



## **iWRAP3 Release Notes**

**V e r s i o n 1 . 0**

**F r i d a y , J u l y 2 5 , 2 0 0 8**

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## VERSION HISTORY

<b>Version:</b>	<b>Author:</b>	<b>Comments:</b>
1.0	<i>JR, ET</i>	Release notes for iWRAP3

## TERMS & ABBREVIATIONS

<b>Term or Abbreviation:</b>	<b>Explanation:</b>
<b><i>Bluetooth</i></b>	Set of technologies providing audio and data transfer over short-range radio connections
<b><i>FAQ</i></b>	Frequently Asked Questions
<b><i>GPIO</i></b>	General Purpose Input Output
<b><i>HCI</i></b>	Host Controller Interface
<b><i>iWRAP</i></b>	Interface WRAP - a trademark registered by Bluegiga Technologies
<b><i>PCM</i></b>	Pulse Code Modulation
<b><i>SPI</i></b>	Serial Peripheral Interface
<b><i>UART</i></b>	Universal Asynchronous Receiver Transmitter
<b><i>USB</i></b>	Universal Serial Bus
<b><i>WRAP</i></b>	Wireless Remote Access Platform
<b><i>WT</i></b>	WRAP THOR

## **1. WHAT'S NEW**

### **1.1 New hardware**

iWRAP3 is optimized to run on the two new WRAP THOR modules, the WT32-A and WT32-E, which contain the CSR BlueCore5-Multimedia chip, in addition to the WT1x family of modules. Many of the new features in iWRAP3 are specifically related to these two modules. For more information, please see the WT32 related material.

Please note that on the iWRAP3 for WT32-A (internal antenna version) the default radio transmit power is set to 0 dBm to ensure optimal analogue audio quality at the most commonly used audio application distances. The transmit power can easily be changed via the ASCII interface; please see the iWRAP3 User Guide for details.

### **1.2 New lower level firmware**

iWRAP3 is built on top of the Cambridge Silicon Radio (CSR) Unified BlueCore firmware version 23d; iWRAP 2.2.0 was built on version 22b. The new CSR firmware has many new features and improved performance. Most notable is the support for Bluetooth 2.1 core specification. For more information, please see <http://www.csr.com>.

### **1.3 New Bluetooth certification**

Please see [https://www.bluetooth.org/tpg/QLI\\_viewQDL.cfm?qid=14328](https://www.bluetooth.org/tpg/QLI_viewQDL.cfm?qid=14328)

Notes:

- WT32 and iWRAP3 are both Bluetooth 2.1+EDR certified so the EPL is for 2.1+EDR
- Although iWRAP3 is 2.1+EDR certified, WT11 and WT12 are still 2.0+EDR so the end devices from these pairs form are still 2.0+EDR.

### **1.4 New ordering codes**

The new ordering codes are as follows:

WT32-A-AI3  
WT32-E-AI3  
WT12-A-AI3  
WT11-A-AI3  
WT11-E-AI3

## **1.5 Main new features**

### **1.5.1 Advanced Audio Distribution Profile (A2DP)**

This is a WT32 only feature. iWRAP3 supports both A2DP audio source and A2DP audio sink profiles; these provide high quality audio streaming over a Bluetooth link. Please see the iWRAP3 User Guide and Bluetooth specification for more detailed information.

### **1.5.2 Over-the-air Configuration (OTA)**

iWRAP3 implements a profile that allows remote configuration via the ASCII interface. This is very useful for on-the-field configuration of modules.

### **1.5.3 HID**

iWRAP3 implements the Human Interface Device profile (HID), which allows keyboard and mouse functionality to be used over a Bluetooth link.

### **1.5.4 New commands**

For a quick overview of new commands supported, please see the following entries in the iWRAP3 User Guide:

**BATTERY** (WT32 only)

**CLOCK**

**CONNECT** (extending range)

**DEFRAG**

**IDENT** (Using Device Identification Profile Specification)

**KILL**

**PAIR**

**PIO** (full GPIO handlers)

**SET CONTROL MICBIAS** (WT32 only)

**SET CONTROL GAIN** (WT32 only)

**SET CONTROL VREGEN** (WT32 only)

**SET PROFILE A2DP** (WT32 only)

**SET PROFILE HID**

**SET PROFILE OTA**

**TEMP**

**VOLUME** (WT32 only)

### **1.5.5 Changed commands**

**SET BT POWER** now has an optional third parameter

**SET CONTROL AUTOCALL** now accepts all profiles that **CALL** does

### **1.5.6 Coming soon**

Firmware images for HCI modes will be added to the update client; presently the HCI modes can be activated with the iWRAP BOOT command or by modifying the relevant Persistent Store Keys as instructed in the User Guide.

## 2. UPDATING

### 2.1 Update Introduction

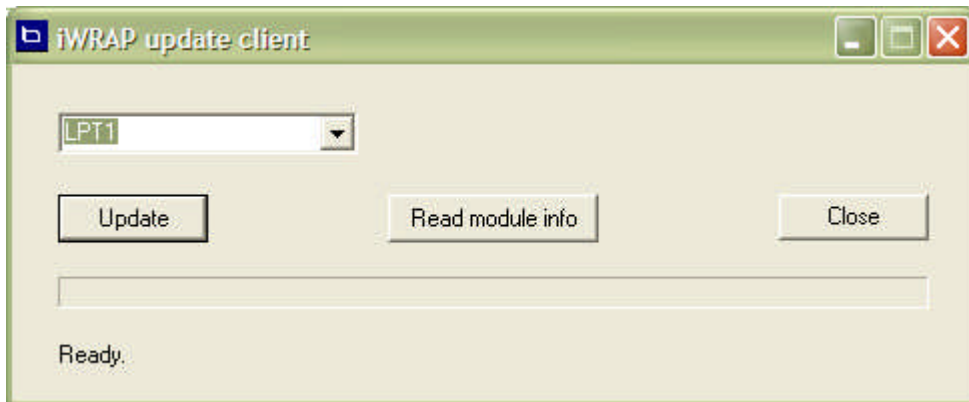
iWRAP Update client is a simple Windows software, which enables you to update the firmware of your WRAP THOR modules. This user guide instructs you to perform the update in a simple step-by-step manner.

#### Notes:

- iWRAP update client can be only used to update the firmware over SPI interface.
- iWRAP update client always restores the factory settings of your module.
- Never install the .xpv and .xdv files delivered with the iWRAP update client using the BlueFlash utility. Doing so will corrupt the firmware, because the BlueFlash images do not include the necessary Persistent Store Key parameters.

### 2.2 Performing The Update

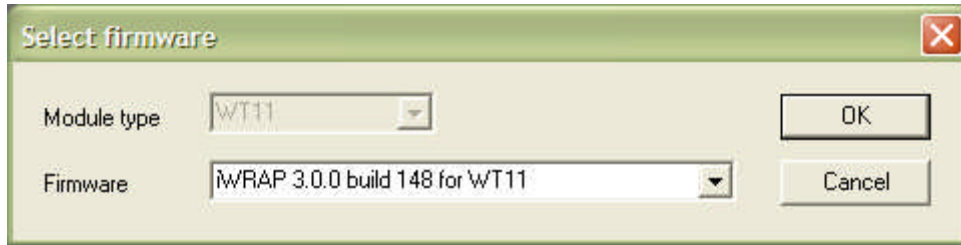
1. Connect the On-board Installation kit (or similar SPI cable) to the SPI interface of the module
2. Power up your WRAP THOR Bluetooth module
3. Start iWRAP Update Client. You should see a dialog similar to the one in the figure below:



**Figure 1:** iWRAP Update Client

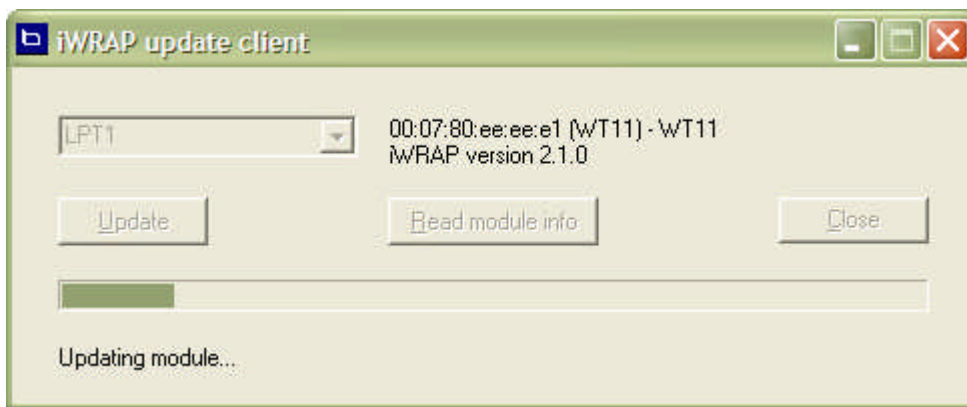
4. Press the **Update** button. iWRAP update clients shows the latest firmware version for your currently attached module.





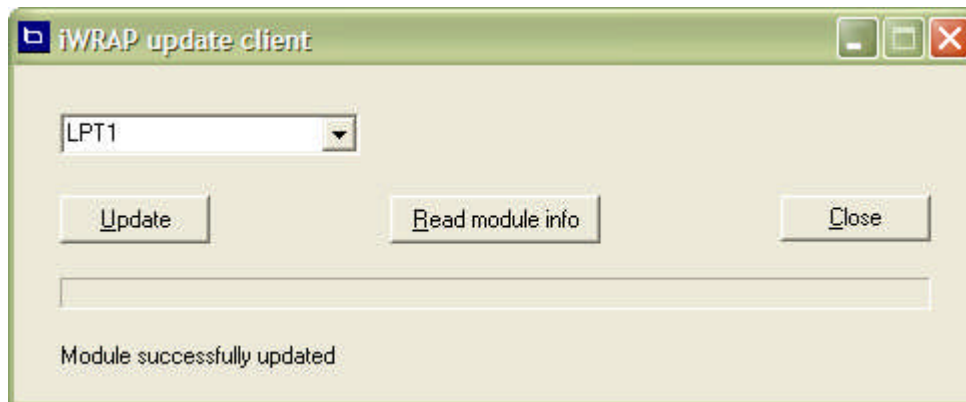
**Figure 2:** Firmware display

5. Confirm by pressing **OK**. iWRAP Update Client will start updating the firmware and it may take several minutes.



**Figure 3:** Update ongoing

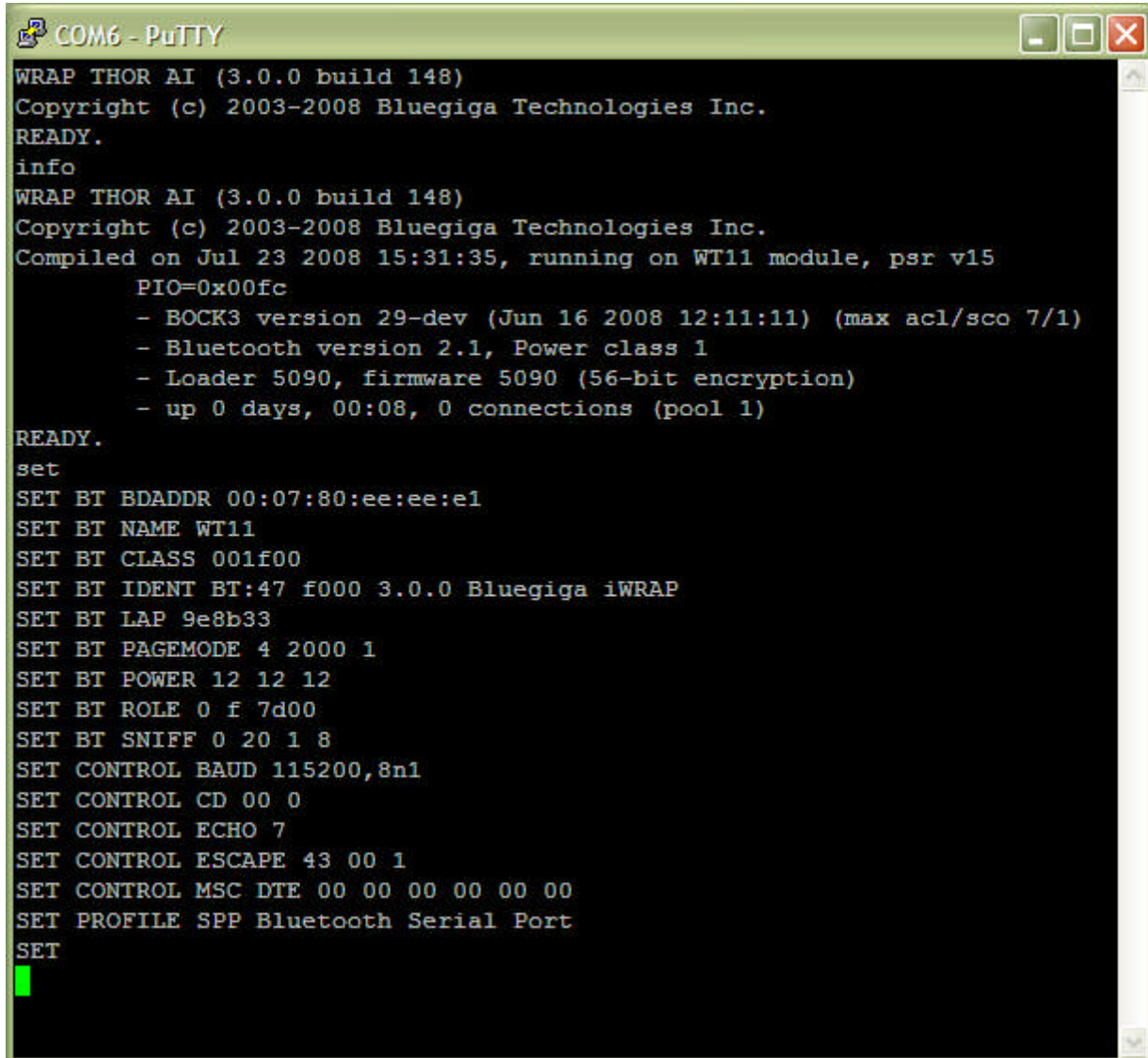
6. Once the update is complete, you should see a screen similar to figure 4.



**Figure 4:** Update completed

7. You can now close the update client window (or, if you have several modules to upgrade, take the next module and restart from step 1.)

8. In your terminal window you should get an output similar to the one shown below.



```
COM6 - PuTTY
WRAP THOR AI (3.0.0 build 148)
Copyright (c) 2003-2008 Bluegiga Technologies Inc.
READY.
info
WRAP THOR AI (3.0.0 build 148)
Copyright (c) 2003-2008 Bluegiga Technologies Inc.
Compiled on Jul 23 2008 15:31:35, running on WT11 module, psr v15
PIO=0x00fc
- BOCK3 version 29-dev (Jun 16 2008 12:11:11) (max acl/sco 7/1)
- Bluetooth version 2.1, Power class 1
- Loader 5090, firmware 5090 (56-bit encryption)
- up 0 days, 00:08, 0 connections (pool 1)
READY.
set
SET BT BDADDR 00:07:80:ee:ee:e1
SET BT NAME WT11
SET BT CLASS 001f00
SET BT IDENT BT:47 f000 3.0.0 Bluegiga iWRAP
SET BT LAP 9e8b33
SET BT PAGEMODE 4 2000 1
SET BT POWER 12 12 12
SET BT ROLE 0 f 7d00
SET BT SNIFF 0 20 1 8
SET CONTROL BAUD 115200,8n1
SET CONTROL CD 00 0
SET CONTROL ECHO 7
SET CONTROL ESCAPE 43 00 1
SET CONTROL MSC DTE 00 00 00 00 00 00
SET PROFILE SPP Bluetooth Serial Port
SET
```

9. If for any reason you wish to downgrade your firmware to an older version, please download the previous version of the update client from the Bluegiga Techforum.

## 2.3 Troubleshooting

### • Unable to identify module

- Please check that the module is powered up
- Please check that the SPI cable is connected and the first pin of the SPI plug (usually marked with a red wire in the SPI cable) is connected to the first SPI pin (top right) on the evaluation board. If you aren't sure, try to connect the cable both ways, as it will not break anything.

### • Unable to connect to module

- Please check that the module is powered up
- Please check that the SPI connection is good
- Sometimes Windows requires you to reinstall the SPI drivers. Please run the **install.bat** from the *drivers* folder and try again
- Also, sometimes on fast computers (>2Ghz) the SPI communications may fail. Installing Bluesuite 1.23 from Bluegiga Tech-forum should resolve this issue (<http://www.bluegiga.com/techforum>).

### • If the update still does not work

- Check if you are able to connect to the module with BlueFlash
- Check from your PC's BIOS that LPT port is enabled and in ECP mode.
- Contact Bluegiga's support

## 2.4 Support

In case of problems, please contact [\*\*support@bluegiga.com\*\*](mailto:support@bluegiga.com)