class Guid: {62 View All Even	mms013.inf F9C741-B25A-46CE-B54C-9BCCCE08B6F2} ts	

Figure 7: find port

4. In Control Panel, open the "Devices and Printers" window, click "Add a printer".

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V Devices (4)								
0								
Dell MS116 USB	DELL P2419H	NXI 53370	USB Audio					
Optical Mouse		10.25510	000710010					
V Printers (5)								
0								
2F-FX	Fax	Microsoft Print to	Microsoft XPS	Send To				
C3373 PCL 6		PDF	Document writer	Onenote 2016				
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2	•							
HUAWEI P9	J-Link	MCU PRINTER						
		DEMO						
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Figure 8: Add a printer

5. In pop-up window, select "The printer that I want isn't listed", select "Add a local printer or network printer with manual settings", select the port that showed in previous "Events" tab, select "Generic" & "Generic / Text Only", select "use the driver that is currently installed", and click on "Next" and "Yes" to install.

💕 Add a device

3	NXP00405 on NXWSGFP001 Printer	8	NXP00407 on NXWSGFP001 Printer	
3	NXP00413 on NXWSGFP001 Printer	8	NXP00416 on NXWSGFP001 Printer	
3	NXP00417 on NXWSGFP001 Printer	8	NXP00418 on NXWSGFP001 Printer	

	Ne	Cancel				
🖶 Add Printer						
Find a printer by oth	er options					
O My printer is a little olde	er. Help me find it.					
○ Find a printer in the dire	ctory, based on location or feature					
O Select a shared printer b	y name					
		Browse				
Example: \\computer http://computername						
○ Add a printer using a TC	○ Add a printer using a TCP/IP address or hostname					
O Add a Bluetooth, wirele	ss or network discoverable printer					
Add a local printer or ne	twork printer with manual settings					
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Figure 9: Add a printer

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Use the driver that is currently installed (recommended)						

Figure 10: Add a printer

- 6. After above steps, a "Generic/Text Only" printer is available in "Devices and Printers".
- 7. Print one text file using this printer.

printer_text.txt - Notepad	
File Edit Format View Help	
KSDK USB device pr¦inter demo.	*
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Figure 11: test printer

The debug console data is as follows:



Figure 12: debug console

- 8. Test postscript printer driver. Right click the "USB printing Support" and select "Uninstall". Unplug and plug in again.
- 9. Wait for the PC to install the driver as in step 2.
- 10. In Control Panel, open the "Devices and Printers" window, click "Add a printer", In pop-up window, select "The printer that I want isn't listed", select "Add a local printer or network printer with manual settings", select the port that showed in previous "Events" tab, select "Microsoft" & "Microsoft PS Class Driver", select "use the driver that is currently installed", and click on "Next" and "Yes" to install.
- 11. Print one text file using this printer. For example, if printing the same file as in step 7, the postscript data is displayed in the debug console. The demo does not parse the data and outputs it to the debug console directly.