

## Enable STM32 Discovery Eval

In order to activate the Demo applications on ST Discovery evaluation board, the user need to make several steps as described below, after the installation, of the STM32 release, on the user PC.

Steps for porting:

• SPPDemo as an example: open the SPPDemo application with IAR/Keil SDK.

SPPDemo - IAR Embedded Workbench IDE		j X
<u>File Edit View Project Tools Window H</u> elp		
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Workspace ×		- x
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×		_
messages listc Main.c portsm.s queue.c SPPDemo.c startup_stm32t40_41xxx.s stm32t4xc_dma.c stm32t4xc_dma.c stm32t4xc_galo.c stm32t4xc_yscdp.c stm32t4xc_yscdp.c stm32t4xc_usent.c system_stm32t4xc.t tasks.c timers.c Linking SPPDemo.out Converting Total number of evens.0 Total number of evens.0		E
m ]Ready	Errors 0, Warnings 0 NUM	

• Change In the project options (Under- General Options, Target) the Device to: ST STM32F407IG, from the ST devices, in the drop down list.

Options for node "SPPDe	emo"
Category: General Options Runtime Checking C/C++ Compiler Assembler Output Converter Custom Build Build Actions Linker	Target       Output       Library Configuration       Library Options       MISRA-C:200.         Processor variant       Processor variant
Debugger Simulator Angel CMSIS DAP	© Core Cortex-M4F ♥ © Device ST STM32F407VG ■
GDB Server IAR ROM-monitor I-jet/JTAGjet J-Link/J-Trace TI Stellaris Macraigor PE micro RDI ST-LINK Third-Party Driver	Endian mode <u>F</u> PU © Little © Big © BE <u>3</u> 2 © BE <u>8</u>
XDS 100/200/ICDI	OK Cancel

• Under C/C++ Compiler option in the Preprocessor tab change the Defined symbols, HSE\_VALUE to 8000000.

Options for node "SPPDe	mo"
Category: General Options Runtime Checking C/C++ Compiler Assembler Output Converter Custom Build Build Actions Linker Debugger Simulator Angel CMSIS DAP GDB Server IAR ROM-monitor I-jet/JTAGjet J-Link/J-Trace TI Stellaris Macraigor PE micro RDI ST-LINK Third-Party Driver XDS 100/200/ICDI	Factory Settings         Multi-file Compilation         Discard Unused Publics         Language 2 Code Optimizations Output List Preprocessor         Ignore standard include directories         Additional include directories: (one per line)         \$PROJ_DIR\$\         \$PROJ_OIR\$\         \$PROJ_OIR\$\         \$PROJ_OIR\$\         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$         \$PROJ_OIR\$     <
	OK Cancel

• Under the ST-LINK, in the project setting choose SWD and in the Reset drop down list choose: Connect during reset.

Category:       Factory Settings         General Options       Factory Settings         Runtime Checking       C/C++ Compiler         Assembler       Output Converter         Output Converter       ST-LINK         Debugger       Simulator         Simulator       Angel         CMSIS DAP       GDB Server         IAR ROM-monitor       JTAG         I-jet/JTAGjet       JLink/J-Trace         TI Stellaris       Macraigor         Macraigor       SWD         PE micro       RDI         STLINK       2000         KHz       Macraigor         PE micro       RDI         STLINK       OK

In order to work with the UART console, change the I/O definition, in
 Platform/HALCFG.h file; to UART 2 and use PA2 as the TX and PA3 as the RX pin
 (The user is free to choose other free I/Os, for the UART console). Also change the LED
 I/O in the same file, to PD13 for the Orange LED. After the changes, the user
 HALCFG.h file needs to look like the one in the picture below.



• In order to work with the Bluetooth CC256x Adapter board via UART HCI, first change the UART to non DMA one. Remove the **HCITRANS.c** file from the Bluetopia Group. Add **Bluetopia/hcitrans/HCITRANS.c** file to the Bluetopia Group. Below a picture, with the file location in the IAR SDK workspace.

SPPDemo - IAR Embedded Workbench IDE	International In		- 0 X
<u>File Edit View Project Tools Window</u>	Help		
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Workspace	× HALCFG.h   HCITRCFG.h Main.c tasks.c		f0 🕶 🗙
Debug	281 - )		
Files 8:	<b>10</b> , 282 - }		A
🛛 🗍 SPPDemo - Debug 🗸	283 294 BTDS (restaThread/TorrisTED 116 MILL).		
H Application	285		
HAL.c	286 /* Loop forever and process UART characters. */		
HE Main.c	287 while(1)		
Ha Bluetopia	289 ProcessCharacters (NULL);		
HE BTPSKRNLc	290		
BTPSVEND.c	291 BTPS_Delay(200);		
	293 - }		
-B FreeRTOS	294 }		
- STM32_StdPeriph_Lib	295 296 // The following is the Main amplication entry point This function #/		
L 🕀 🗀 Output	297 /* will configure the hardware and initialize the OS Abstraction */		
	298 /* layer, create the Main application thread and start the scheduler.*/		
	299 int main(void)		
	301		
	302 void *Handle;		
	303 Boolean_t Done;		
	305 HAL_ConfigureHardware();		E
	306		
SPPDemo	307 /* Create the Main Application Thread. */	1	
,			F V
Messages		File	Line
Building configuration: SPPDemo - I	Debug		
Updating build free			
SPPDemo.out			
Converting			
Tatal muchas of surgery 0			
Total number of warnings: 0			
retartion of the maningle of			
2			
Build Debug Log			×
C:\Platforms\STM32\CC256x STM32 FreeRTOS E	luetopia SDK_6\V4.0.2.1\Bluetopia\hcitrans\HCITRANS.c	Errors 0, Warnings 0	NUM

- For the Discovery HCI UART I/O definition, change the
  - **Bluetopia/hcitrans/HCITRCFG.h** file, to UART 3 and use: PD8 as the TX, PD9 as the RX, PD12 as RTS, PD11 as CTS (The user is free to choose other free I/Os, for the UART HCI). Also change the Bluetooth RESET I/O in the same file, to PE14. After the changes, the user **HCITRCFG.h** file needs to look like the one in the picture below.

ୡ SPPDemo - IAR Embedded Workbench IDE		
<u>File Edit View Project Tools Window H</u> elp		
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Worksnare x		
Debug	HALCFGIN HEIREFGIN	· · · · ·
- Veoug	34 /* consult the processor's documentation to determine what pins are */	
Files 😤 🛱 🔺	35 /* available for the desired UART. */	
BTPSKRNLh	30 /* NOID * INE IAD, KAD, KIS and CIS plus MOSI DE map-able to the */ 37 /t celected HADP. The DECET win may be any available CDIO t/	
🗕 🔚 BTTypes.h	38 /* * NOTE * The DMA settings (Number = 1 or 2. Stream and channel) */	
📙 📙 cmsis_iar.h	39 /* must map to the RXD and TXD streams for the selected */	
	40 /* UART. */	Π.
Core_cm4_simd.h	41 #define HCITR_UART 3	=
Core_cmFunc.h	42	1
Core_cminstr.h	43 #define HCITR_TXD_PORT D	
DLib_Contig_Norm	44 #DELINE DOLIK_IAD_FIN C	
DLib_Defaults.n	46 #define HCITR RXD PORT D	
DLID_Product.n	47 #define HCITR RXD PIN 9	
Dub_Inreads.n	48	
FreeBTOSConfigh	49 #define HCITR_RTS_PORT D	
	50 #define HCITR_RTS_PIN 12	
	51	
- HOTROFGh	SZ #define HCITE_CIS_PORT D	
HCITypes.h	53 #define mulik_ui5_Pin 11	
HOUSBT.h	55 #define HCITR RESET PORT E	
- 🖌 intrinsics.h	56 #define HCITR RESET PIN 14	
📙 🛏 🔝 listh	57	
🛏 🗋 mpu_wrappers.h	58 /* The following definitons define the DNA infomation for receive and*/	
📄 📄 portable.h	59 /* transmit on the HCI UART. This includes the DMA number (either 1 */	
portmacro.h	60 /* or 2) as well as the stream and channel. */	
D projdefs.h	61 /* * NOTE * The DMA information MUST map to the receive and transmit */	
I I I aueue h	62 /* UMA for the specified UARI (see the UMA sections of the */	
SPPDemo		н на селото
×		
Messages		File Line
Building configuration: SPPDemo - Debug		
Updating build tree		
HALC		
HUTHANS.c		
Main.c		
SPPDomo out		
Converting		
Conversing		
Total number of errors: 0		
Total number of warnings: 0		
7		
10 m		
Des de		
Keady	Error	rs 0, Warnings 0 NUM

• After the project settings changed and the two files changed, rebuild the project.

• The following screen picture should be on the terminal.

Putty COM9 - Putty Company	J
OpenStack().	
Bluetooth Stack ID: 1	
Device Chipset: 4.1	
BTPS Version : 4.0.2.1	
Project Type : 6	
FW Version : 7.26	
App Name : SPPDemo	
App Version : 0.3	
LOCAL BD_ADDR: 0x0017E950625D	
***************************************	
* Command Options: Server, Client, Help *	
*********************************	
Choose Mode>	-