

Мікропроцесорна техніка

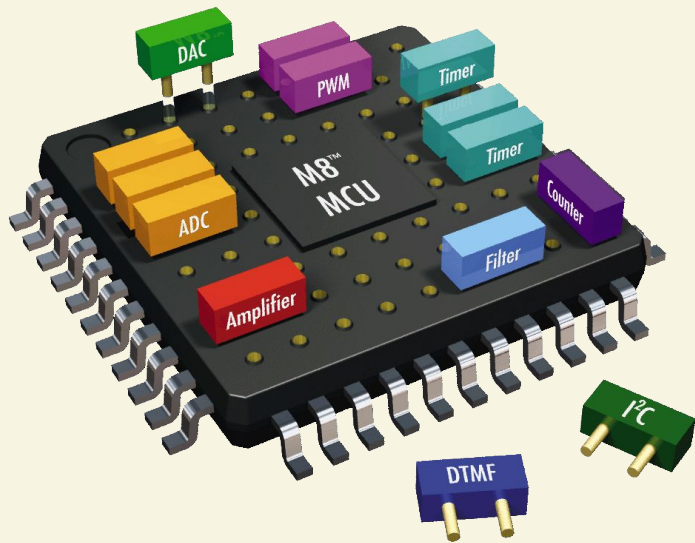
(лекція 1)
Благітко Б.Я.
2019 р.

PSoC Creator 4.2
Designing with PSoC 3/5



- Знайомство з PSoC 3/5
- Основні можливості мікроконтролера
- Інструментальні засоби розробки PSoC 3/5 Development kit
- Програмні засоби розробки Creator 3.0

Що таке PSoC 3/5?



PSoC 3/5 = Програмована система на кристалі для реалізації вбудовуваних систем **низької вартості з мінімальною кількістю зовнішніх компонент**

PSoC 3/5 включає в себе можливість обробки аналогових, цифрових і змішаних сигналів, а також можливість формування аналогових і цифрових сигналів, охоплюючи широкий спектр прикладних задач

- **Особливості PSoC 3/5:**
 - Реконфігуровувані Аналогові модулі:
 - Вбудовані АЦП і ЦАП, аналогові фільтри різних типів, підсилювачі аналогових сигналів, компаратори, аналогові модулятори і т. д.
 - Реконфігуровувані Цифрові модулі:
 - Вбудовані таймери, лічильники, PWM, UART, SPI, IrDA, I2C і т. д.
 - Flash від 4КВ до 32КВ для зберігання програми
 - SRAM от 256В до 2КВ для зберігання даних
 - Процесорне ядро - МК8051, CISC, 4MIPS

Фільтри

- 2-4 полюсні фільтри на комутованих конденсаторах низьких частот, смугові, загороджувальні, верхніх частот

Підсилювачі

- Підсилювач із програмованим коефіцієнтом підсилення
- Інструментальні підсилювачі
- Інвертуючі підсилювачі

Програмовані компаратори

- Компаратор із програмованим порогом спрацювання
- Тригер Шмідта із програмованим порогом спрацювання

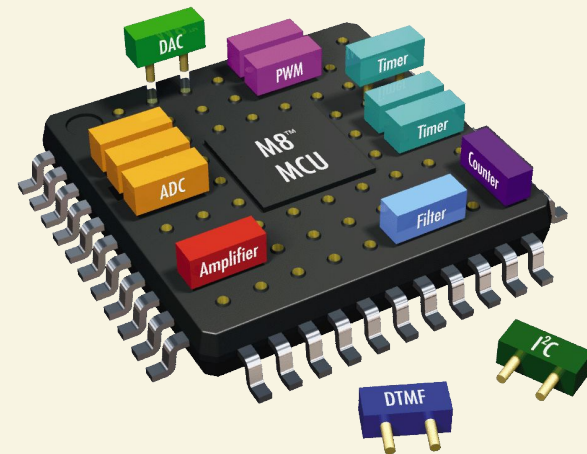
DTMF генератор і детектор

А/Ц Перетворювачі

- Послідовного наближення
- Сигма-дельта 8-14 біт
- Накоплювальний 8-14 біт

Ц/А Перетворювачі

- 6, 8, и 9-бітні ЦАП
- 6 и 8-бітні перемножуючі ЦАП



8, 16, 24, 32-бітні таймери

8, 16, 24, 32-бітні лічильники імпульсів

8, 16-бітні ШІМ

8, 16-бітні Dead Band Генератори

- (генерація 2-о фазних сигналів для управління силовими ключами)

Генератори псевдо-випадкових сигналів (PRS)

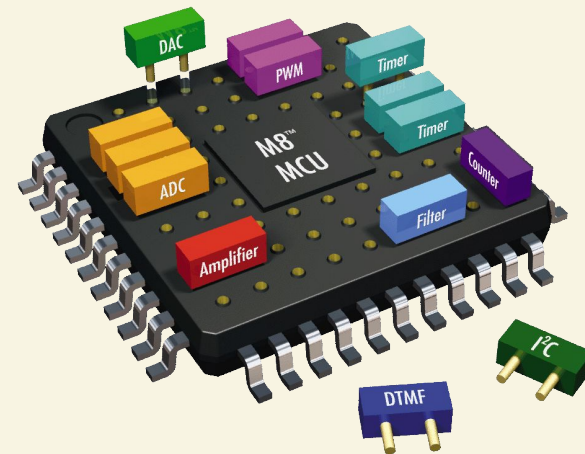
Генератори цифрових контрольних сум (CRC)

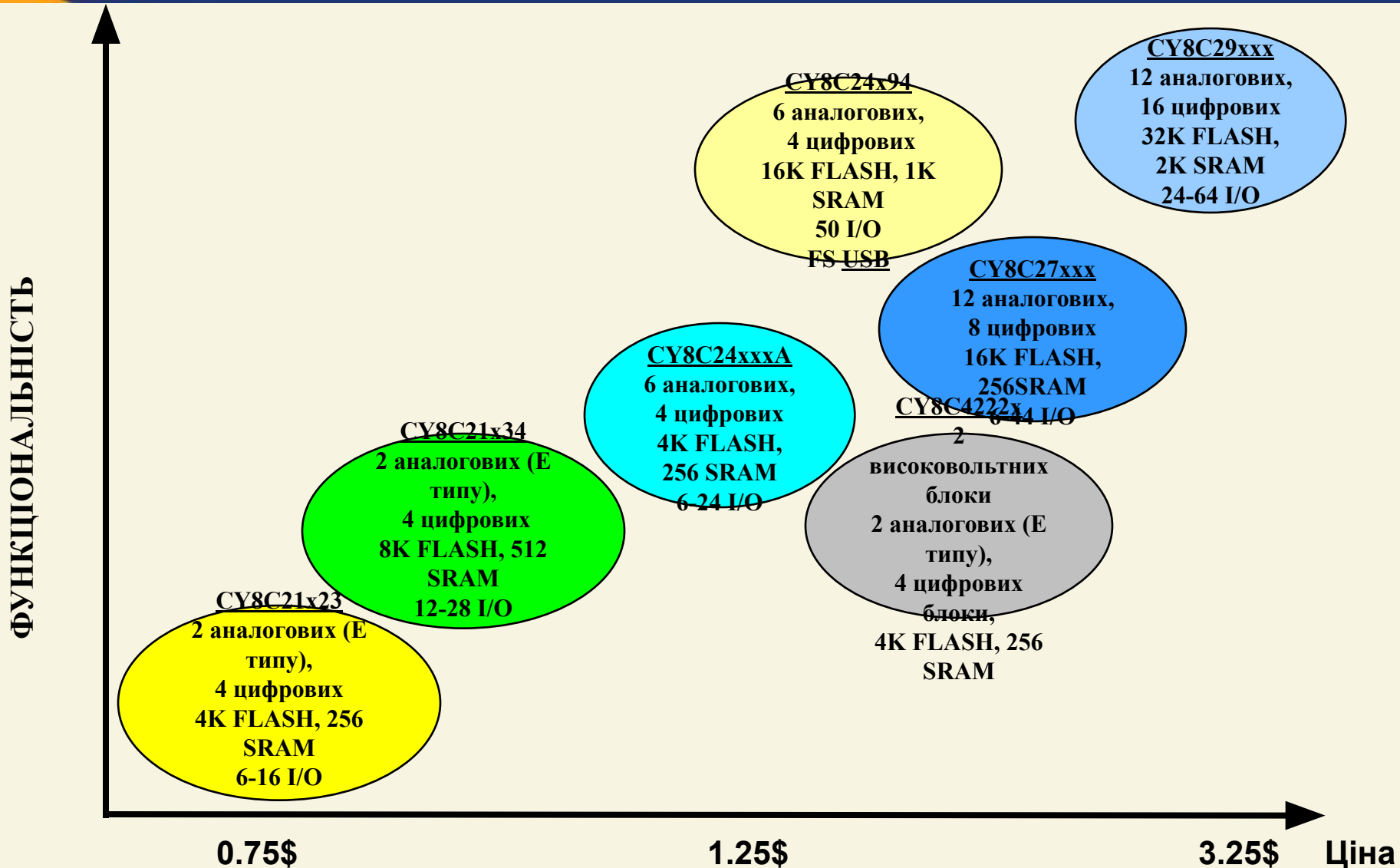
I²C майстер/підлеглий

SPI майстри/підлегли

Повнодуплексні UART

IrDA приймачі та передавачі





Всі кристали сімейства PSoC не містять Pb починаючи з 2005 року!

- Номери елементів, які не містять Pb перед температурним кодом мають мітку ‘X’
- Наприклад:

Стандартний номер елемента = CY8C27443-24PI

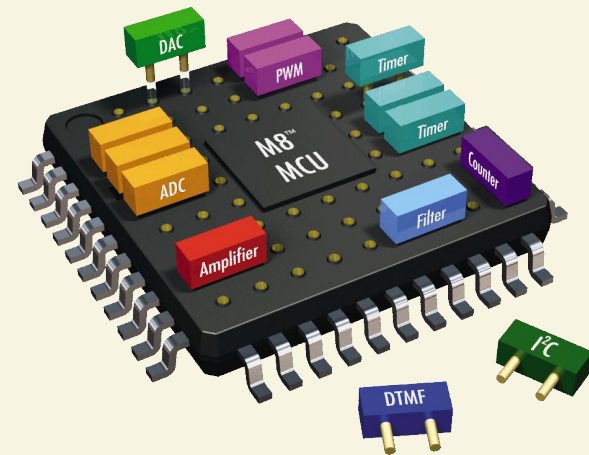
Номер елемента,

який не містить Pb

= CY8C27443-24PXI

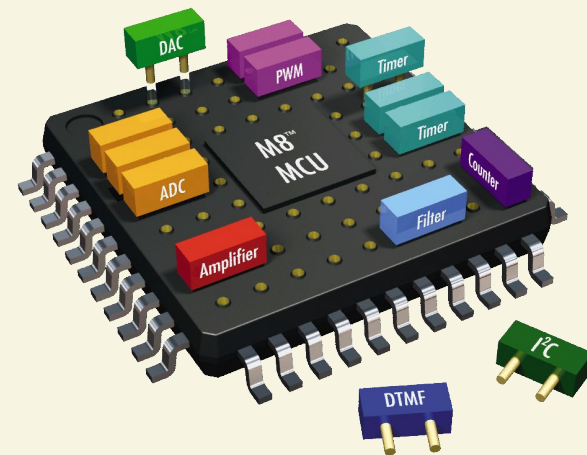


- Інтегроване середовище розробника PSoC Creator
- Оцінювальні плати
- Програматори
- Апаратні емулятори



PSoC Creator – це:

- Інтуїтивний інтерфейс
- Простота з'єднань
- Підтримка динамічної реконфігурації процесора



Оптимальними для PSoC являються задачі, коли необхідна обробка аналогових сигналів на апаратному рівні (підсилення, фільтрація, АМ/ФМ модуляція, демодуляція) із наступним перетворенням в цифрову форму в смузі аналогових сигналів до 100 кГц.

Виграш полягає в переносі зовнішніх дискретних компонентів у середину процесора.

PSoC Creator 2.1

File Edit View Debug Project Build Tools Window Help

Workspace Explorer

Source Components Datasheets Results

Start Page

PSoC® Creator™

简体中文 日本語 한국어 English

Recent Projects

- HelloWorld_Blinky01.cywrk
- CapSense_CSD_Design01...
- CapSense_CSD_Design01...
- CharLCD_CustomFont01.c...
- CharLCD_CustomFont01.c...

Create New Project...
Open Existing Project...

Getting Started

- PSoC Creator Start Page
- Quick Start Guide
- Intro to PSoC
- Intro to PSoC Creator
- PSoC Creator Training
- Help Tutorials
- Getting Started With PSoC 3
- Getting Started With PSoC 5

Examples and Kits

- Find Example Project...
- No Kit Packages Installed

PSoC Creator News and Information

Happy Lunar New Year!
Posted on 02/11/2013

Gong Xi Fa Cai! As many of my friends and colleagues are celebrating the New Year and welcoming in the year of the water snake, I wanted to take a minute and wish you all well. May the New Year bring each of you prosperity, good luck and a new PSoC design.

[Read More](#)

Tips + Tricks: Menu Customization
Posted on 01/24/2013

Did you know you can create a customized menu in PSoC® Creator? Right click in a blank area of the top menu and select customize from the

Notice List

0 Errors 0 Warnings

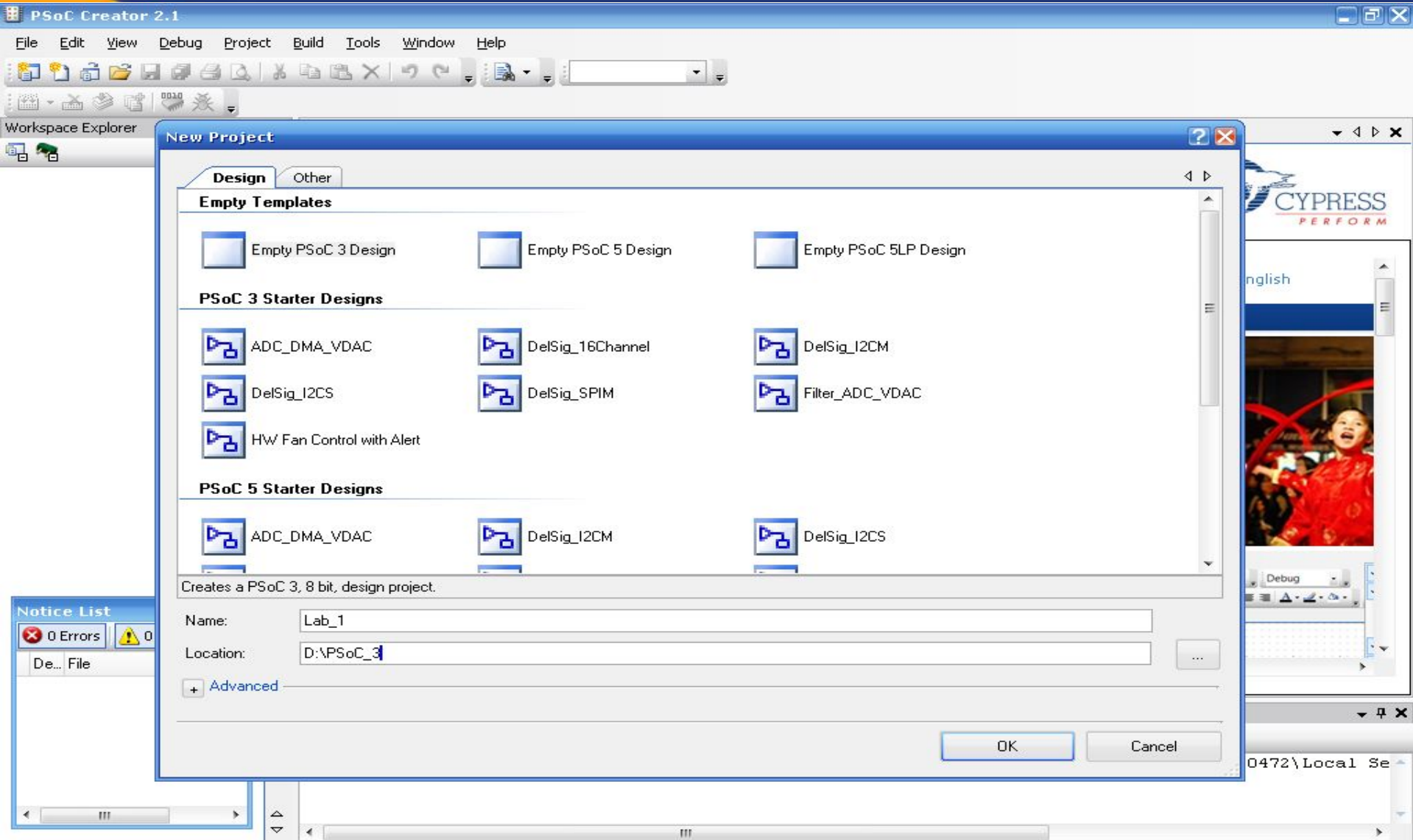
De... File Error L

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se

File – New - Projekt



The screenshot displays the PSoC Creator 2.1 application window. The main menu bar includes File, Edit, View, Debug, Project, Build, Tools, Window, and Help. The toolbar contains various icons for file operations and project management. The 'New Project' dialog box is open, showing the 'Design' tab. It lists several project templates under three categories: 'Empty Templates', 'PSoC 3 Starter Designs', and 'PSoC 5 Starter Designs'. The 'Name' field is set to 'Lab_1' and the 'Location' field is set to 'D:\PSoC_3'. The 'Advanced' options are expanded. The 'Notice List' on the left shows 0 errors and 0 warnings. The status bar at the bottom indicates 'Ready' and shows 0 errors, 0 warnings, and 0 notes.

PSoc Creator 2.1

File Edit View Debug Project Build Tools Window Help

Workspace Explorer

New Project

Design Other

Empty Templates

- Empty PSoC 3 Design
- Empty PSoC 5 Design
- Empty PSoC 5LP Design

PSoC 3 Starter Designs

- ADC_DMA_VDAC
- DelSig_16Channel
- DelSig_I2CM
- DelSig_I2CS
- DelSig_SPIM
- Filter_ADC_VDAC
- HW Fan Control with Alert

PSoC 5 Starter Designs

- ADC_DMA_VDAC
- DelSig_I2CM
- DelSig_I2CS

Creates a PSoC 3, 8 bit, design project.

Name: Lab_1

Location: D:\PSoC_3

+ Advanced

OK Cancel

Notice List

0 Errors 0 Warnings

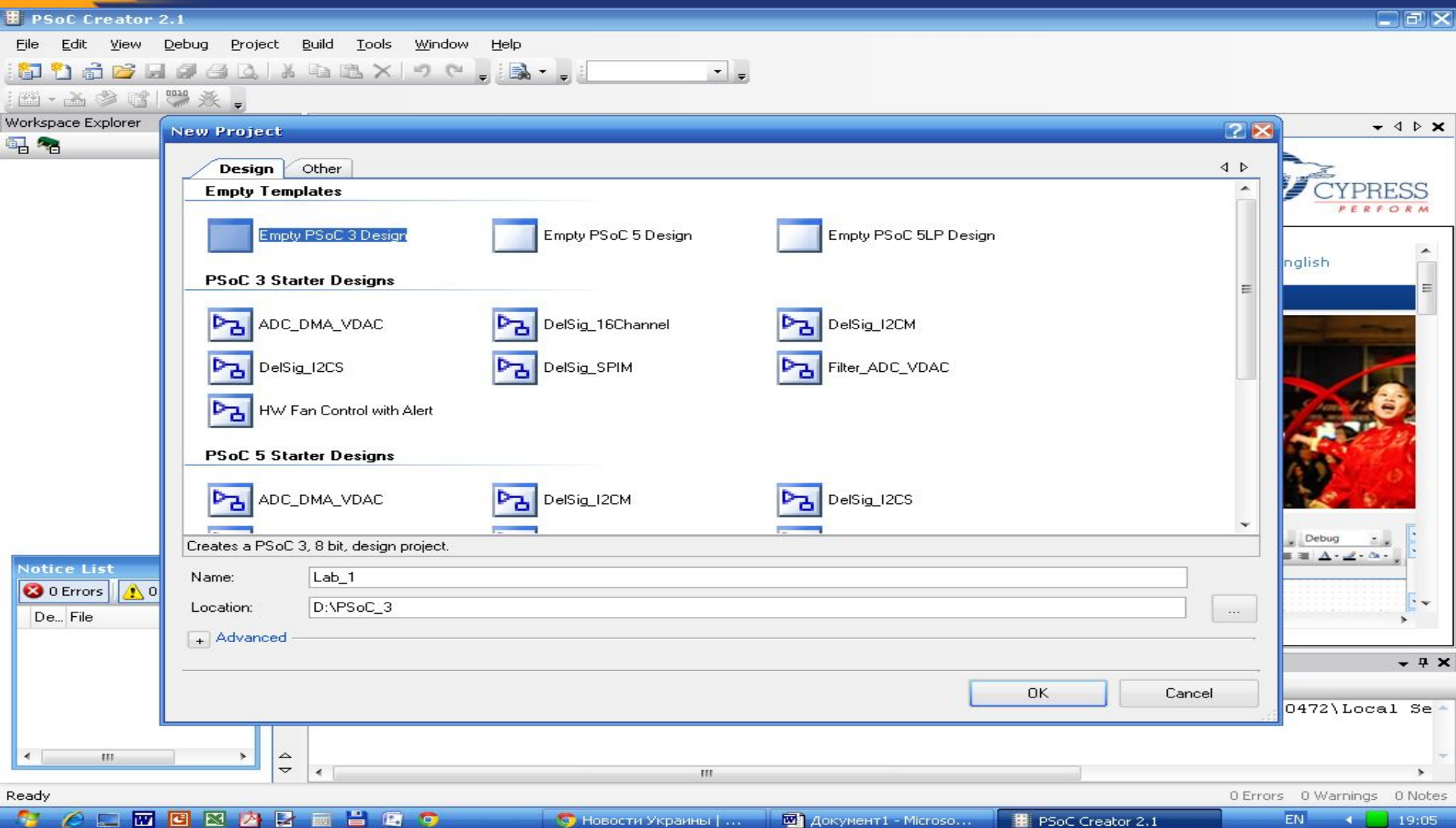
De... File

Ready

0 Errors 0 Warnings 0 Notes

EN 19:02

Empty PSoC 3/5 Design



PSoC Creator 2.1

File Edit View Debug Project Build Tools Window Help

Workspace Explorer

New Project

Design Other

Empty Templates

- Empty PSoC 3 Design
- Empty PSoC 5 Design
- Empty PSoC 5LP Design

PSoC 3 Starter Designs

- ADC_DMA_VDAC
- DelSig_I2CS
- HW Fan Control with Alert
- DelSig_I2CM
- DelSig_16Channel
- DelSig_SPIM
- Filter_ADC_VDAC

PSoC 5 Starter Designs

- ADC_DMA_VDAC
- DelSig_I2CM
- DelSig_I2CS

Creates a PSoC 3, 8 bit, design project.

Name: Lab_1

Location: D:\PSoC_3

+ Advanced

OK Cancel

Notice List

0 Errors 0 Warnings 0 Notes

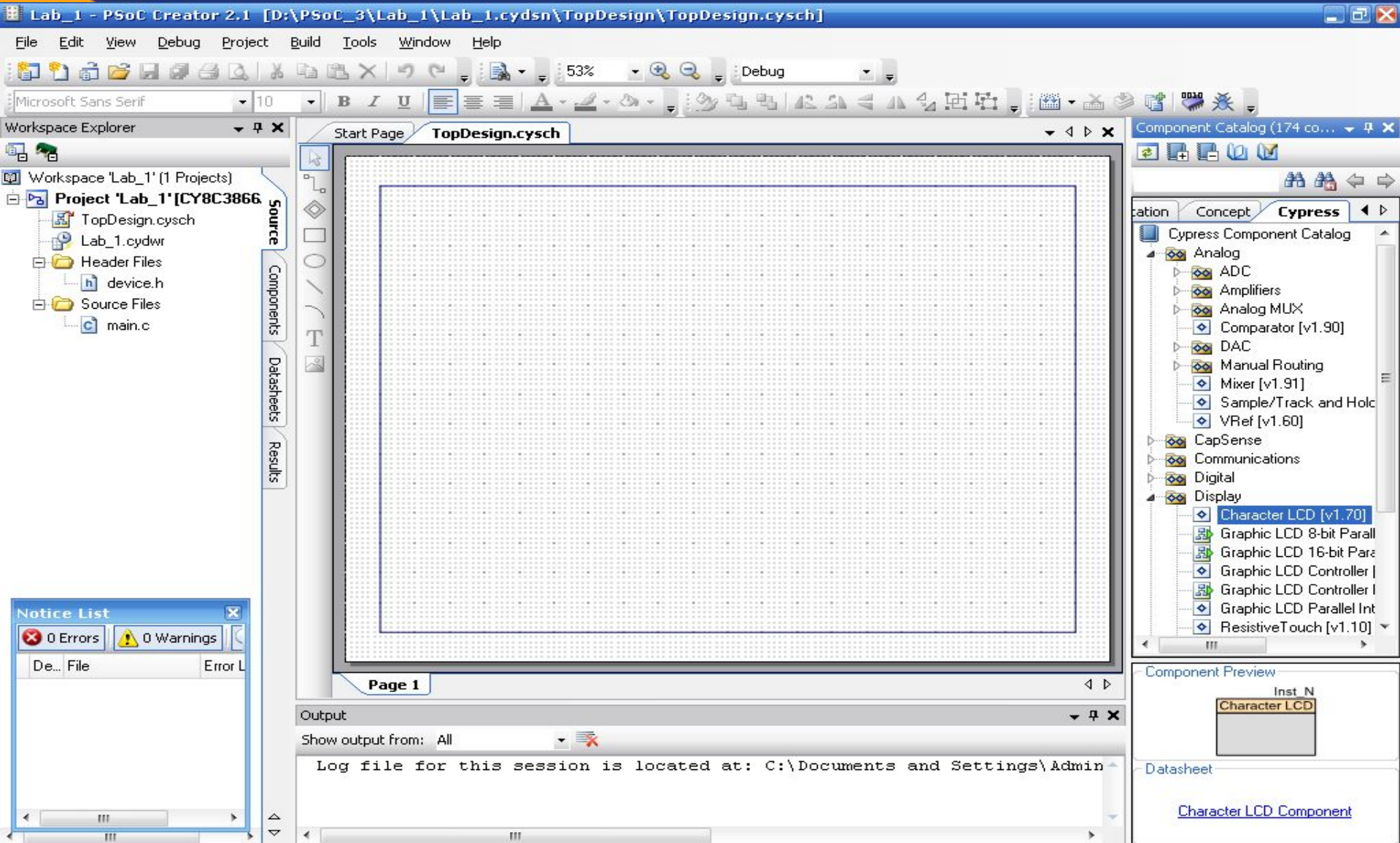
0472\Local Se

Ready

0 Errors 0 Warnings 0 Notes

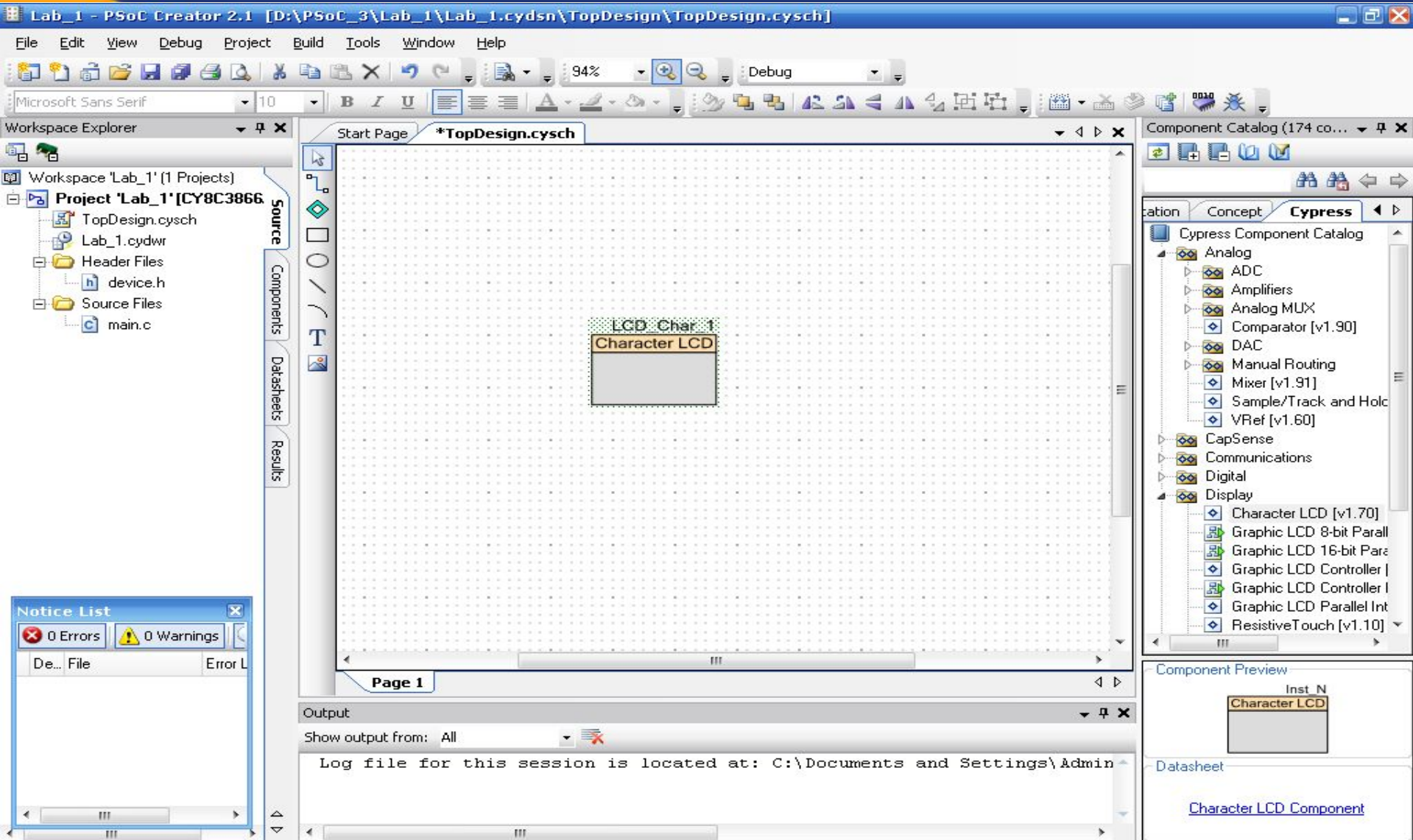
EN 19:05

Custom Window



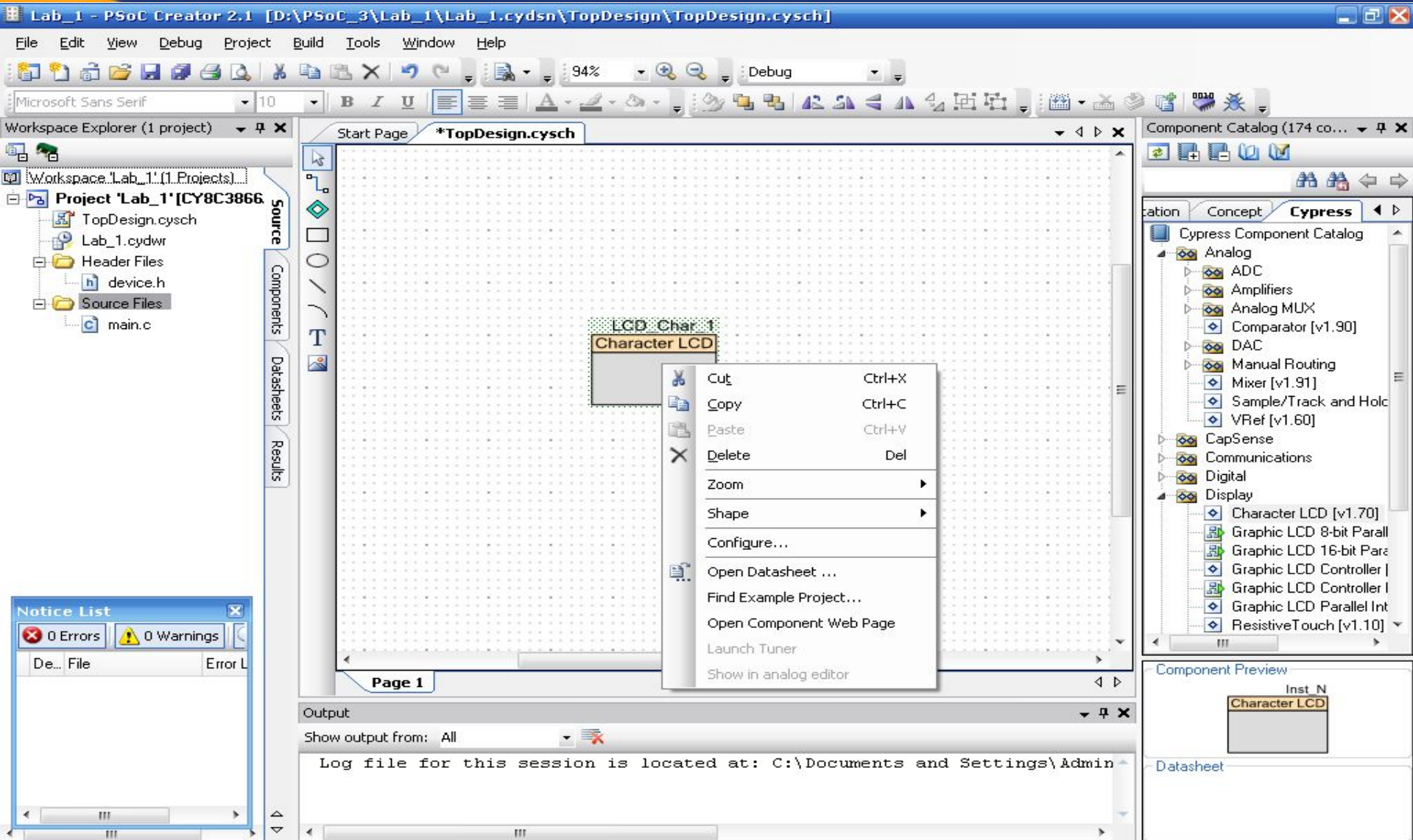
The screenshot displays the PSoC Creator 2.1 software interface. The main workspace shows a custom window design on a grid, labeled "Page 1". The interface includes a menu bar (File, Edit, View, Debug, Project, Build, Tools, Window, Help), a toolbar, and a status bar. The Workspace Explorer on the left shows the project structure for "Project 'Lab_1' [CY8C3866]". The Component Catalog on the right lists various components, with "Character LCD [v1.70]" selected. A Notice List window in the bottom-left corner shows "0 Errors" and "0 Warnings". The Output window at the bottom displays the message: "Log file for this session is located at: C:\Documents and Settings\Admin...".

Character LCD



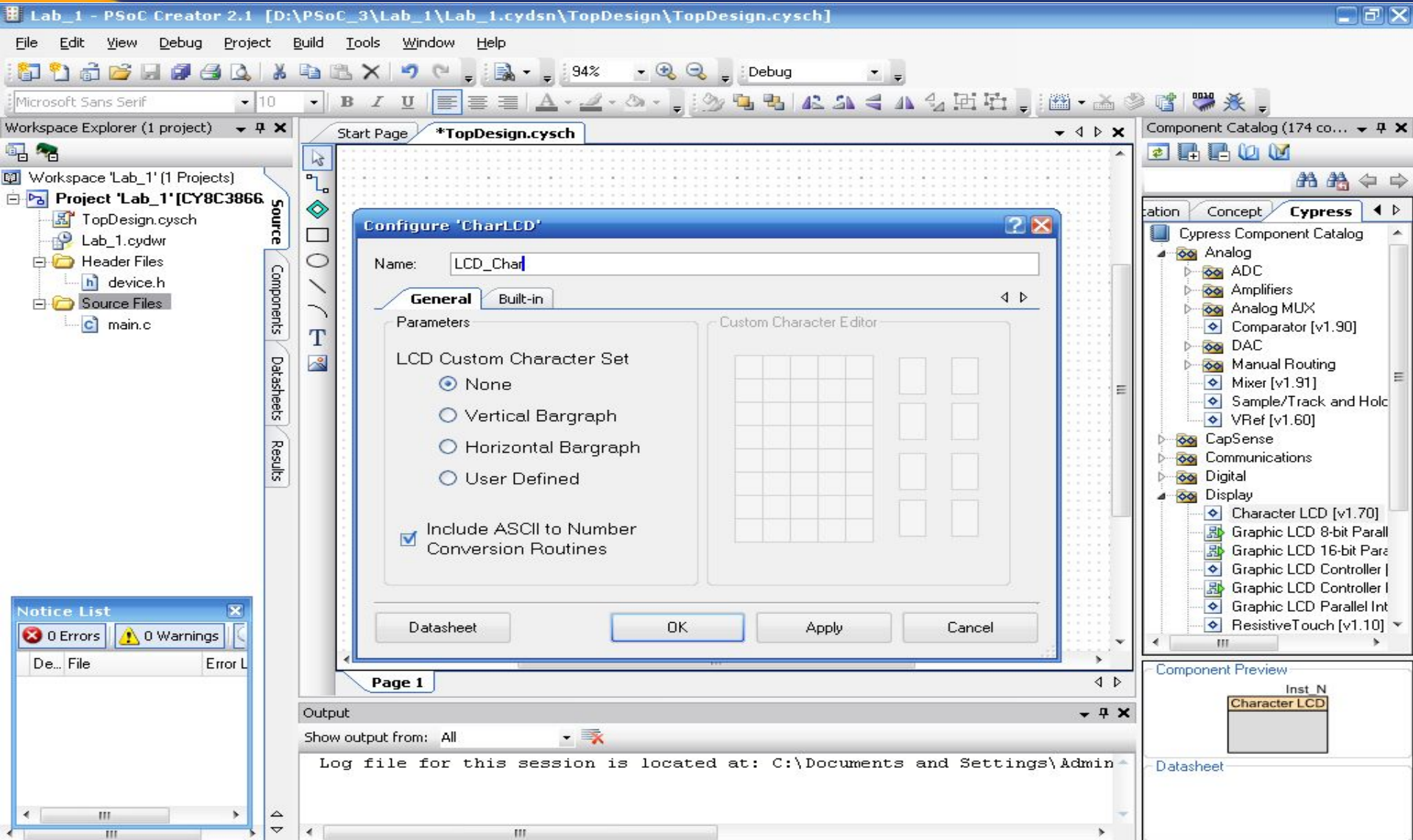
The screenshot displays the PSoC Creator 2.1 software interface. The main workspace shows a schematic page titled "Page 1" with a grid background. A component labeled "LCD Char 1" and "Character LCD" is being placed on the page. The Component Catalog on the right lists various components, with "Character LCD [v1.70]" selected under the "Display" category. The Notice List window in the bottom left shows "0 Errors" and "0 Warnings". The Output window at the bottom displays the message: "Log file for this session is located at: C:\Documents and Settings\Admin...".

Character LCD

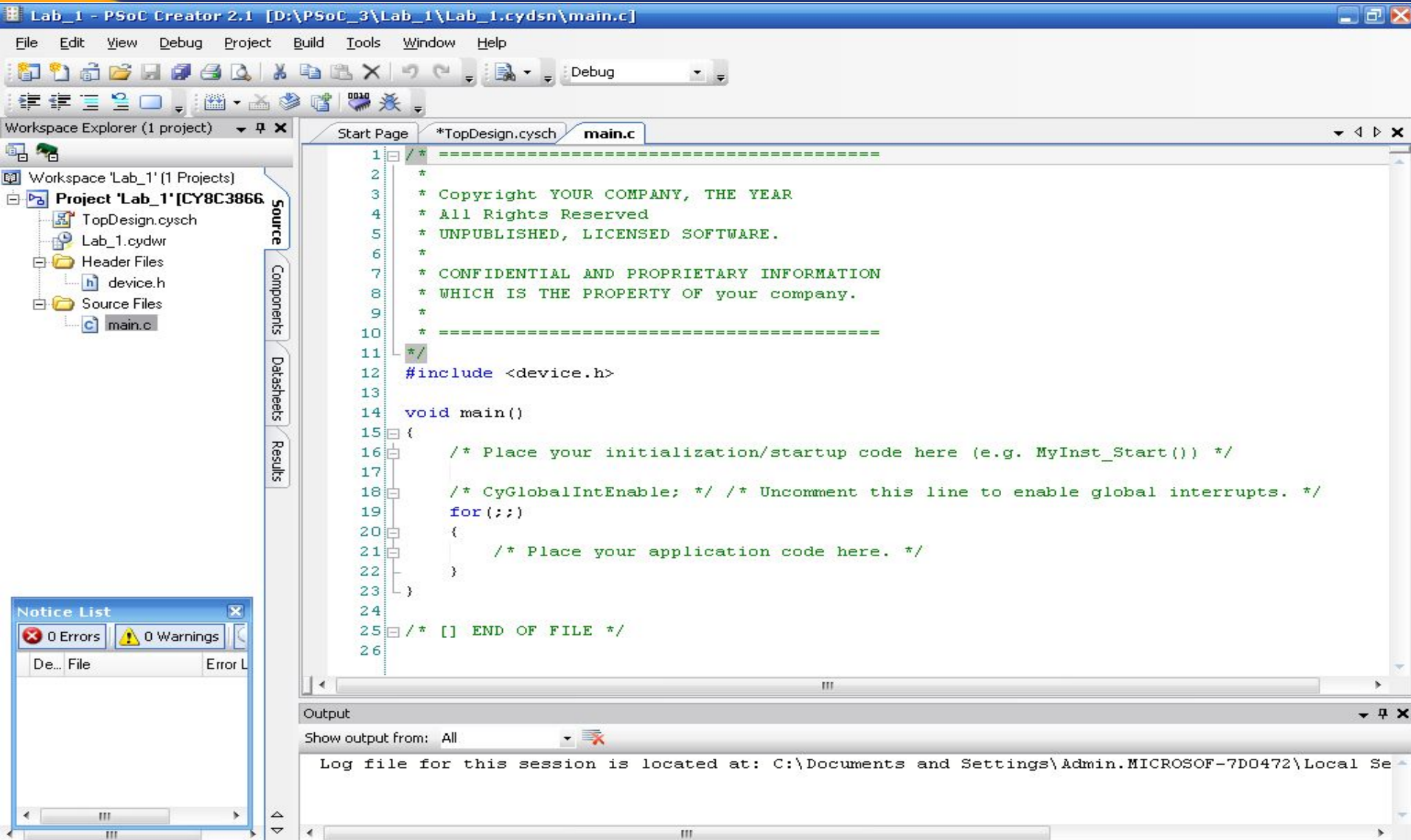


The screenshot shows the PSoC Creator 2.1 IDE. The main workspace displays a schematic with a grid. A component labeled "Character LCD" is being placed on the grid. A context menu is open over the component, listing actions such as Cut, Copy, Paste, Delete, Zoom, Shape, Configure..., Open Datasheet..., Find Example Project..., Open Component Web Page, Launch Tuner, and Show in analog editor. The Component Catalog on the right shows the "Character LCD [v1.70]" component selected under the "Display" category. The Notice List in the bottom left shows 0 Errors and 0 Warnings. The Output window at the bottom displays the message: "Log file for this session is located at: C:\Documents and Settings\Admin...".

Configure LCD



The screenshot displays the PSoC Creator 2.1 software interface. The main window shows the 'Configure CharLCD' dialog box for a component named 'LCD_Char'. The dialog has two tabs: 'General' and 'Built-in'. Under the 'General' tab, there are two sections: 'Parameters' and 'Custom Character Editor'. The 'Parameters' section includes radio buttons for 'None', 'Vertical Bargraph', 'Horizontal Bargraph', and 'User Defined', with 'None' selected. There is also a checked checkbox for 'Include ASCII to Number Conversion Routines'. The 'Custom Character Editor' section contains a grid for defining characters. At the bottom of the dialog are buttons for 'Datasheet', 'OK', 'Apply', and 'Cancel'. The background shows the workspace explorer with a project named 'Project Lab_1' and a component catalog on the right listing various components under the 'Cypress' category, including 'Character LCD [v1.70]'. A 'Notice List' window in the bottom left corner shows '0 Errors' and '0 Warnings'. The status bar at the bottom indicates 'Ready' and shows the coordinates '{X=295,Y=131}'.



The screenshot displays the PSoC Creator 2.1 IDE interface. The main window shows the source code for `main.c` in the `*TopDesign.cysch` project. The code includes a copyright notice and a `main()` function with several comments for initialization and application code.

```
1  /* -----  
2  *  
3  * Copyright YOUR COMPANY, THE YEAR  
4  * All Rights Reserved  
5  * UNPUBLISHED, LICENSED SOFTWARE.  
6  *  
7  * CONFIDENTIAL AND PROPRIETARY INFORMATION  
8  * WHICH IS THE PROPERTY OF your company.  
9  *  
10 * -----  
11 */  
12 #include <device.h>  
13  
14 void main()  
15 {  
16     /* Place your initialization/startup code here (e.g. MyInst_Start()) */  
17  
18     /* CyGlobalIntEnable; */ /* Uncomment this line to enable global interrupts. */  
19     for (;;)   
20     {  
21         /* Place your application code here. */  
22     }  
23 }  
24  
25 /* [] END OF FILE */  
26
```

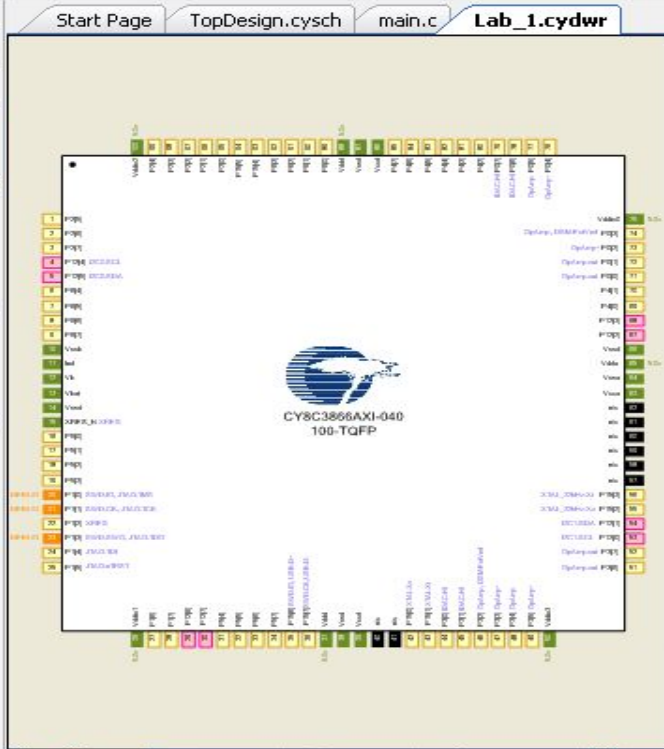
The **Notice List** window is open in the bottom-left corner, showing 0 Errors and 0 Warnings. The **Output** window at the bottom shows the message: "Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se...".

Lab_1 - PSoC Creator 2.1 [D:\PSoC_3\Lab_1\Lab_1.cydsn\Lab_1.cydw] 37% Debug

File Edit View Debug Project Build Tools Window Help

Workspace Explorer (1 project)

- Workspace 'Lab_1' (1 Projects)
 - Project 'Lab_1' [CY8C3866]
 - TopDesign.cysch
 - Lab_1.cydw
 - Header Files
 - device.h
 - Source Files
 - main.c



Alias	Name	Port	Pin	Lock
	\LCD_Char:LCDPort[6:0]\			
	P0[6:0]	IDAC:HC		
	P0[7:1]	IDAC:HC		
	P2[6:0]			
	P2[7:1]			
	P3[6:0]	OpAmp:c		
	P3[7:1]	OpAmp:c		
	P4[6:0]			
	P4[7:1]			
	P5[6:0]			

LCD_Char_LCDPort_6 - Digital
LCD_Char_LCDPort_5 - Digital
LCD_Char_LCDPort_4 - Digital

Notice List

0 Errors 0 Warnings

De... File Error L

Pins Analog Clocks Interrupts DMA System Directives Flash Security

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se



Build – Debug - Program

The screenshot shows the PSoC Creator 2.1 IDE interface. The main window displays the source code for `main.c`. The code includes a copyright notice and a `main()` function. The build output window at the bottom shows the following message:

```
SRAM used: 93 of 8192 bytes (1.1%).  
----- Build Succeeded: 02/14/2013 19:39:40 -----
```

The Workspace Explorer on the left shows the project structure for `Project 'Lab_1' [CY8C3]`, including source files like `main.c` and `device.h`. A Notice List window is open in the bottom-left corner, showing 0 Errors and 0 Warnings.



LCD Custom Character Set

Lab_1 - PSoC Creator 2.1 [D:\PSoc_3\Lab_1\Lab_1.cydsn\TopDesign\TopDesign.cysch]

File Edit View Debug Project Build Tools Window Help

Microsoft Sans Serif 10 B I U

Workspace Explorer

Start Page TopDesign.cysch main.c Lab_1.cydw

Component Catalog (174 co...)

Workspace 'Lab_1' (1 Projects)

Project 'Lab_1' [CY8C38

TopDesign.cysch

Lab_1.cydw

Header Files

device.h

Source Files

main.c

Generated_Source

PSoc3

cy_boot

CyBootAsmk

CyDmac.c

CyDmac.h

CyFlash.c

CyFlash.h

CyLib.c

CyLib.h

cymem.a51

cypins.h

Source

Components

Datasheets

Results

Configure 'CharLCD'

Name: LCD_Char

General Built-in

Parameters

LCD Custom Character Set

None

Vertical Bargraph

Horizontal Bargraph

User Defined

Include ASCII to Number Conversion Routines

Custom Character Editor

Custom 7

Datasheet OK Apply Cancel

Page 1

Output

Show output from: All

Verify Checksum...

Device 'PSoc 3 CY8C3866AX*-040' was successfully programmed at 02/14/201

Notice List

0 Errors 0 Warnings

De... File Error L

Component Catalog

Cypress

Cypress Component Catalog

Analog

ADC

Amplifiers

Analog MUX

Comparator [v1.90]

DAC

Manual Routing

Mixer [v1.91]

Sample/Track and Hold

VRef [v1.60]

Digital

CapSense

Communications

Display

Character LCD [v1.70]

Graphic LCD 8-bit Paralle

Graphic LCD 16-bit Paralle

Graphic LCD Controller I

Graphic LCD Controller I

Graphic LCD Parallel Int

Resistive Touch [v1.10]

Component Preview

Inst N

Character LCD

Datasheet

Ready

{X=442,Y=450}

0 Errors 0 Warnings 0 Notes

Новости Укр... 2 Microsoft ... Lab_1 - PSoC ... Adobe Acroba... EN 20:25



Open Project/Workspace

The screenshot shows the PSoC Creator 2.1 application window. The 'File' menu is open, and the 'Open' option is selected. A sub-menu is displayed, showing 'Project/Workspace', 'File...' (with Ctrl+O shortcut), and 'Example Project...'. The main interface includes a 'Recent Projects' list, a 'Getting Started' section, and a 'Tips + Tricks' section. A 'Notice List' window is open in the bottom left, showing 0 Errors and 0 Warnings. The output window at the bottom displays the log file path: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se...



Lab_1 Character LCD

CharLCD_CustomFont01 - PSoC Creator 2.1 [F:\...\CharLCD_CustomFont01.cydsn\TopDesign\TopDesign.cysch]

File Edit View Debug Project Build Tools Window Help

Microsoft Sans Serif 10 B I U

Workspace Explorer (1 project)

Project 'CharLCD_CustomFont01'

- TopDesign.cysch
- CharLCD_CustomFont01
 - Header Files
 - device.h
 - Source Files
 - main.c
 - Generated_Source
 - PSoC3
 - cy_boot
 - CyBootAsmk
 - CyDmac.c
 - CyDmac.h
 - CyFlash.c
 - CyFlash.h
 - CyLib.c
 - CyLib.h
 - cymem.a51
 - cypins.h

Component Catalog (174 components)

Cypress Component Catalog

- Display
 - Character LCD [v1.70]

Notice List

0 Errors 0 Warnings

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin...

Page 1

Ready

0 Errors 0 Warnings 0 Notes



Lab_1 Character LCD

The screenshot shows the PSoC Creator 2.1 IDE interface. The main window displays the source code for `main.c` in the `CharLCD_CustomFont01` project. The code includes a header file `<device.h>` and declares an external array `CYCODE LCD_customFonts[]`. The code is surrounded by multi-line comments providing file information, version (2.0), description, and copyright details (2012, Cypress Semiconductor Corporation).

```
1  /*****
2  * File Name: main.c
3  *
4  * Version: 2.0
5  *
6  * Description:
7  *   The example project displays " CYPRESS" in a custom font on 2X16 LCD
8  *   available with CY8CKIT-001.
9  *
10 *****
11 * Copyright 2012, Cypress Semiconductor Corporation. All rights reserved.
12 * This software is owned by Cypress Semiconductor Corporation and is protected
13 * by and subject to worldwide patent and copyright laws and treaties.
14 * Therefore, you may use this software only as provided in the license agreement
15 * accompanying the software package from which you obtained this software.
16 * CYPRESS AND ITS SUPPLIERS MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED,
17 * WITH REGARD TO THIS SOFTWARE, INCLUDING, BUT NOT LIMITED TO, NONINFRINGEMENT,
18 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
19 *****/
20
21 #include <device.h>
22
23 extern uint8 const CYCODE LCD_customFonts[];
24
25 /*****
26 * Function Name: main
27 *****/
```

A **Notice List** window is open in the bottom-left corner, showing 0 Errors and 0 Warnings. The Output window at the bottom displays the message: "Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se...".



Lab_1 Character LCD

CharLCD_CustomFont01 - PSoC Creator 2.1 [F:\LCD_Font_1\CharLCD_CustomFont01\CharLCD_CustomFont01.cydsn\main.c]

File Edit View Debug Project Build Tools Window Help

Debug

Workspace Explorer (1 project)

Project 'CharLCD_CustomFont01'

- TopDesign.cysch
- CharLCD_CustomFont01
 - Header Files
 - device.h
 - Source Files
 - main.c
 - Generated_Source
 - PSoC3
 - cy_boot
 - CyBootAsmk
 - CyDmac.c
 - CyDmac.h
 - CyFlash.c
 - CyFlash.h
 - CyLib.c
 - CyLib.h
 - cymem.a51
 - cypins.h

```
25 /*****  
26 * Function Name: main  
27 *****/  
28 *  
29 * Summary:  
30 * The main program does the following  
31 * 1. Initialiaes the LCD.  
32 * 2. Load the custom fonts.  
33 * 3. Puts "CYPRESS" in custom available font on the row 0 of the LCD.  
34 * 4. Prints " Perform" in normal font on the row 1 of the LCD.  
35 *  
36 * Parameters:  
37 * None.  
38 *  
39 * Return:  
40 * None.  
41 *  
42 *****/  
43 void main()  
44 {  
45     uint8 pos = 1u;  
46     uint8 row = 0u;  
47  
48     LCD_Start();  
49     LCD_LoadCustomFonts(LCD_customFonts);  
50 }
```

Notice List

0 Errors 0 Warnings

De... File Error L

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se



Lab_1 Character LCD

CharLCD_CustomFont01 - PSoC Creator 2.1 [F:\LCD_Font_1\CharLCD_CustomFont01\CharLCD_CustomFont01.cydsn\main.c]

File Edit View Debug Project Build Tools Window Help

Debug

Workspace Explorer (1 project)

- Workspace 'CharLCD_CustomFont01'
 - Project 'CharLCD_CustomFont01'
 - TopDesign.cysch
 - CharLCD_CustomFont01
 - Header Files
 - device.h
 - Source Files
 - main.c
 - Generated_Source
 - PSoC3
 - cy_boot
 - CyBootAsmk
 - CyDmac.c
 - CyDmac.h
 - CyFlash.c
 - CyFlash.h
 - CyLib.c
 - CyLib.h
 - cymem.a51
 - cypins.h

Source Components Datasheets Results

```
50
51 LCD_Position(row, pos);
52 LCD_PutChar(LCD_CUSTOM_0);
53 pos += 1u;
54
55 LCD_Position(row, pos);
56 LCD_PutChar(LCD_CUSTOM_1);
57 pos += 1u;
58
59 LCD_Position(row, pos);
60 LCD_PutChar(LCD_CUSTOM_2);
61 pos += 1u;
62
63 LCD_Position(row, pos);
64 LCD_PutChar(LCD_CUSTOM_3);
65 pos += 1u;
66
67 LCD_Position(row, pos);
68 LCD_PutChar(LCD_CUSTOM_4);
69 pos += 1u;
70
71 LCD_Position(row, pos);
72 LCD_PutChar(LCD_CUSTOM_5);
73 pos += 1u;
74
75 LCD_Position(row, pos);
76 LCD_PutChar(LCD_CUSTOM_6);
77 pos += 1u;
```

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se

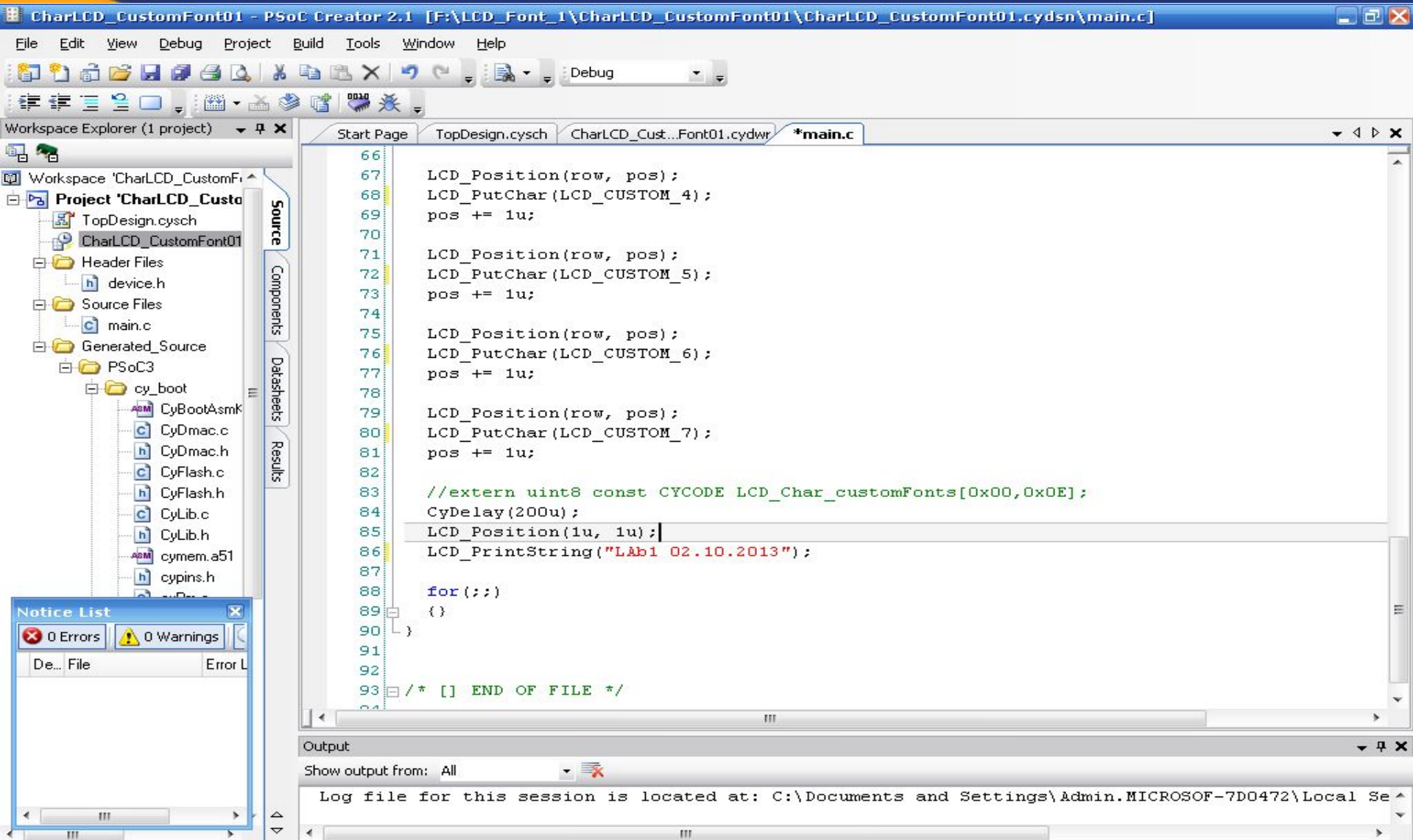
Notice List

0 Errors 0 Warnings

De...	File	Error L
-------	------	---------

Ln 76 Col 37 INS 0 Errors 0 Warnings 0 Notes

Lab_1 Character LCD



CharLCD_CustomFont01 - PSoC Creator 2.1 [F:\LCD_Font_1\CharLCD_CustomFont01\CharLCD_CustomFont01.cydsn\main.c]

File Edit View Debug Project Build Tools Window Help

Workspace Explorer (1 project)

- Workspace 'CharLCD_CustomFont01'
- Project 'CharLCD_CustomFont01'
 - TopDesign.cysch
 - CharLCD_CustomFont01
 - Header Files
 - device.h
 - Source Files
 - main.c
 - Generated_Source
 - PSoC3
 - cy_boot
 - CyBootAsmk
 - CyDmac.c
 - CyDmac.h
 - CyFlash.c
 - CyFlash.h
 - CyLib.c
 - CyLib.h
 - cymem.a51
 - cypins.h

Source Components Datasheets Results

```
66
67 LCD_Position(row, pos);
68 LCD_PutChar(LCD_CUSTOM_4);
69 pos += 1u;
70
71 LCD_Position(row, pos);
72 LCD_PutChar(LCD_CUSTOM_5);
73 pos += 1u;
74
75 LCD_Position(row, pos);
76 LCD_PutChar(LCD_CUSTOM_6);
77 pos += 1u;
78
79 LCD_Position(row, pos);
80 LCD_PutChar(LCD_CUSTOM_7);
81 pos += 1u;
82
83 //extern uint8 const CYCODE LCD_Char_customFonts[0x00,0x0E];
84 CyDelay(200u);
85 LCD_Position(1u, 1u);
86 LCD_PrintString("Lab1 02.10.2013");
87
88 for (;;)
89 {}
90
91
92
93 /* [] END OF FILE */
```

Notice List

0 Errors 0 Warnings

De...	File	Error L
-------	------	---------

Output

Show output from: All

Log file for this session is located at: C:\Documents and Settings\Admin.MICROSOFT-7D0472\Local Se

Ready

Ln 85 Col 24 INS 0 Errors 0 Warnings 0 Notes

7:47

На сайті фірми Cypress знаходиться більше 200 Application Notes і Reference Designs, які ілюструють області застосування мікроконтролерів PSoC.

Design Support - Microsoft Internet Explorer

Address: <http://www.cypress.com/portal/server.pt?space=CommunityPage&control=SetCommunity&Communi>

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Select one of the following materials to help you design-in Cypress products: Application Notes, Datasheets, Developer Kits, Errata Updates, Evaluation Boards, Models, Reference Designs, Software & Drivers and Technical Articles.

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Select Product Family: -- All Product Families --
 Application Specific Clocks
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 Automotive Products
 Backplane Interface & Clock Mgmt
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Application Notes	Datasheets	Developer Kits	Errata Update	Evaluation Boards
Models	More Resources	Reference Designs	Software and Drivers	Technical Articles

Technical Support

Product Family

Product Family	Descriptive Name	Date	Downloads
PSoC Mixed-Signal Array	AN2267a - Standard - Single Cell Li-Ion Battery Charger using CY8C21xxx	Apr 19, 2005	AN2267A.PDF AN2267A.ZIP
PSoC Mixed-Signal Array	AN2260 - Standard - Rapid NiCd/NiMH Battery Charger and DC Brushed Motor Controller for Autonomous Appliances	Apr 15, 2005	AN2260.PDF AN2260.ZIP
PSoC Mixed-Signal Array	AN2026b - Support - In-System Serial Programming Protocol CY8C24794 and CY8C29xxx	Apr 8, 2005	AN2026B.PDF
PSoC Mixed-Signal Array	AN2266 - Support - 16-Bit PWM/PWM-DACs using One Digital PSoC(TM) Block	Apr 8, 2005	AN2266.PDF AN2266.ZIP
PSoC Mixed-Signal Array	AN2279 - Support - Dynamic I2C Addressing Implemented with I2C Hardware User Modules	Apr 8, 2005	AN2279.PDF AN2279.ZIP
PSoC Mixed-Signal Array	AN2267 - Standard - Single Cell Li-Ion Battery Charger	Apr 1, 2005	AN2267.PDF AN2267.ZIP
PSoC Mixed-Signal Array	AN2222a - Support - Flex-Pod Soldering Guide	Mar 31, 2005	AN2222A.PDF
PSoC Mixed-Signal Array	AN2233a - Support - Capacitive Switch Scan	Mar 31, 2005	AN2233A.PDF
PSoC Mixed-Signal Array	AN2276 - Support - Binary Weighted Single-Pole IIR Low-Pass Filters	Mar 29, 2005	AN2276.PDF AN2276.ZIP
PSoC Mixed-Signal Array	AN2277 - Support - Capacitive Front Panel Display Demonstration	Mar 29, 2005	AN2277.PDF AN2277.ZIP

Found 201 items 1 - 10 | 11 - 20 | 21 - 30 | 31 - 40 | 41 - 50 | 51 - 60 | 61 - 70 | 71 - 80 | 81 - 90 | 91 - 100 | see 1 - 100 | next 100

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(лекція 1, кінець)
Благітко Б.Я.
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