



Touchscreen Test Module

Software Development Notes

iDTRONIC GmbH
Donnersbergweg 1
67059 Ludwigshafen
Germany/Deutschland

Phone: +49 621 6690094-0
Fax: +49 621 6690094-9
E-Mail: info@idtronic.de
Web: idtronic.de

Issue 0.3
– 13. September 2016 –

Subject to alteration without prior notice.
© Copyright iDTRONIC GmbH 2013
Printed in Germany

Contents

1	General Description.....	3
2	Remote Access	3
2.1	Default access user name and password:.....	3
2.2	Ethernet Access	3
2.3	Ethernet Access on USB	4
2.4	Serial Interface Access	4
3	IDE ›Cloud9‹ for JavaScript Development.....	4
4	Using GPIO From Shell.....	5
4.1	One Time.....	5
4.2	To validate export	5
4.3	Toggle Relay:.....	5
4.4	Compile Demo SW	5
4.4.1	use .o file compile program	5
4.4.2	using LIB compile program	6
4.4.3	use DLL(must login with root for using).....	6
5	Position of Ports.....	6

1 General Description

The device is based on the BeagleBone processor board layout.

The software platform is a debian linux with pre-installed GUI.

For software development one can refer to the BeagleBone Black documentation.

1.1 HID Devices

A keyboard and mouse are automatically recognized on the USB ports. Please be aware that the keyboard layout is US.

2 Remote Access

2.1 Default access user name and password:

```
Name:      debian
PW:        tempwd
```

SSH needed, standard telnet will be refused.

2.2 Ethernet Access

The internal Ethernet port is configured to run automatically with DHCP.

These settings can be edited in the file:

```
/etc/network/interfaces
```

```
sudo chmod 777 interfaces (allow editing)
suso chmod 755 interfaces (disable editing)
```

2.3 Ethernet Access on USB

Some USB-to-Ethernet adapters may work with these settings:

```
auto eth0
iface eth0 inet static
    address 192.168.7.2
    netmask 255.255.255.0
    network 192.168.7.0
    gateway 192.168.7.1
```

2.4 Serial Interface Access

Inside the unit is a serial interface that allows terminal access as with the Ethernet interface(s).

Pls. see the pins labelled GND, RxD, TxD

The levels are TTL 3.3 V, 5 V compatible.

Communication parameters are:

Baud rate:	115'200 kbs
Data bits:	8 bits
Stop bits:	1 bit
Parity:	none
Flow control:	none

2.5 Autostart Configuration

Autostart of the Browser Iceweasel:

Edit the file:

```
sudo leafpad/etc/xdg/lxsession/LXDE/autostart
```

Edit this line:

```
@iceweasel /home/debian/Meeting-Raum.png
```

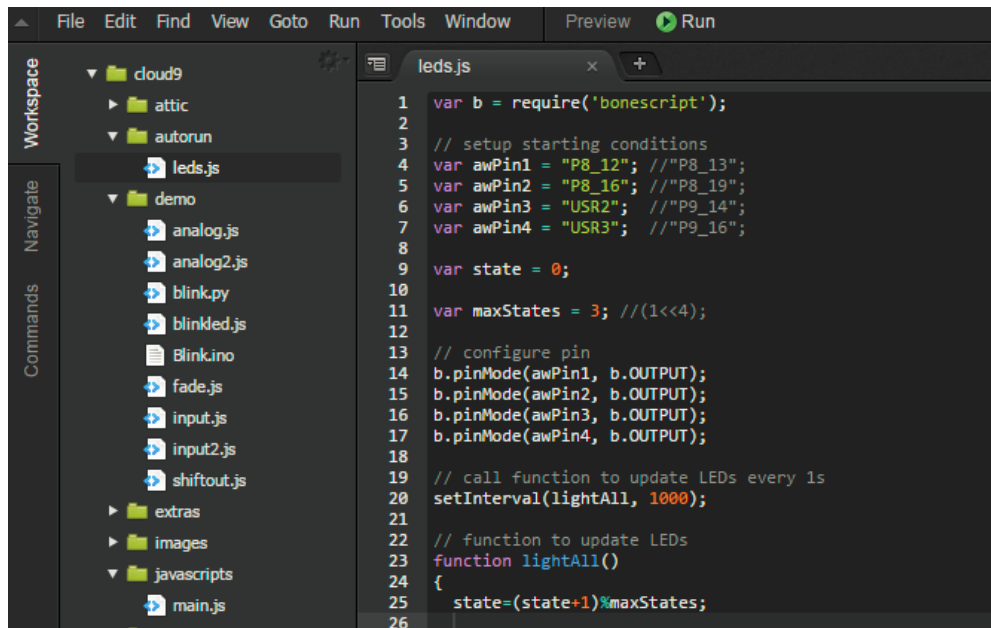
3 IDE ›Cloud9‹ for JavaScript Development

Access:

```
<IP-Address>:3000
```

Default:

```
192.168.152.2:3000
```



```

1  var b = require('bonescript');
2
3  // setup starting conditions
4  var awPin1 = "P8_12"; //P8_13";
5  var awPin2 = "P8_16"; //P8_19";
6  var awPin3 = "USR2"; //P9_14";
7  var awPin4 = "USR3"; //P9_16";
8
9  var state = 0;
10
11 var maxStates = 3; //(1<<4);
12
13 // configure pin
14 b.pinMode(awPin1, b.OUTPUT);
15 b.pinMode(awPin2, b.OUTPUT);
16 b.pinMode(awPin3, b.OUTPUT);
17 b.pinMode(awPin4, b.OUTPUT);
18
19 // call function to update LEDs every 1s
20 setInterval(lightAll, 1000);
21
22 // function to update LEDs
23 function lightAll()
24 {
25   state=(state+1)%maxStates;
26

```

Pls. read the file ›leds.js‹

The GPIO relay is connected on P8_18.

4 Using GPIO From Shell

4.1 One Time

```

root@beaglebone:~# cd /sys/class/gpio/
root@beaglebone:/sys/class/gpio# ls
export gpio44 gpio46 gpiochip0 gpiochip32 gpiochip64 gpiochip96 unexport
root@beaglebone:/sys/class/gpio# echo 65 > export

```

4.2 To validate export

```

root@beaglebone:/sys/class/gpio# cd gpio65
root@beaglebone:/sys/class/gpio/gpio65# cat direction
in
root@beaglebone:/sys/class/gpio/gpio65# echo out > direction
root@beaglebone:/sys/class/gpio/gpio65# cat value
0

```

4.3 Toggle Relay:

```

root@beaglebone:/sys/class/gpio/gpio65# echo 1 > value
root@beaglebone:/sys/class/gpio/gpio65# echo 0 > value
root@beaglebone:/sys/class/gpio/gpio65#

```

4.4 Compile Demo SW

4.4.1 use .o file compile program

And this programming of route of header file should be:

```
gcc -c main.c -I/home/level/bin/linux
```

Programming can execute program:

```
gcc -o main main.o all.o
```

Running (must login with root for using):

```
./main
```

4.4.2 using LIB compile program

```
gcc -o maina main.c -L. -lall -I/home/level/bin/linux
running(must login with root for using):
./main
```

4.4.3 use DLL(must login with root for using)

```
cp liball.so /lib/liball.so
Revise DLL as sharing mode:
chcon -t texrel_shlib_t /lib/liball.so
Compile program:
gcc -o mainso main.c /lib/liball.so -I/home/level/bin/linux
Run program:
./mainso
```

5 Position of Ports

