

OLED Development Kit

Quick Start Guide

Document Revision: 1.01

Date: 28 May, 2007



BiPOM Electronics, Inc.

16301 Blue Ridge Road, Missouri City, Texas 77489 USA

Telephone: 1-713-283-9970 Fax: 1-281-416-2806

E-mail: info@bipom.com Web: www.bipom.com

© 2007 by BiPOM Electronics. All rights reserved.

OLED Development Kit Quick Start Guide. No part of this work may be reproduced in any manner without written permission of BiPOM Electronics. Pictiva and OSRAM are registered trademarks of OSRAM. All trademarked names in this manual are the property of respective owners.

Thank you for your purchase of OLED Development Kit. The purpose of this kit is the quick start of your development with OLED Displays.

You can quickly download the examples that are included in this kit to the Flash memory inside the ARM microcontroller using the RS232 Serial port of your PC. These examples demonstrate how to initialize and program the OLED display using C language.

Examples are provided for the most popular ARM C Compilers such as GNU C (gcc). GNU C is adequate for many applications and it is free. Our kit includes a license for Micro-IDE, which is our graphical Integrated Development Environment (IDE) for GNU C and other tools.

Bipom OLED development kit contains :

- MINI-MAX/ARM-C board
- OLED-1 board (already mounted on MINI-MAX/ARM-C using plastic standoffs)
- Serial cable (Null Modem)
- Power Supply

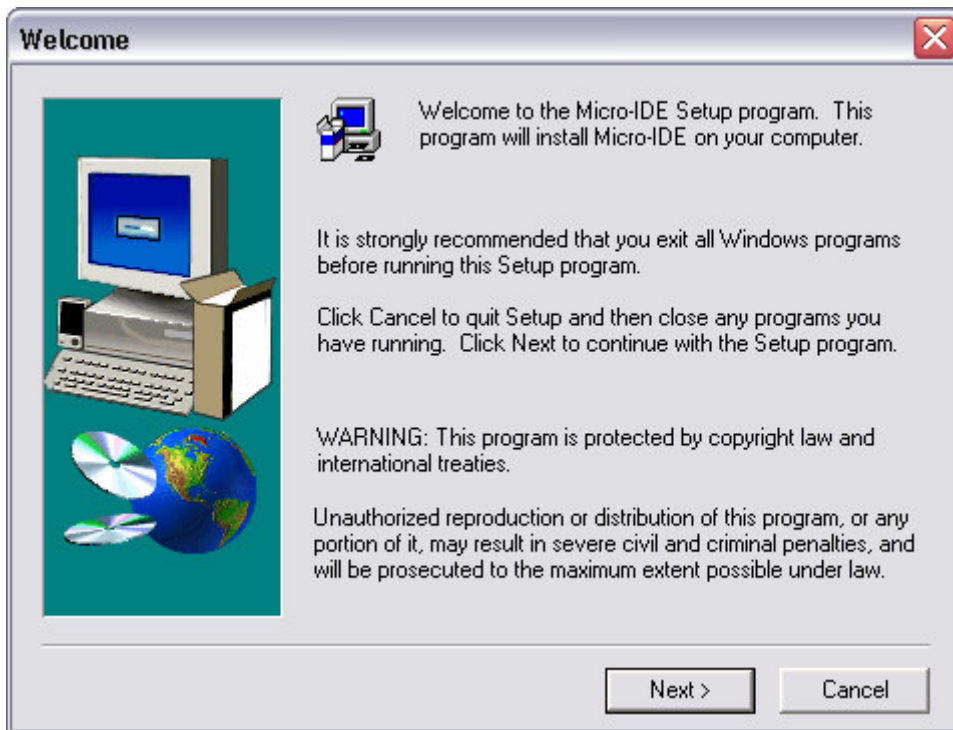
The following can be downloaded from BiPOM Web site free of charge:

- OLED-1 manual
- MINI-MAX/ARM-C manual
- Graphics Library from BiPOM Electronics (sources and binaries)
- GNUARM Development System
- IAR Demo
- Micro-IDE license
- Code examples for GNUARM compiler

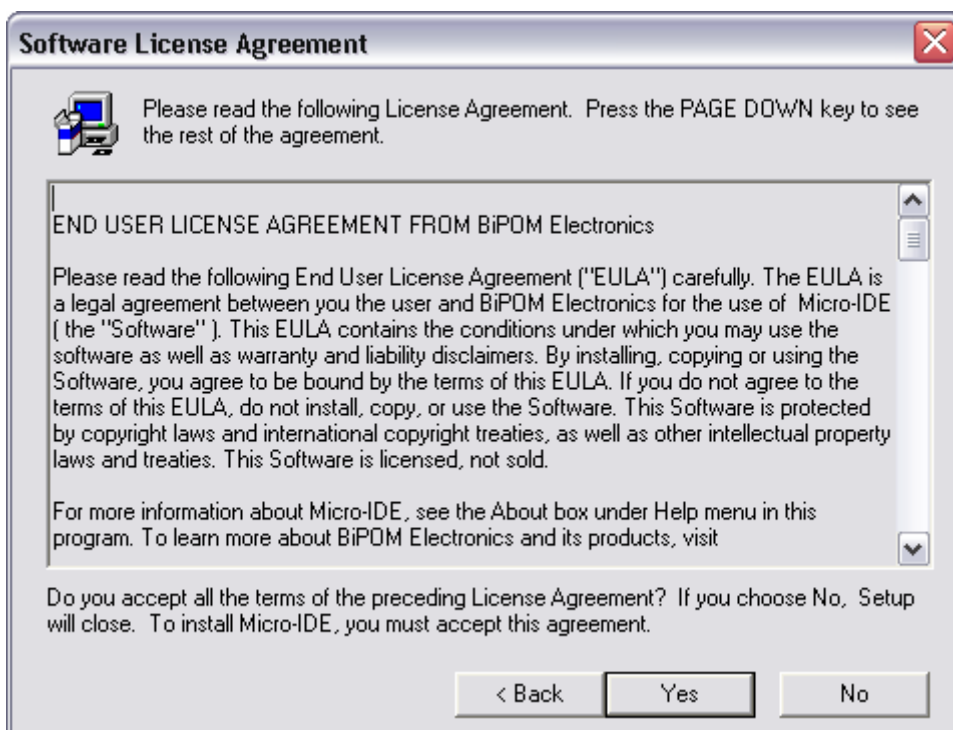
Setting Up:

1. Download and install the latest release (FREE) of ARM7 development system from BiPOM web <http://www.bipom.com/devsys/arm7dev.zip>

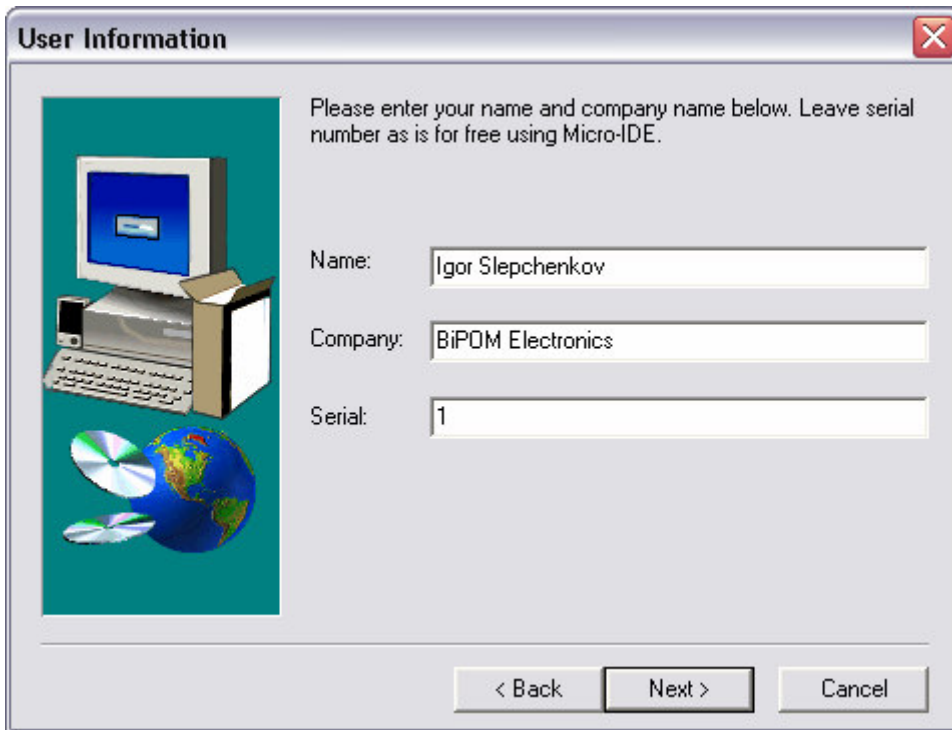
Unpack all files and run setup.exe. A welcome screen will appear. Click Next.



License Agreement window will appear. Click Yes if you agree to the terms of the license agreement.




You should enter all three fields of User Information. This development system is FREE, so you can enter any text in Serial field . For example, enter “1”. Click Next.



User Information

Please enter your name and company name below. Leave serial number as is for free using Micro-IDE.



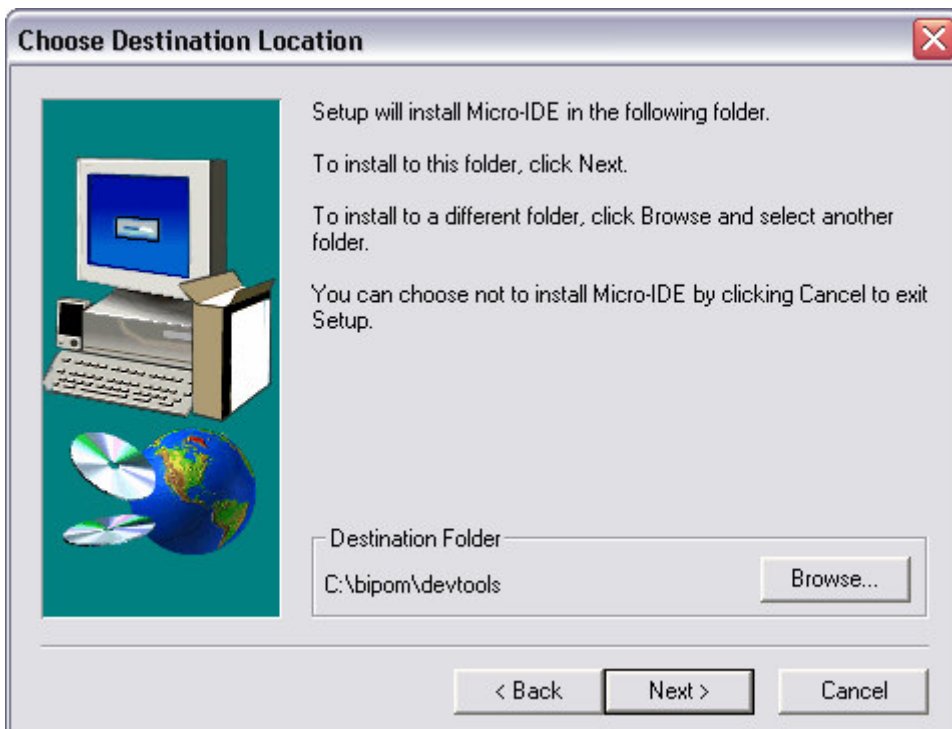
Name:

Company:

Serial:

< Back Next > Cancel

You will be asked to enter the destination location. It is recommended to use the default location although you can install the software in a different folder and/or on a different drive. Click Next.




Choose Destination Location

Setup will install Micro-IDE in the following folder.

To install to this folder, click Next.

To install to a different folder, click Browse and select another folder.

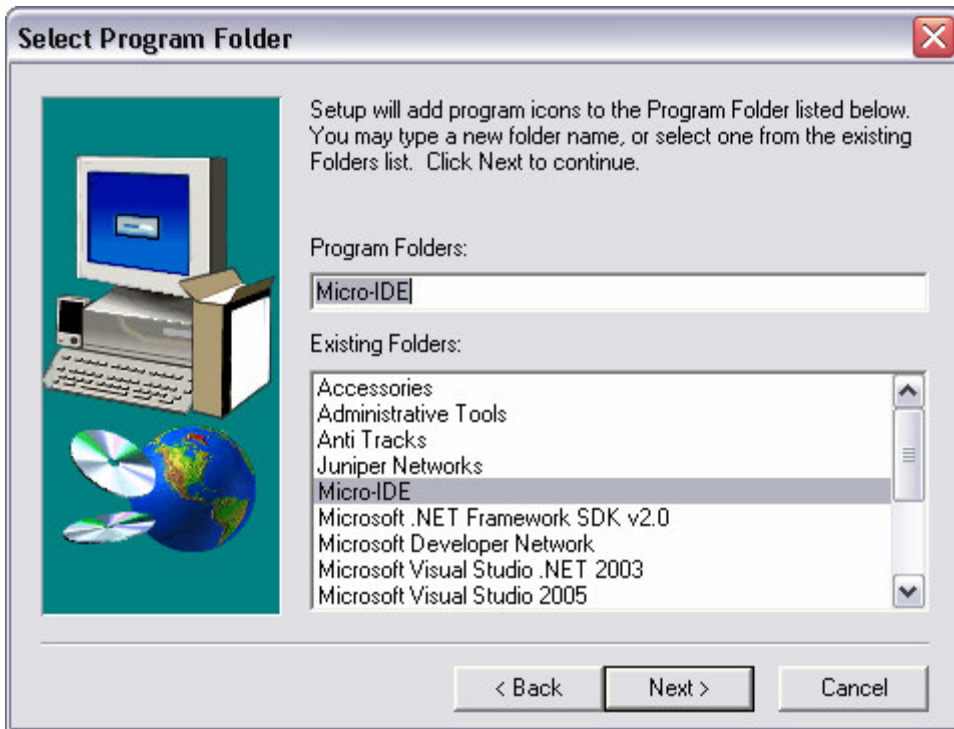
You can choose not to install Micro-IDE by clicking Cancel to exit Setup.



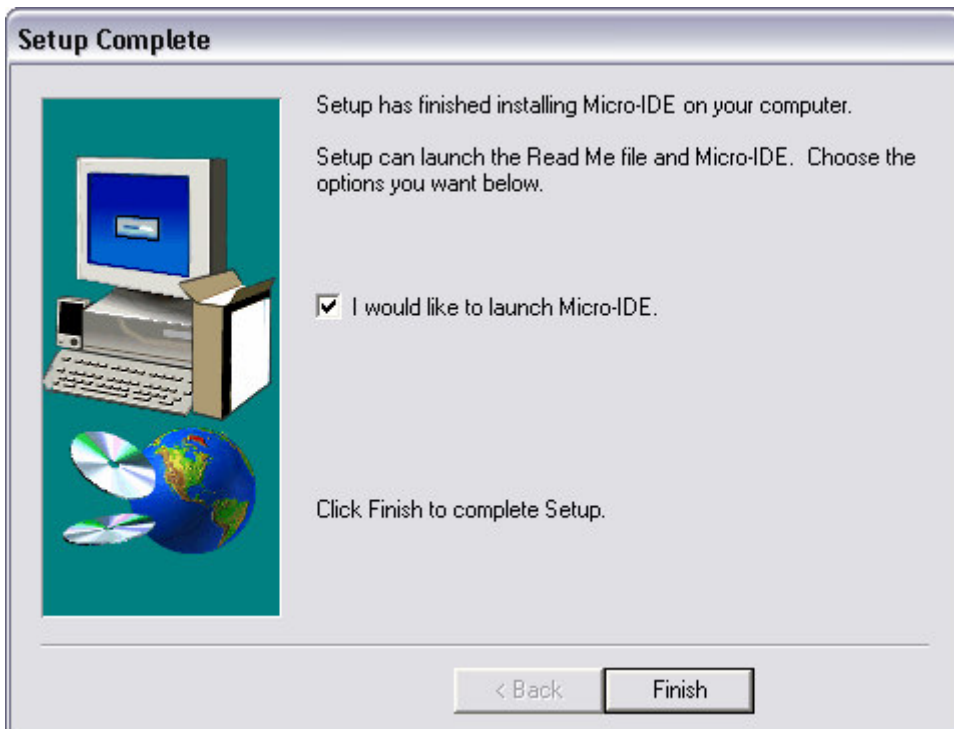
Destination Folder
 Browse...

< Back Next > Cancel

Select the Program Folder. Click Next.



Click Finish on the last window. You can start Micro-IDE, but you still don't have compiler.



2. Download and install GNU ARM7 GCC compiler (<http://www.gnuarm.org>).
You can download GNU ARM compiler from its original site or from BiPOM site.

http://www.gnuarm.org/bu-2.17_gcc-4.1.1-c-c++_nl-1.14.0_gi-6.5.exe

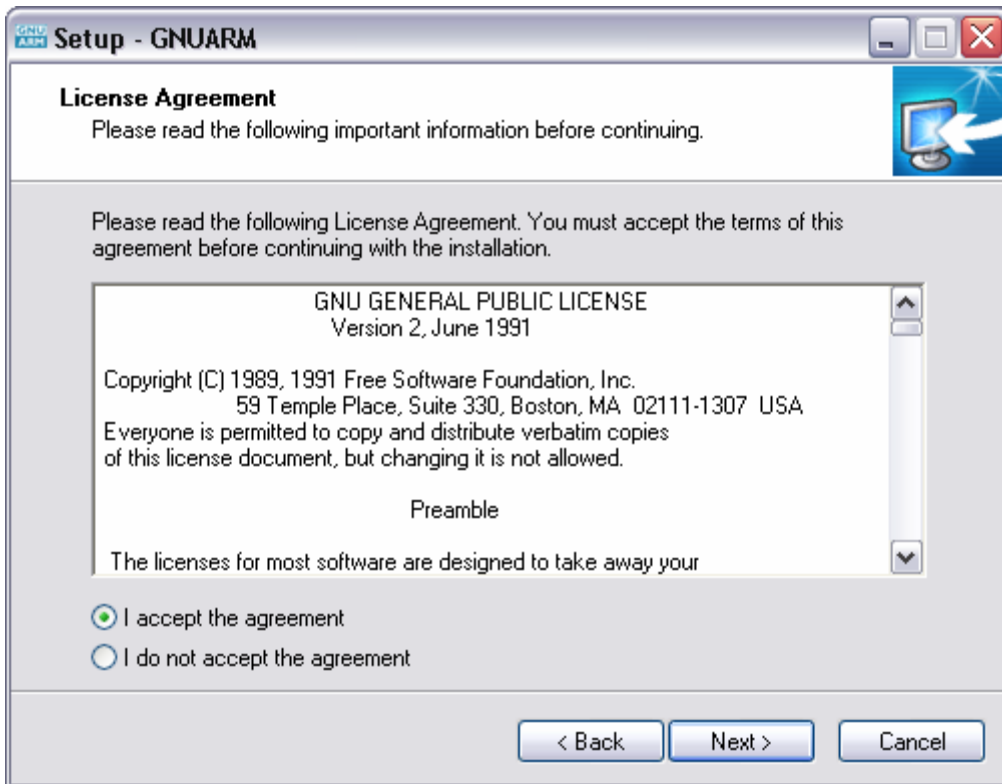
http://www.bipom.com/applications/gnuarm7gcc_4.1.1.exe - new 4.1.1 version

Run the downloaded file.

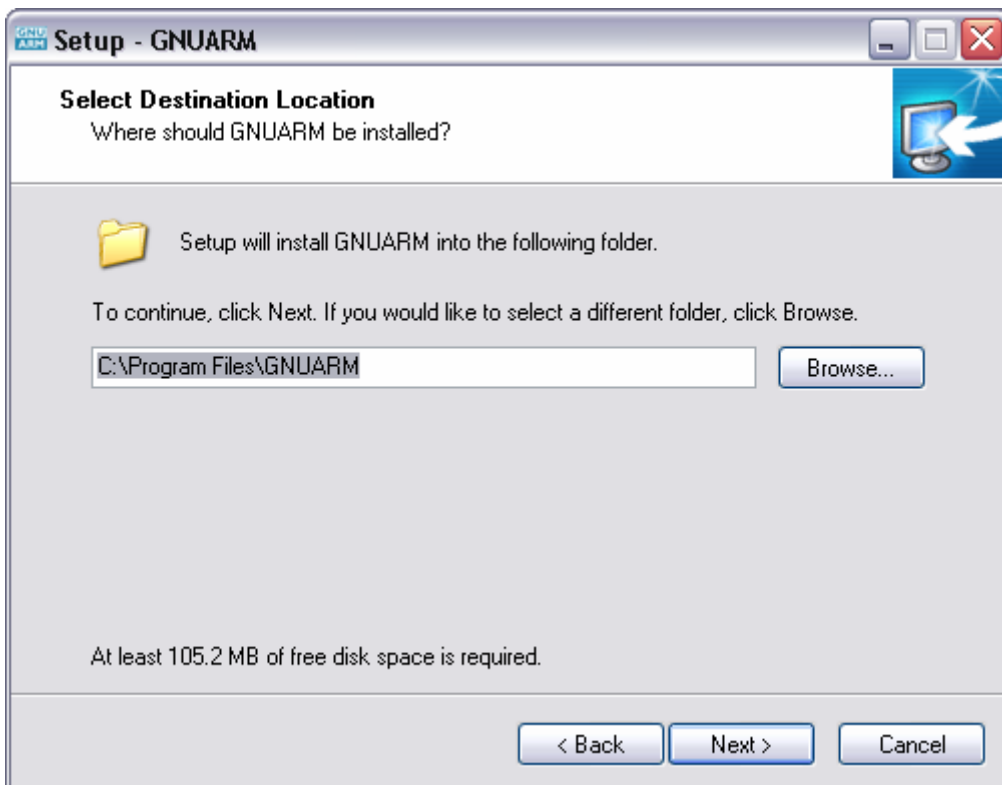
Click Next on first window.



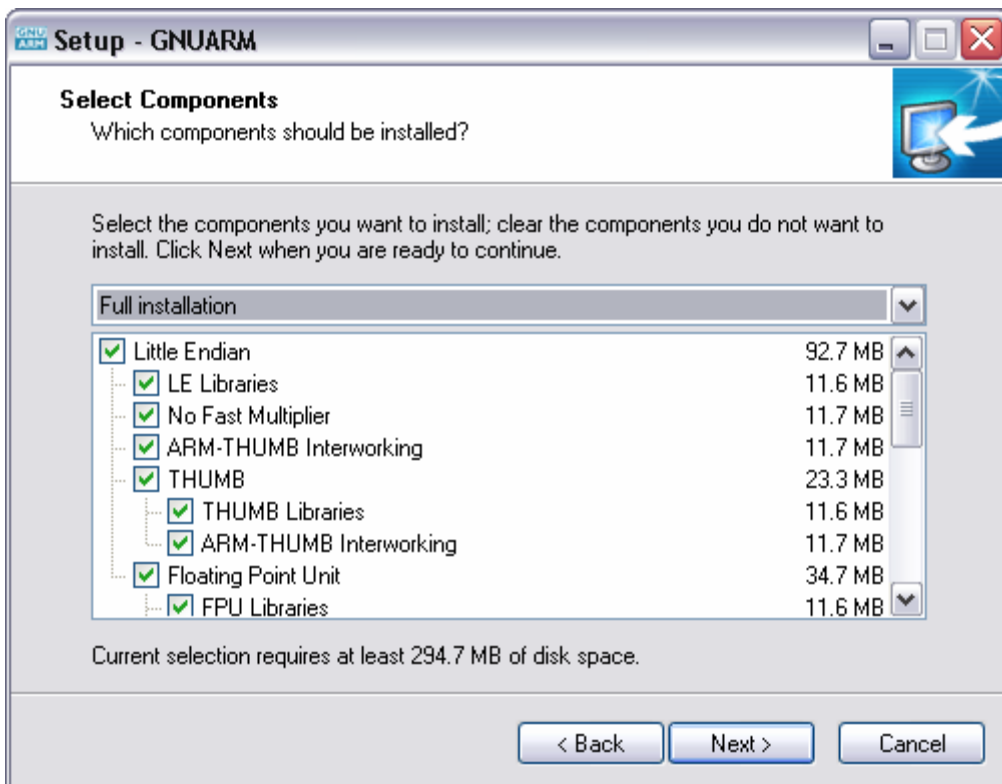
License Agreement window will appear. Click "I accept the agreement" if you agree to the terms of the license agreement and click Next.



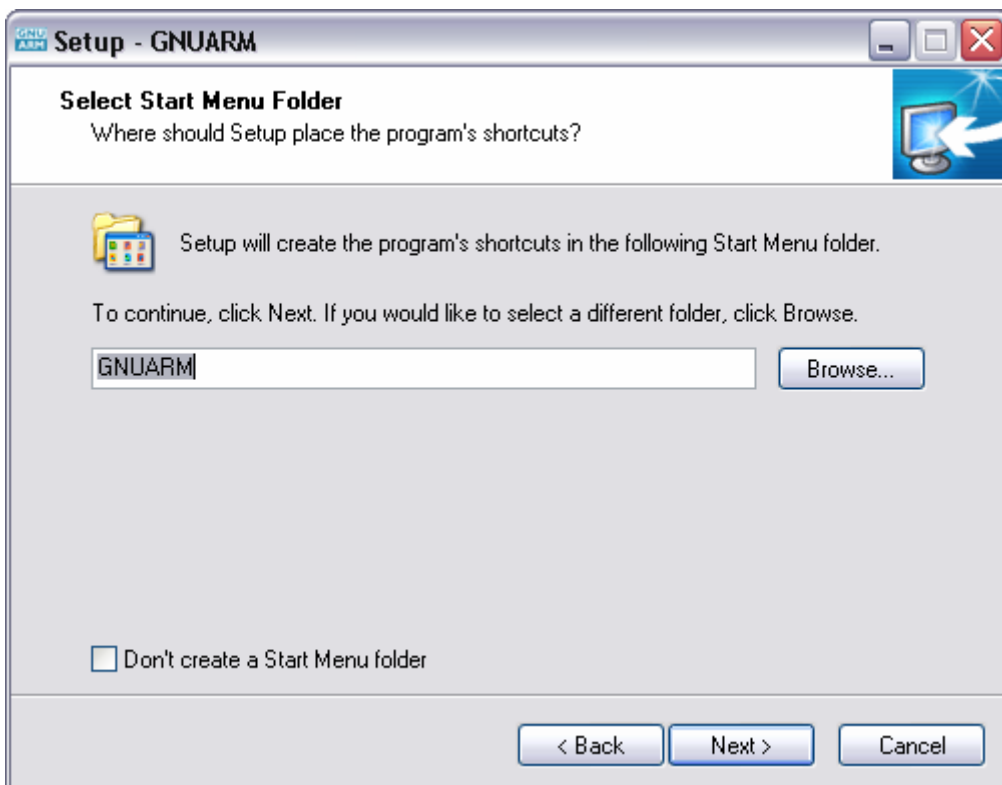
Next window asks you for a destination folder. Use the default value (C:\Program Files\GNUARM). ARM7 development system assumes that the GNUARM compiler will be located in this folder. If you install the GNUARM compiler in any other folder, you should change toolkit directory in Toolkit Configuration application. Click Next.



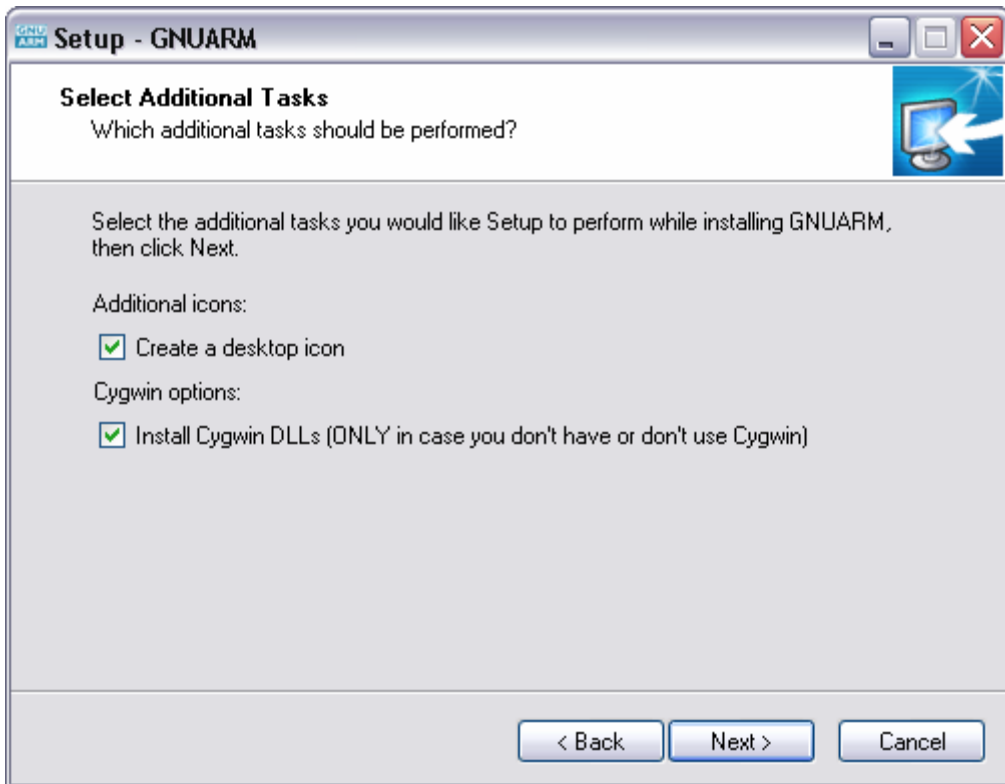
Select Components window appears. Please select Full Installation from drop-down box and click Next.



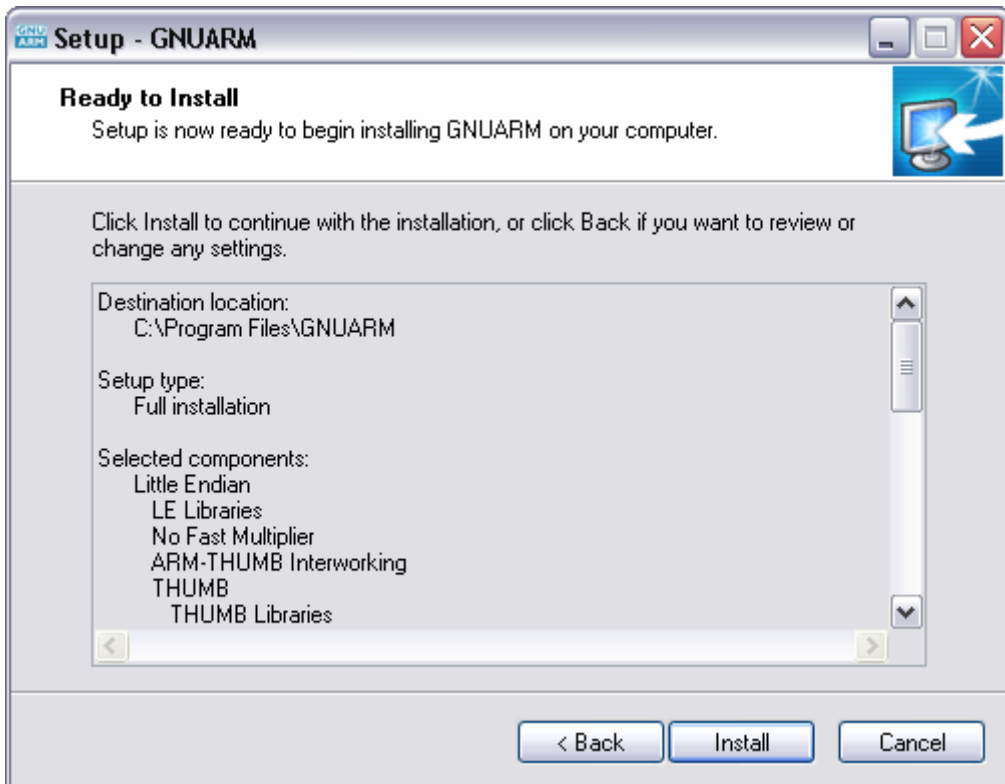
On the next window you can enter Start Menu Folder. Leave this field as is and click Next.



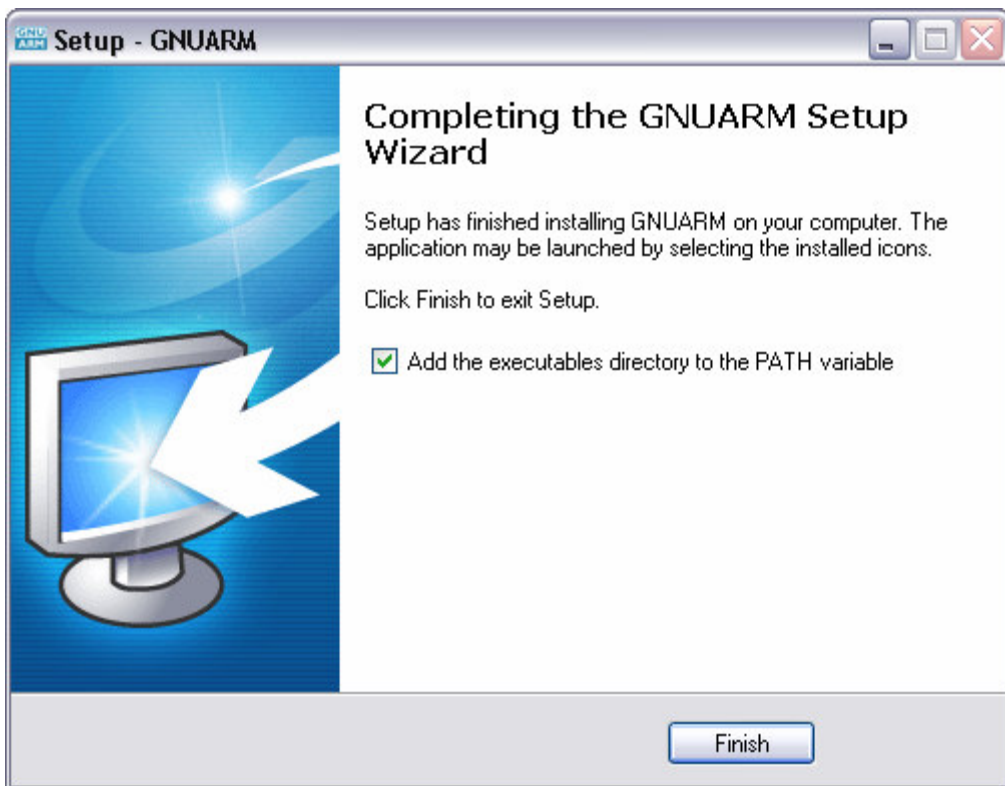
If you don't have Cygwin DLLs installed, you should check Cygwin options, when Select Additional Task window appears.



Click Install on “Ready to Install” window. The installation process will be started.



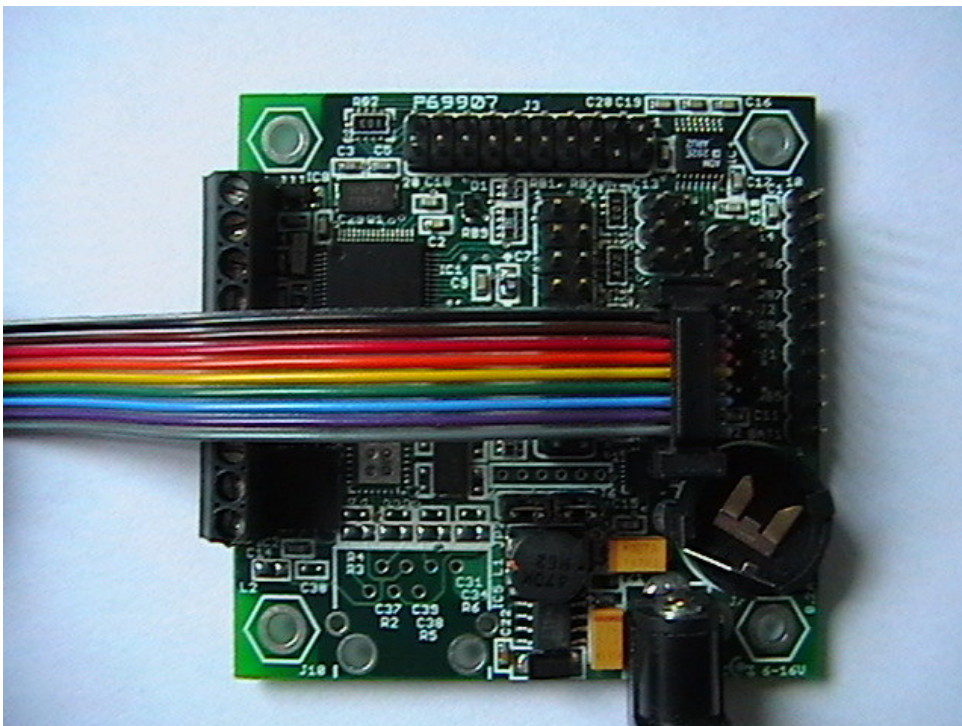
Click Finish on the last window.



Now you have all the software you need to build ARM applications and download them to the kit.

You should now assemble the hardware.

3. Connect the one end of the serial cable to the serial cable connector coming out of MINI-MAX/ARM-C

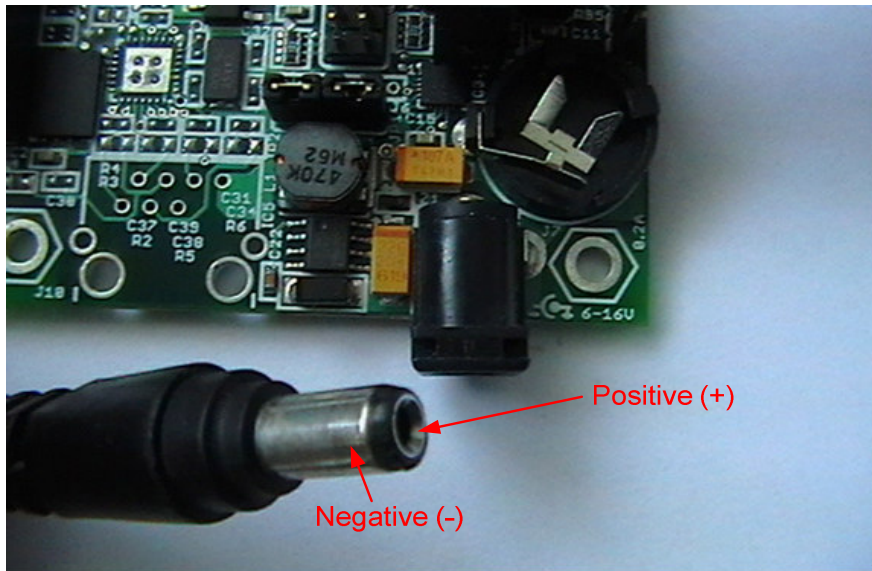


4. Connect the other end of the serial cable to an available RS232 Serial Port on your PC (such as COM1)

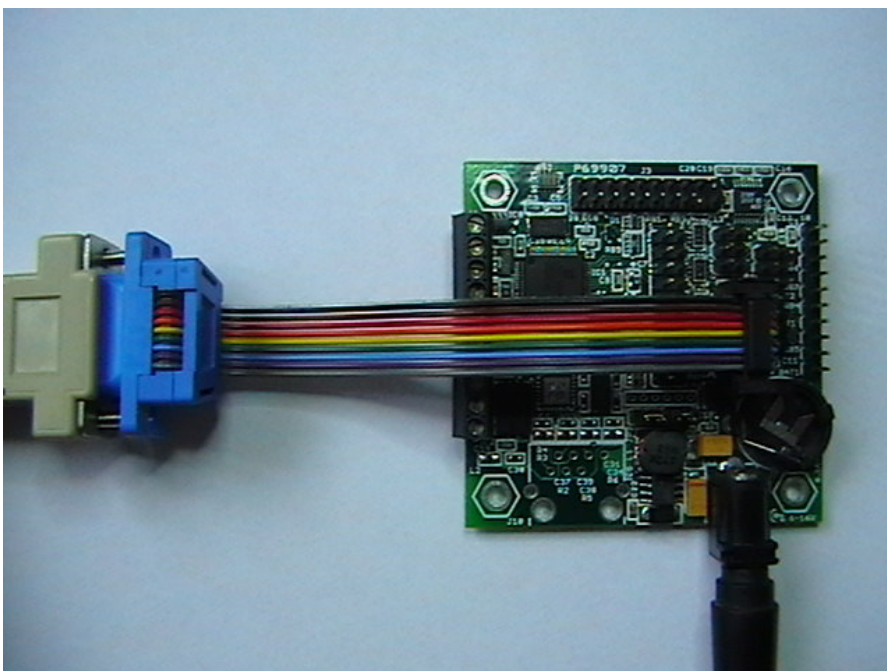
NOTE: If your PC does not have a serial port, you can use a USB-Serial converter. We offer [CBL-USB-COM-1](#) which is a USB-Serial converter that is known to work with OLED Development Kit

5. Connect the power plug of the power adapter to the power jack on the MINI-MAX/ARM-C:

IMPORTANT NOTE: The inner pin of the supply connector is positive and the outer ring is negative. **WARNING:** Correct polarity should be observed if you want to use an adapter or power supply other than the one that is provided with the kit.; otherwise MINI-MAX/ARM will be permanently damaged.



This is the board with connected serial cable and power cable.



6. Please plug an OLED-1 peripheral board into a 20-pin expansion connector of Mini-Max/ARM-C board.



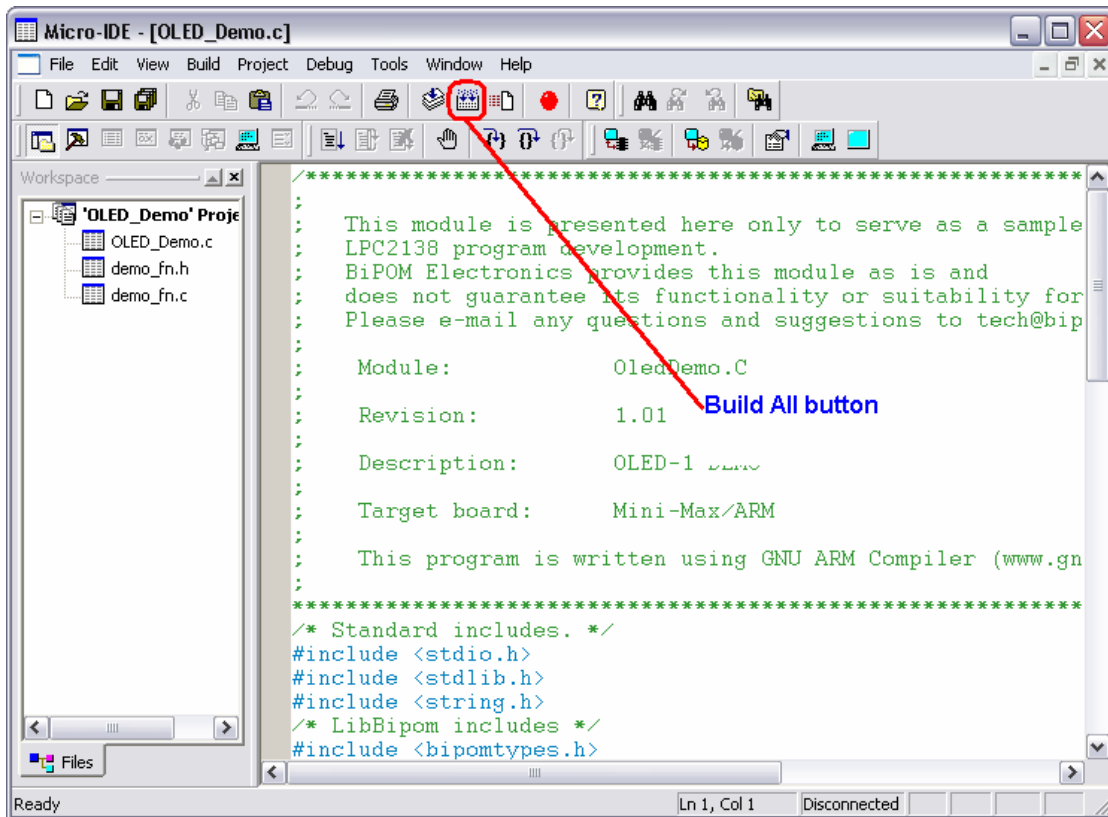
7. Connect the power adapter to the wall outlet.

8. Start Micro-IDE. You can start it from Windows Start menu:
Start → All Programs → Micro-IDE → Micro-IDE

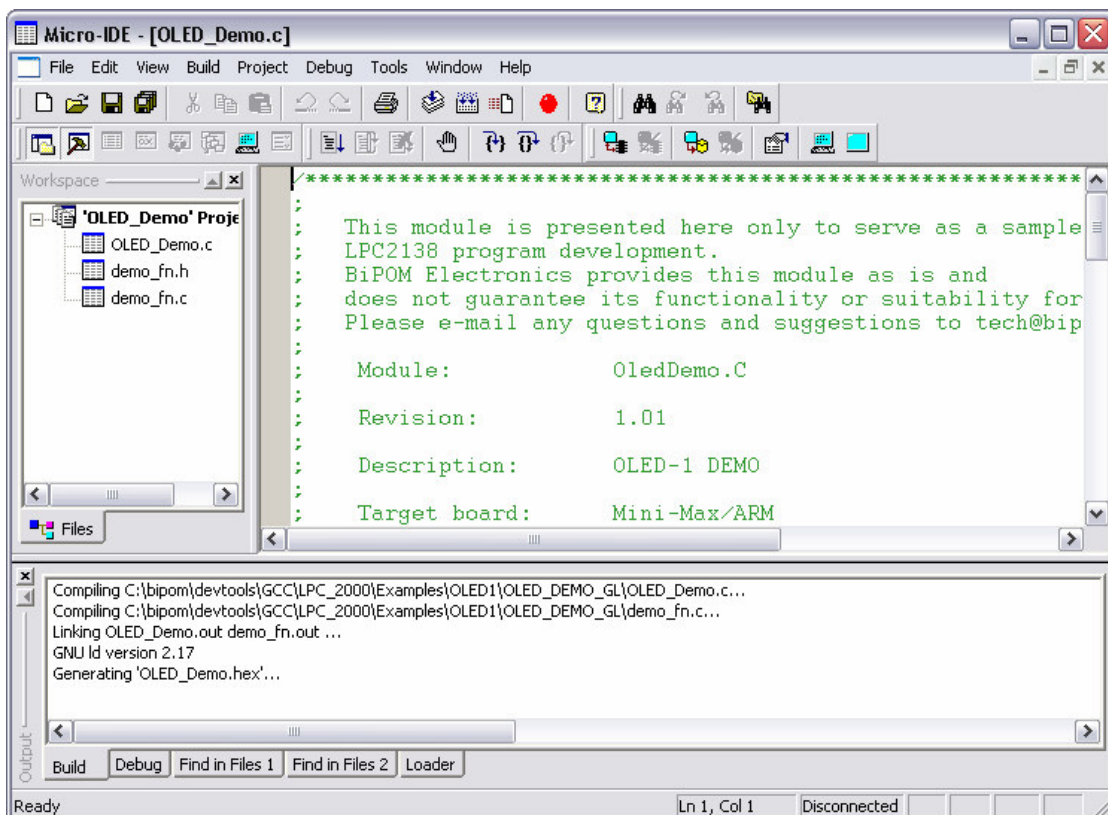
9. Click **Open Existing project** on Welcome dialog when Micro-IDE starts. Go to "c:\bipom\devtools\GCC\LPC2000\examples\GL\Oled1\OLED_DEMO_GL\\" and double-click **OLED_Demo.prj**. You will see all the project files on Micro-IDE windows.

```
Micro-IDE - [OLED_Demo.c]
File Edit View Build Project Debug Tools Window Help
Workspace: 'OLED_Demo' Proj
  OLED_Demo.c
  demo_fn.h
  demo_fn.c
;
; This module is presented here only to serve as a sample
; LPC2138 program development.
; BiPOM Electronics provides this module as is and
; does not guarantee its functionality or suitability for
; Please e-mail any questions and suggestions to tech@bip
;
; Module:           OledDemo.C
;
; Revision:         1.01
;
; Description:      OLED-1 DEMO
;
; Target board:    Mini-Max/ARM
;
; This program is written using GNU ARM Compiler (www.gn
;
; *****
; /* Standard includes. */
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
; /* LibBipom includes */
#include <bipomtypes.h>
```

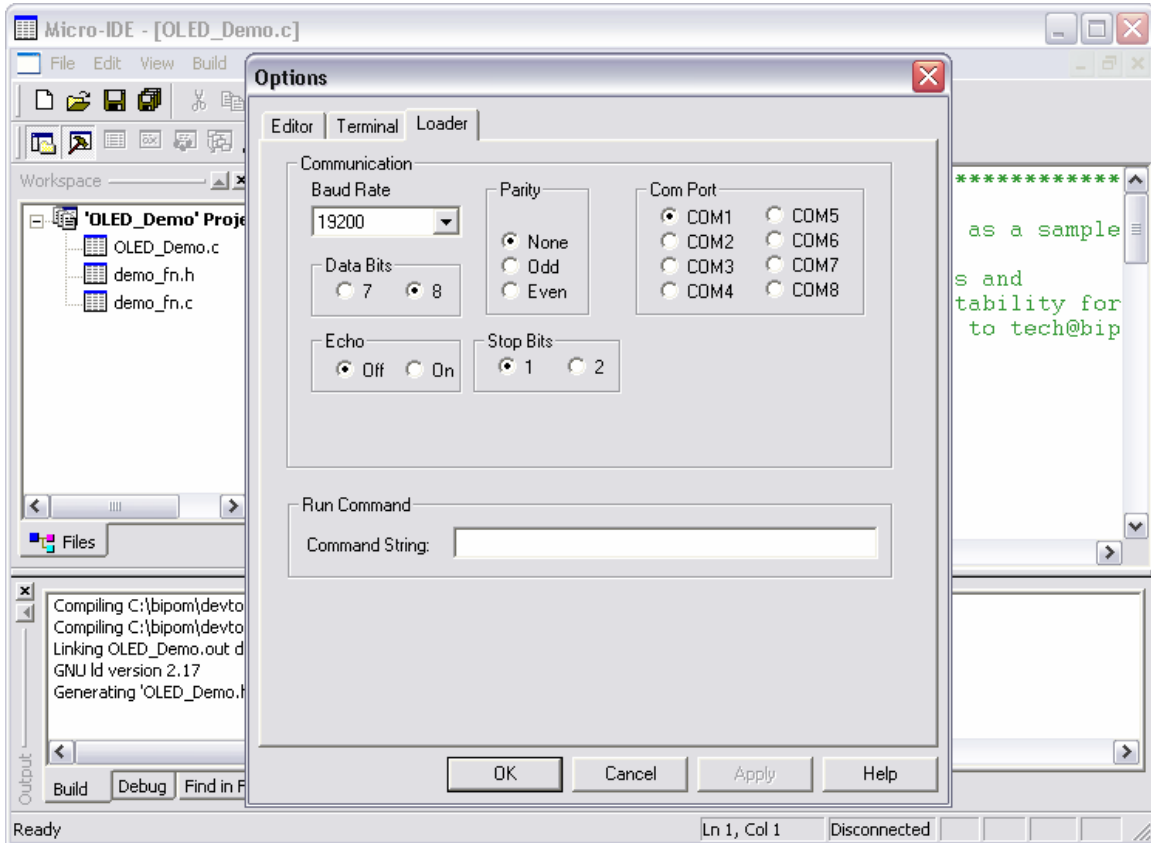

10. Press "Build All" icon button to generate HELLO.HEX file



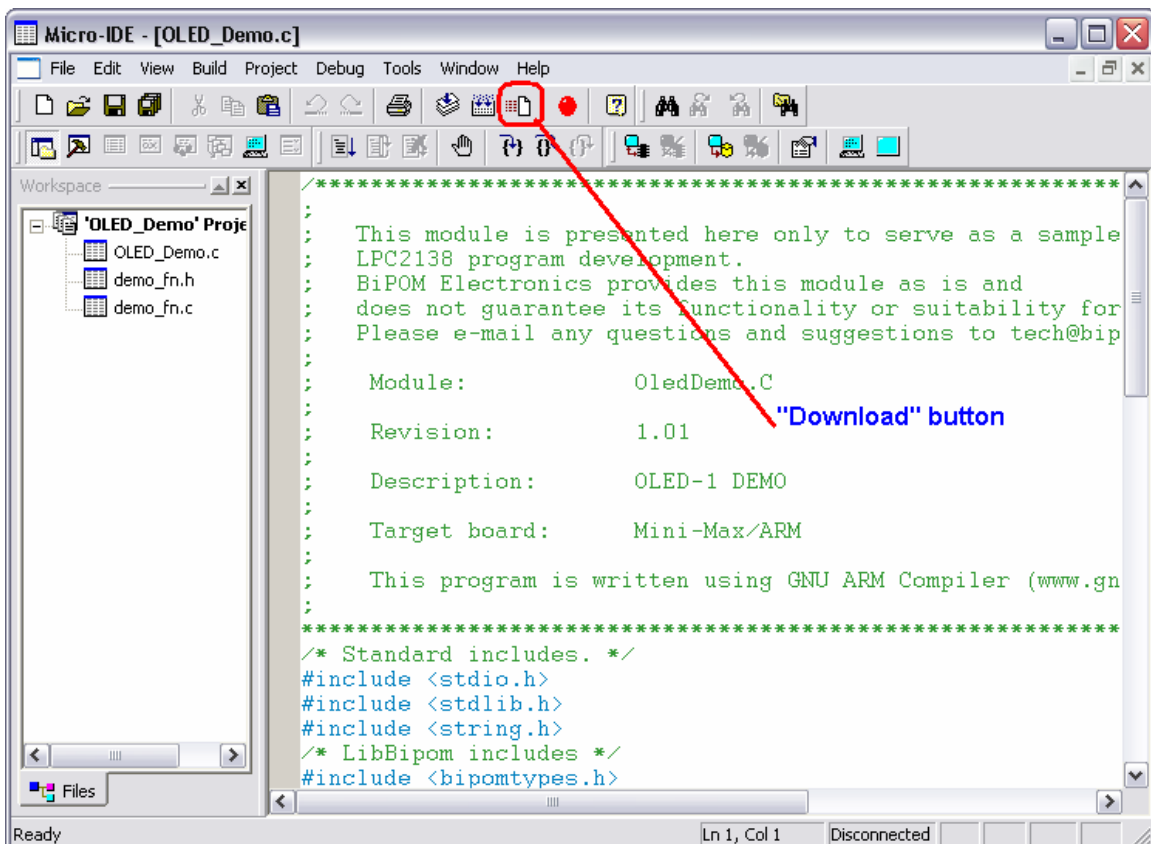
You should see the following messages in Output window. This means that the program is built and the HEX file is generated.



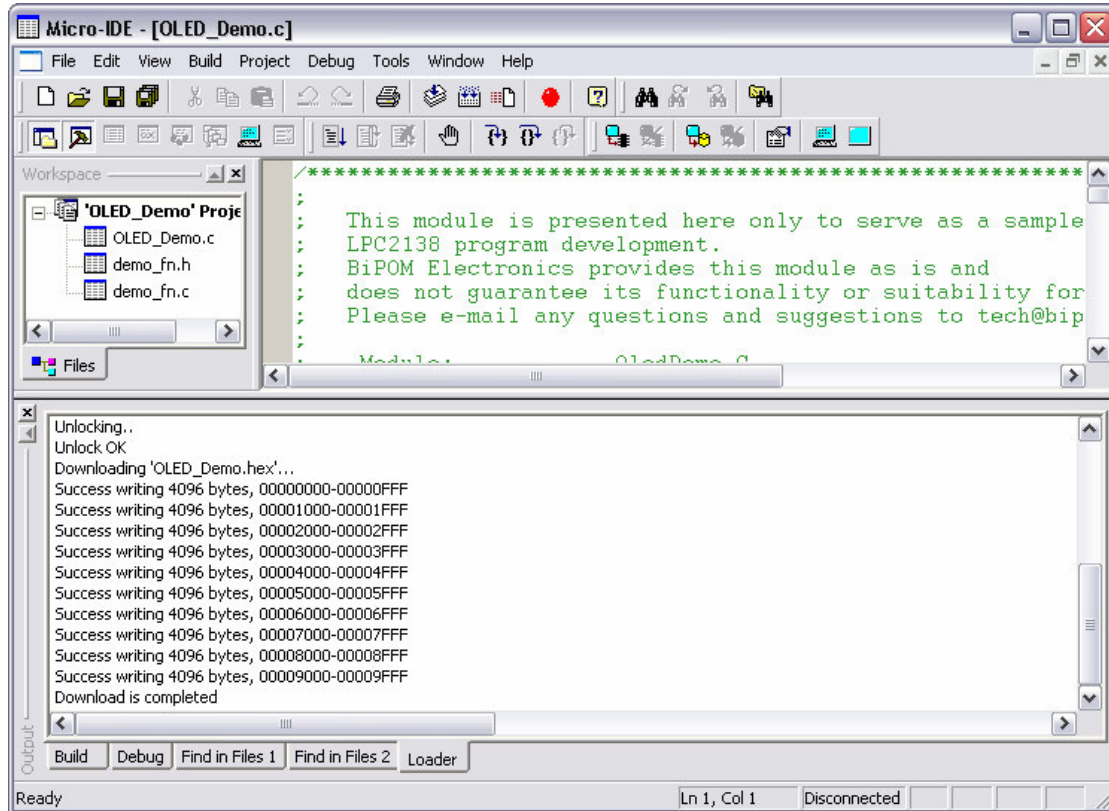
11. Configure MINI-MAX/ARM7 Loader (COM port, parity, baud rate and etc.) under **Tools → Options** menu. Click on **Loader** tab when Options dialog window appears.



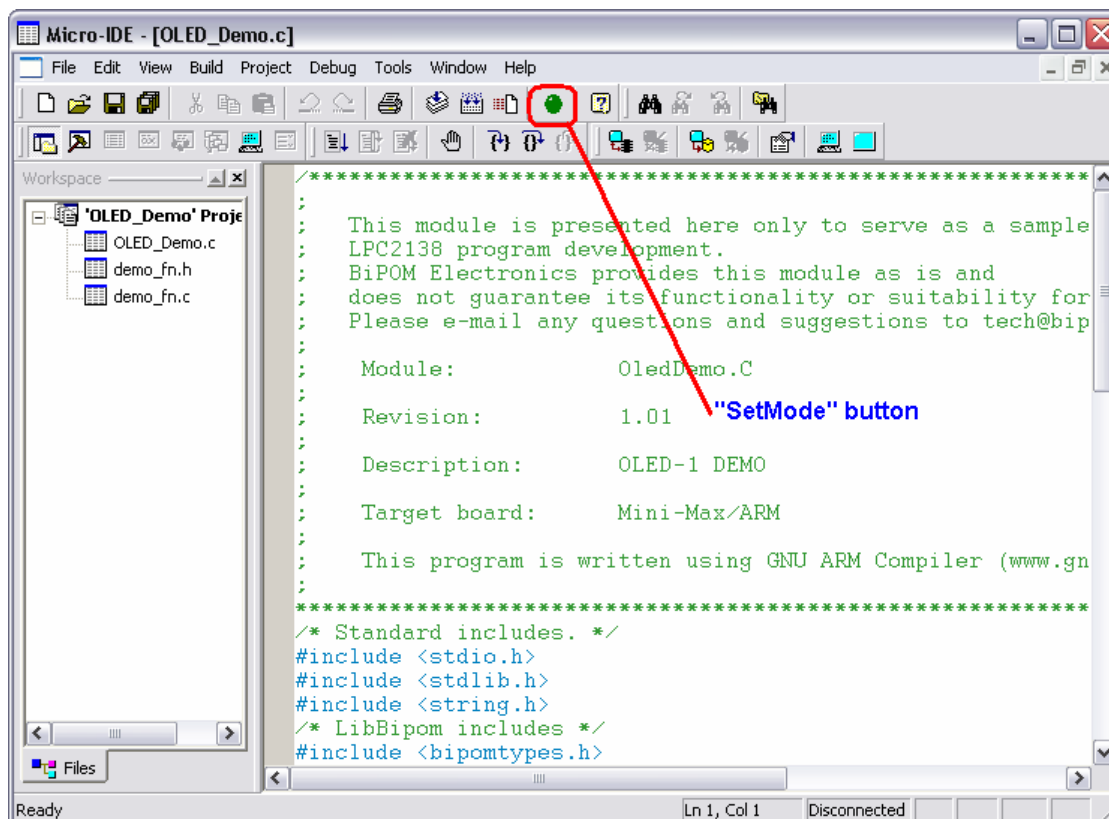
12. Press "Download" icon button. This downloads the generated HEX file to the board.



You should see the following output in Output window of Micro-IDE.



13. Change "Set Mode" icon button to green state.

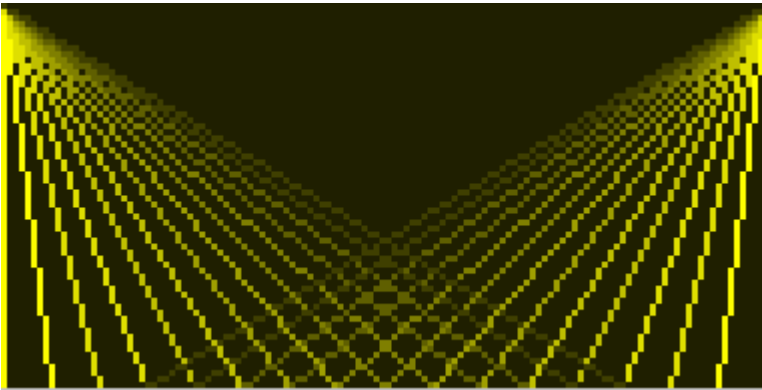


15. If you did everything correctly you should see running GL DEMO program on your OLED display. Then you can see several screenshots of this DEMO.

The First screen of DEMO:



The screen from Lines DEMO:



The screen from Rectangles DEMO:

