Features:

- ◆ NXP LPC1768 ARM Cortex-M3 100MHz
- ◆ 512KB on-chip flash, 32KB SRAM
- ◆ Two configurable RS-232/422/485 serial ports
- ◆ One 10/100 Mbps Ethernet ports
- ◆ One serial console port
- ◆ Support lwIP and BSD socket library
- ◆ Support tiny Web server and AJAX application
- ◆ Windows configuration utility included
- ◆ Support Telnet and serial console command
- ◆ Tool chain: Sourcery CodeBench Lite (download from www.mentor.com)

Specification:

CPU: NXP LPC1768 Cortex-M3 100MHz
Serial port:
    Port1: RS-232/422/485
    Port2: RS-232/485
    Baud rate: 1200 to 921600 bps
    Flow control: None/Hardware/Xon_Xoff
    Data bit: 5 to 8
    Stop bit: 1 to 2
    Protection: 15KV ESD
Ethernet:
    10/100 Mbps, RJ45
    Protection: 1500V Magnetic isolation
Serial console port:
    RS-232: 115200 baud rate, None flow control, 8 bits data, 1 stop bit

Power: 9~40 VDC power jack and terminal block
Dimension: 108x78x25 mm (HxWxD)
Operating Temperature: 0~70°C
Storage Temperature: -20~85°C

Product brief:

    Aport-212PG is a programmable serial to Ethernet gateway which includes Cortex-M3 CPU, 32KB SRAM and 512KB flash.   Aport-212PG is designed for users who are looking for a tiny but mighty computing platform which has FreeRTOS and lwIP pre-installed. The tool chain, Sourcery CodeBench Lite can be downloaded from mentor website or you can also use Keil from ARM. A tiny web server is also available for web-based application such as ajax. A demo web page source code is available for user's reference.
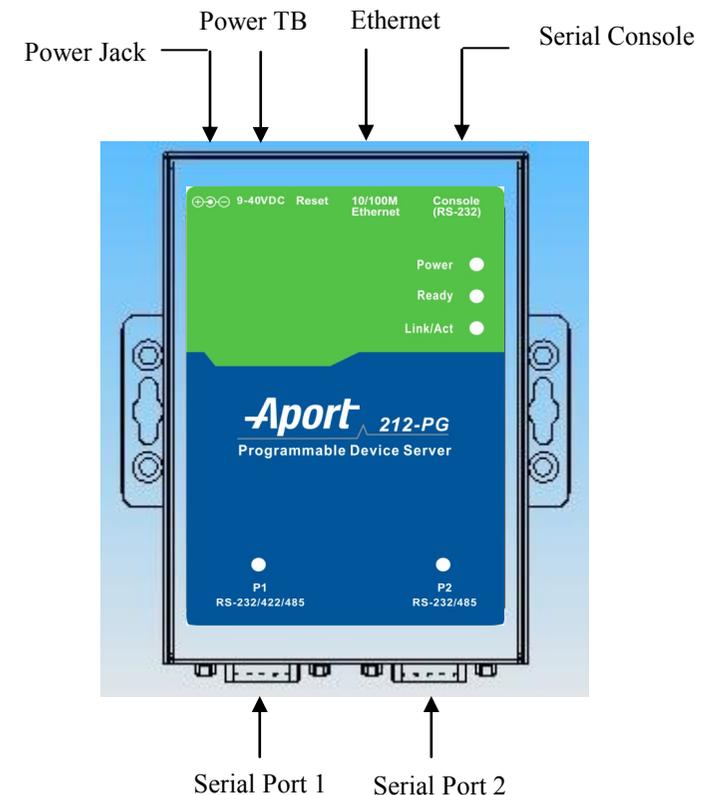
Packing List

1. Aport-212PG Programmable device server
2. Software tool chain (download from Artila cloud)
3. Manager Utility (download from Artila cloud)

Optional accessory

1. CB-RJ2CON-100: Serial Console Cable
2. DK-35A: DIN RAIL Mounting Kit
3. PWR-12V-1A: 110~240VAC to 12VDC 1A Power Adaptor

Layout

Power Jack — Power TB — Ethernet — Serial Console

9-40VDC Reset 10/100M Ethernet Console (RS-232)

Power
Ready
Link/Act

Aport 212-PG
Programmable Device Server

P1 RS-232/422/485   P2 RS-232/485

Serial Port 1   Serial Port 2

Power Connector

Connecting 9~40VDC power line with the Aport 212PG terminal block or the power jack. If the power is properly supplied, the Power LED will keep solid yellow color.

Serial Port Connector

Serial Port uses a Male DB9 connector and it includes RS-232, RS-422 or RS485 signal and pin assignments are described as follow:

Pin No.	RS-232	RS-422	RS-485
1	DCD*	TXD-	—
2	RXD	TXD+	—
3	TXD	RXD+	DATA+
4	DTR*	RXD-	DATA-
5	GND	GND	GND
6	DSR*	—	—
7	RTS	—	—
8	CTS	—	—
9	---	—	—
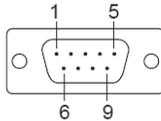
LED Status

The LED provides the Aport 212PG operation information. The LED status is described as follow:

Power LED: Power LED keeps ON if power (+9VDC to +40VDC) is correctly input to Aport 212.

Ready LED: Ready LED keeps ON when Aport 212PG firmware is ready for operation.

Link/Act LED: Link and Activity LED will turn ON when the Ethernet cable is connected. When there is network data traffic, this LED will flash.

RX/TX LED: The RX/TX LED is a dual color LED that indicates the serial data traffic. The Yellow LED stands for receiving data and Green LED means transmitting data.

Factory default setting

IP Address: 192.168.2.127
Netmask: 255.255.255.0
Serial Port : RS-232
Baud rate: 115200
Data : No parity,8 bits,1 stop bit
Flow control: None
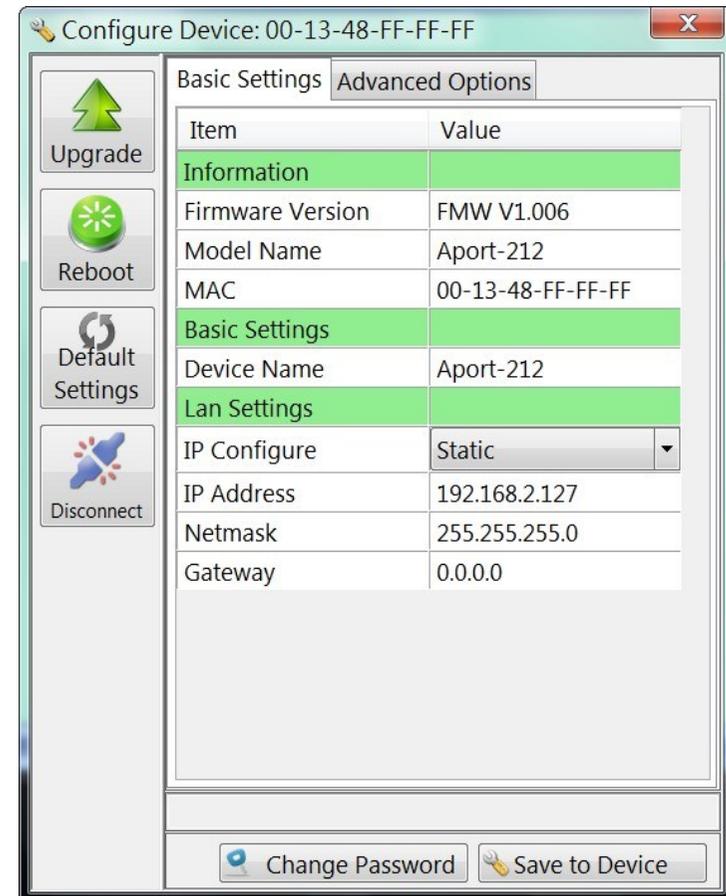Serial Console port: RS-232
Baud rate: 115200
Data: No parity,8 bits,1 stop bit
Flow control: None
Web console: http://192.168.2.127:5003
Telnet console: telnet 192.168.2.127 5001

Install Manager Utility Software

Aport-212PG comes with Artila CD where you can find many useful software utilities. You need to install Manager Utility first in order to configure the Aport-212PG. To install the Manager Utility, please find the ManagerUtilitysetup.exe as shown following
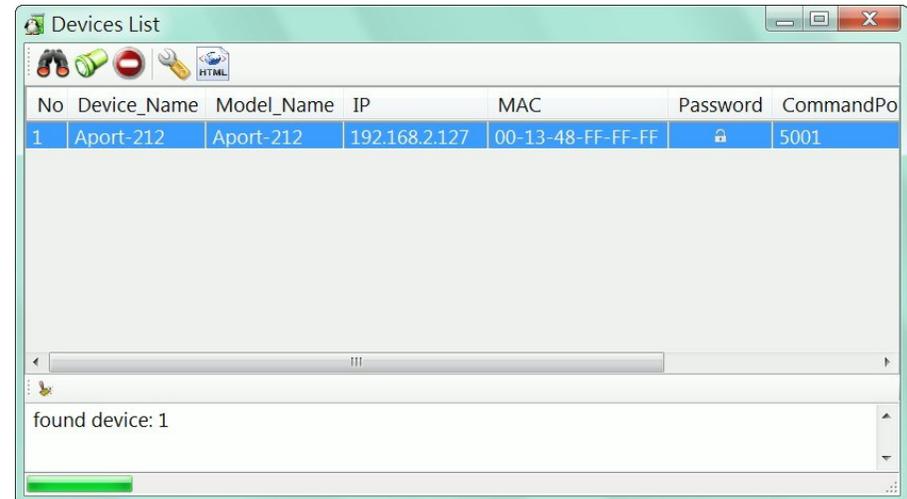
ManagerUtilitySetup
ManagerUtility Setup
Artila Electronics Co., Ltd.
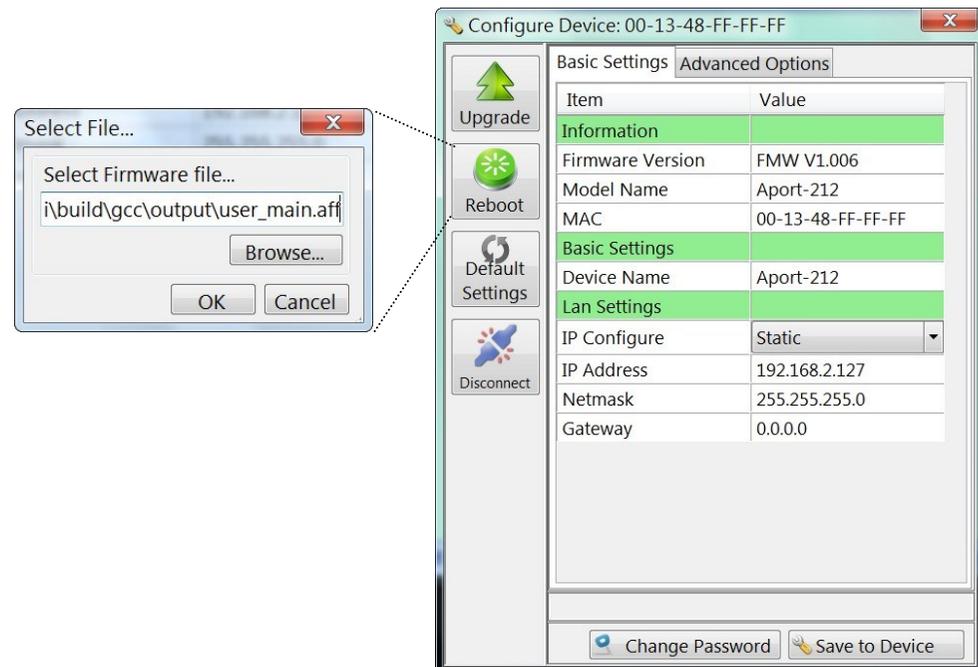
Broadcast search

Once start Manager utility, you can click telescope icon to search the Aport-212PG in the network.
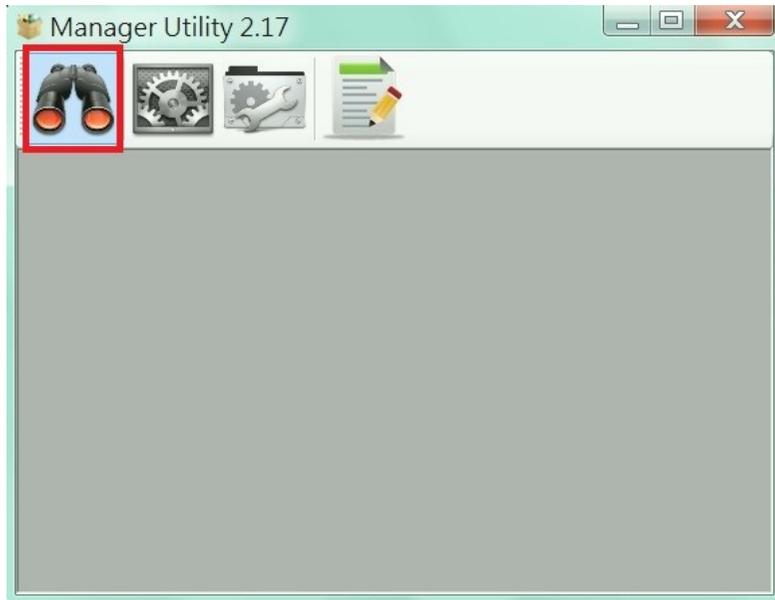
Click the device to configure its settings

Click the upgrade to upload the new firmware *user_main.aff*

Install Software Tool Chain

The Tool Chain, Sourcery CodeBench Lite ARM EABI Release is available at http://www.mentor.com/embedded-software/sourcery-tools/sourcery-codebench/editions/lite-edition/

Configure the environment to add the path of the tool chain. After installing tool chain, a new path will be added to Windows Environment i.e.

Sourcery_CodeBench_Lite_for_ARM_EABI\bin

Restart the computer to make the new environment effective. After installation, you can test tool chain as follow:

```
命令提示字元                                          [_][□][X]

Microsoft Windows [版本 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Ying>arm-none-eabi-gcc --version
arm-none-eabi-gcc (Sourcery CodeBench Lite 2012.09-63) 4.7.2
Copyright (C) 2012 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```
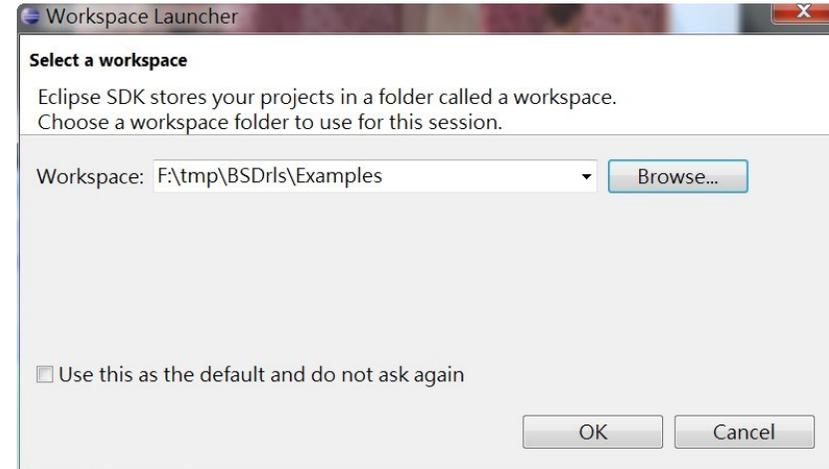
Install Eclipse IDE

If you are interesting in using IDE to develop your program, The eclipse IDE is available at http://www.eclipse.org/downloads/
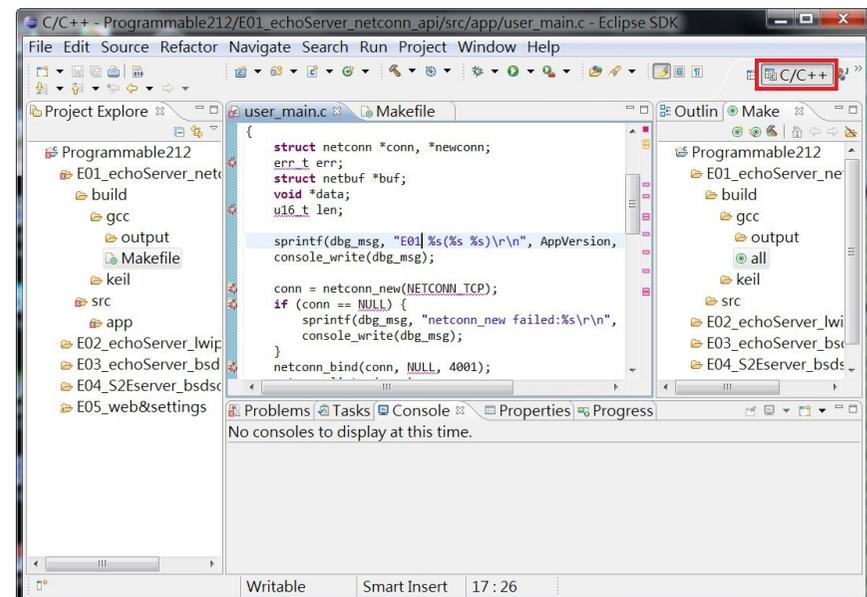
And choose C/C++ compiler option
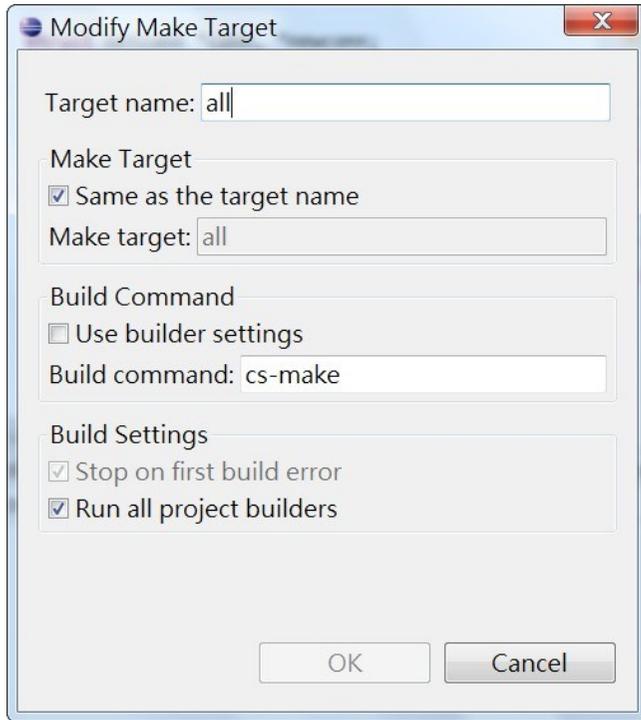
Start your first project

Run eclipse and select a workspace: BSDrls\Examples . You can find the path of the example program at the CD with path: BSDrls\Examples
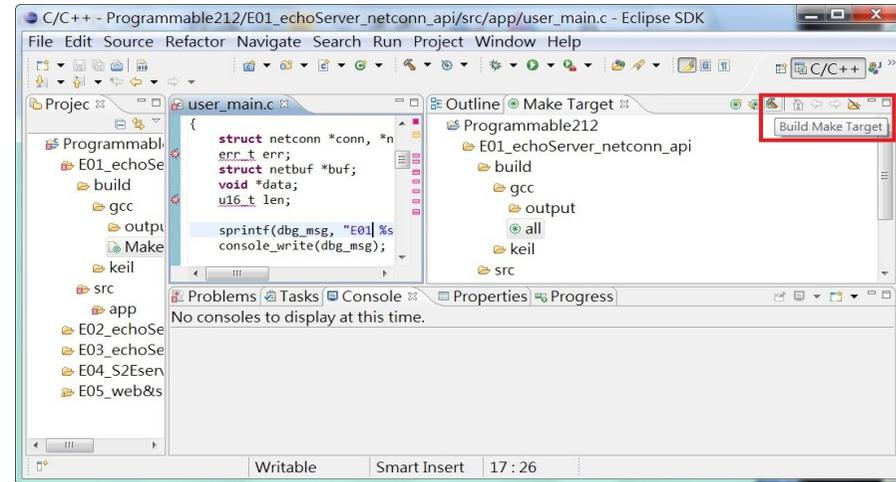
Choose C/C++ in the Workbench

Modify the make file to compile the program as follow

Use make file to build target

Once project is built，you will find the target execution file *user_main.aff* is generated and available at

E01_echoServer_netconn_api\build\gcc\output