MuntsOS Embedded Linux

Application Note #6: Free Pascal LED Flash Example

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Introduction

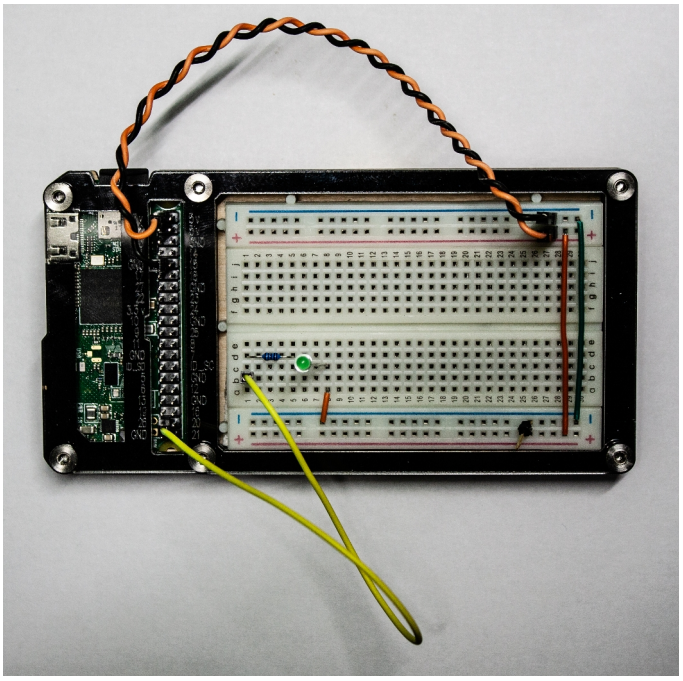
This application note describes how to create, build, and run a Free Pascal program to flash an LED on a target computer running ***MuntsOS Embedded Linux***.

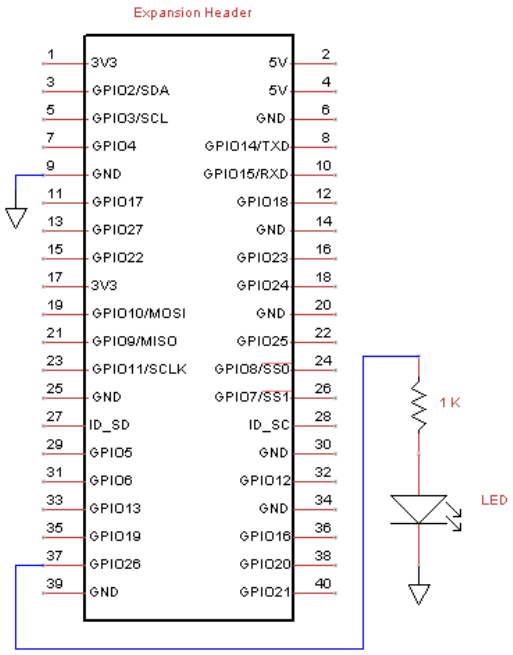
Prerequisites

The ***MuntsOS Embedded Linux*** software development environment must be installed on a Linux development computer (AppNote #1 or AppNote #2).

MuntsOS Embedded Linux must be installed on the target computer (AppNote #3).

Test Platform Hardware





The test platform for the purposes of this application note consists of a Raspberry Pi Zero 2 Wireless mounted in a Zebra Zero Plus Breadboard case. The orange and black jumper wires connect **`+3.3V`** and **`GND`** on the Raspberry Pi expansion header to the breadboard power rails. The yellow jumber connects **`GPIO26`** to a 1K ohm current limiting resistor and an LED.

Test Program Source Code

Available for download at: https://repo.munts.com/muntsos/doc/.blinky/blinky.pas

```
PROGRAM blinky(input, output);

USES
  SysUtils,
  GPIO,
  GPIO_libsimpleio,
  RaspberryPi;

VAR
  LED : GPIO.Pin;

BEGIN
  Writeln;
  Writeln('MuntsOS Free Pascal LED Test');
  Writeln;

  { Configure a GPIO output to drive an LED }

  LED := GPIO_libsimpleio.PinSubclass.Create(GPIO26, Output, False);

  { Flash the LED forever (until killed) }

  Writeln('Press CONTROL-C to exit.');
  Writeln;

  REPEAT
    LED.state := NOT LED.state;
    sleep(500);
  UNTIL False;
END.
```

Exercise

This example exercise demonstrates how to create a Free Pascal program project (outside of the ***MuntsOS*** code tree checkout), compile it, and run it on the test platform hardware.

Step 1: Prepare the **`blinky`** project:

```
mkdir $HOME/blinky
cd $HOME/blinky
wget https://repo.munts.com/muntsos/doc/.blinky/Makefile.freepascal
mv Makefile.freepascal Makefile
wget https://repo.munts.com/muntsos/doc/.blinky/blinky.pas
```

Step 2: Build the **`blinky`** project:

```
make BOARDNAME=RaspberryPiZero2W
```

Step 3: Copy **`blinky`** to the test platform:

```
scp blinky root@snoopy:.
```

Step 4: Run the test program on the test platform:

```
ssh root@snoopy
./blinky
```

The LED should begin flashing once a second, until you press **`CONTROL-C`**.