How to connect Display ST7780v 1.3inch

1. Create Overlay file for NRF5340

\$zephyr/sample/display/lvgl/boards/nrf5340pdk_nrf5340_cpuapp.overlay

CONFIG_SPI=y CONFIG_SPI_1=y

CONFIG_ST7789V=y

CONFIG_LVGL_DISPLAY_DEV_NAME="ST7789V" CONFIG_LVGL_COLOR_DEPTH_16=y CONFIG_ST7789V_RGB565=y CONFIG_LVGL_HOR_RES_MAX=240 CONFIG_LVGL_VER_RES_MAX=240 CONFIG_LVGL_VDB_SIZE=10 CONFIG_LVGL_BITS_PER_PIXEL=16 CONFIG_LVGL_DPI=130 CONFIG_LVGL_COLOR_16_SWAP=y

Create configuration file nrf5340pdk_nrf5340_cpuapp.conf
 \$zephyr/sample/display/lvgl/boards/nrf5340pdk_nrf5340_cpuapp.conf

```
/*
* Copyright (c) 2019 Jan Van Winkel <jan.van_winkel@dxplore.eu>
* Copyright (c) 2019 PHYTEC Messtechnik GmbH
* SPDX-License-Identifier: Apache-2.0
*/
&spi1 {
      status = "okay";
      cs-gpios = <&gpio0 10 GPIO_ACTIVE_LOW>; /* D10 */
      st7789v@0 {
             compatible = "sitronix,st7789v";
             label = "ST7789V";
             spi-max-frequency = <2000000>;
             reg = <0>;
             cmd-data-gpios = <&gpio0 9 GPIO_ACTIVE_LOW>;
             reset-gpios = <&gpio0 8 GPIO ACTIVE LOW>;
             width = <240>:
```



3. Add spi module in file nrf5340pdk_nrf5340_cpuapp.dts (\$sdk_folder)\ncs\v1.4.1\zephyr\boards\arm\nrf5340dk_nrf5340\nrf5340pdk_nrf5340_cpuapp.dts

```
#include <nordic/nrf5340 cpuapp gkaa eng a.dtsi>
#include "nrf5340_cpuapp_common.dts"
/{
       model = "Nordic NRF5340 PDK NRF5340 Application";
       compatible = "nordic,nrf5340-pdk-nrf5340-cpuapp";
       chosen {
              zephyr,sram = &sram0_image;
              zephyr,flash = &flash0:
              zephyr,code-partition = &slot0 partition;
              zephyr,sram-secure-partition = &sram0_s;
              zephyr,sram-non-secure-partition = &sram0 ns;
       };
};
&spi1 {
       compatible = "nordic,nrf-spim";
       status = "okay";
       sck-pin = <11>:
       miso-pin = <12>;
```

mosi-pin = <13>; };

4. Connect NRF5340 and Display follow the table

NRF5340	Display		
P0.8	RESET or RES		
P0.9	DC or RS		
P0.10	CS		
P0.11	SCK		
P0.13	SDA		
3.3V	VCC and Vio		
GND	GND		



5. Compile and upload

RF Connect v	3.6.1	19-	
APPS	SETTINGS		
8	General tool for development and testing with Bluetooth Low Energy official, v2.4.2	Open	•
Λ	Getting Started Assistant Guide to set up the nRF Connect SDK Update	Open	
A	Programmer	0	
IJ,	Tool for flash programming of nRF SoCs official, v1.4.8	Open	
ø	Toolchain Manager Install and manage tools to develop with the nRF Connect SDK (NCS) official, v0.9.0	Open	•
	Direct Test Mode		



display - SEGGER Embedded Studio for ARM (Nordic Edition) V5.10d (64-bit)

SEGGER Embedded Studio				
nRF Connect Options				
nRF Connect SDK Release:		nRF Connect Toolchain Version:		
1.4.1 (C:/Users/Wa/ncs/v1.4.1)	-	1.4.1	•	
Projects:			-	-
lvgl			(-	- 1
3 Getting Started 🛛 Short Range 🗌 Cellular 🔲	Drivers / Periph	neral 🔲 Other Nordic Projects		
nrf5340pdk_nrf5340_cpuapp			E	- 1
🛛 Nordic Thingy 🛛 Nordic kits 🗌 3rd party kit	s			
Build Directory				

Please select project name lvgl from

→ ~ ↑ 📙 > Wa >	ncs > v1.4.1 > zephyr > samp	les > display					
ganise 👻 New folder							
N	lame	Date modified	Туре	Size			
P Quick access ☐ Desktop	cfb cfb_custom_font	29/12/2020 00:47 29/12/2020 00:47 29/12/2020 00:47	File folder File folder File folder				
🗄 Documents 🛛 🖈	grove display	29/12/2020 00:47	File folder				
📰 Pictures 🛛 🖈 👖	lvgl	04/01/2021 16:49	File folder				
ncs 🖈							
SEGGER Embedded Studio							
🔊 nRF Cor	nnect Options						
RF Connect SDK Rele	nnect Options	n	F Connect Toolch	ain Version:			
RF Connect SDK Rele	ease: ease:	in E	F Connect Tookh .4.1	ain Version:	-		
RF Connect SDK Rel 1.4.1 (C:/Users/Wa/n	nnect Options ease: ics/v1.4.1)	in L	F Connect Tookh .4.1	ain Version:	×		
RF Connect SDK Rel 1.4.1 (C:/Users/Wa/n tojects: Ivgl	nnect Options ease: ecs/v1.4.1)	nf L	F Connect Tookh .4.1	ain Version:			-
RF Connect SDK Rel 1.4.1 (C:/Users/Wa/n	nnect Options ease: hts/v1.4.1)	an L	F Connect Toolch	ain Version:	-		-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n tojects: lvgl Getting Flarted 21	ease: ease: ess/v1.4.1)	Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj	ain Version:			-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n Nojects: Ivgl Getting Flored Si oard Name:	ease: ease: ecs/v1.4.1)	Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj	ain Version:			-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: Ivgl Getting Function (2) Relevant (2) Getting Function (2) Relevant (2) RF Connect SDK Relevant (2) R	ease: ease: eas/v1.4.1)	Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj	ain Version: ects			-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n Nojects: Ivgl 3 Getting Started @ Noard Name: nrf5340pdk_nrf5340_	ease: eas/v1.4.1)	Drivers / Peripheral	F Connect Tookh .4.1 Other Nordic Proj	ain Version: ects		· ·	-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: lvgl 3 Getting Started @ toard Name: nrf5340pdk_nrf5340_ 1 Nordic Thingy Ø	ease: ecs/v1.4.1) Short Bange Cellular (cpuapp	Drivers / Peripheral	F Connect Tookh .4.1 Other Nordic Proj	ain Version:	2	¥ •	-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: lvgl 3 Getting Started 2 deard Name: nrf5340pdk_nrf5340_ 3 Nordic Thingy 2	ease: ecs/v1.4.1) Short Pange Cellular (cpuapp Nordic kits 3rd party (Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj	ain Version: ects		¥ •	-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: lvgl 3 Getting Storted 2 coard Name: nrf5340pdk_nrf5340_ 3 Nordic Thingy 2 coard Line Corry	ease: ecs/v1.4.1) Short Page Cellular (cpuapp Nordic kits 3rd party (Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj	ain Version: ects		() .	-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: lvgl 3 Getthe Started 2 oard Name: nrf5340pdk_nrf5340_ 3 Nordic Thingy 2 auid Directory C:/Users/Wa/ncs/v1.4	ease: ecs/v1.4.1) Short Bange Cellular (cpuapp Nordic kits 3rd party (Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj f5340_cpuapp	ain Version: ects	-		-
RF Connect SDK Rele 1.4.1 (C:/Users/Wa/n rojects: lvgl 3 Getting Storted 2 soard Name: nrf5340pdk_nrf5340_ 3 Nordic Thingy 2 solution Storted 4 Nordic Thingy 2 solution Storted 3 Nordic Thingy 2 solution Storted 4 Nordic Thingy 2 solution Storted 5 Nordic Thingy 2 Storted 5 Nordic Thingy 3 5 N	nnect Options ease: ecs/v1.4.1) Short Bange Cellular cpuapp Nordic kits 3rd party 1.1/zephyr/samples/display,	Drivers / Peripheral	F Connect Toolch .4.1 Other Nordic Proj f5340_cpuapp	ain Version: ects	-		-

(\$sdk_folder)\ncs\v1.4.1\zephyr\samples\display\lvgl

6. Build

🗇 Ivgl - SEGGER Embedded Studio for ARM (Nordic Edition) V5.10d (64-bit) - Licensed to wasan wiyarun - Zanegrowth

Project Explorer	* H	Build zephyr/zephyr.elf Rebuild zephyr/zephyr.elf Clean zenhyr/zephyr.elf	F7 Alt+F7	
Project Items C	oc 🖌	Build Solution	Shift+F7	Jan Van Win
Solution 'lvgi' D D dts files 4 files, modified options J Solution 'build'		Rebuild Solution Clean Solution	Alt+Shift+F7	fier: Apache
Project 'all' Project 'app/libapp.a' Control of the second sec	* <mark>*</mark>	Compile main.c	Ctrl+F7	lay.h>
C_COMPILER_app The	►.a	Build and Debug	Ctrl+T, F5	
Output Files Iibapp.a	!#	Build and Run	Ctrl+T, Ctrl+F5	
Project 'modules/lvgl/libmodules_li	1	Cancel Bulld	Ctri+.	IG LOG DEFAI
Project 'modules/nordic/libmodules_	÷.2	Build Configurations		n>
Project 'modules/nrf/drivers/hw_cc310/l		Set Active Build Configuration	+	P);
Project modules/htt/llb/tatal_error/lib		Batch Build	+	
Project 'zephyr/arch/arch/arm/core/aarc		Parallel and Unity Build	•	- 011
Project 'zephyr/arch/arch/arm/core/aarc				$[11] = \{0\};$
Project 'zephyr/arch/arch/arm/core/aarc		Show Build Log	Ctrl+B, Ctrl+T	evice *displ
Project 'zephyr/arch/common/libarch_c			lv_obj_t *hel	lo_world_labe



Output

