

# How to Download the Firmware image over the USB

5/28/2015

# Overview of Kiosk2 tools and firmware

- HidApp.exe – the tool that is used for firmware download (Provide this tool to customer as reference only.)
- Two components of the Firmware
  - File Loader –is a main image that can overwrite the Bootloader.
  - Application Image – this is an image of the firmware that is downloaded over the USB interface. This image makes calls to the USB drivers that are contained in the boot-loader.
- Load file order:
  1. File Loader file. (EC8\_FL\_1\_0\_1\_w\_EC9\_BL\_x\_x\_x.hex)
  2. Main Image. (EC8\_GR2\_x\_x\_Cxx\_-rxxx.hex)

Connect the reader using the USB interface..  
Click on "Detect HID Device"

**Vivotech Hid USBTool**

**Kiosk2 USB Tool**  
V2.0 Copyright (C) 2010 Vivotech

**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

**Vivotech Cmds**  
Ping command

**Write Command Params**  
RAM Addr: 40002000  
Flash Addr: 00010000  
Data Size: 00000004  
Data: DEADBEEF  
Quiet: ☐ ☒ Debug

**Test HID Device**  
1 Report No.  
Once  
Continuous  
1000 ms Interval

**Download File**  
CANDIDATE.hex

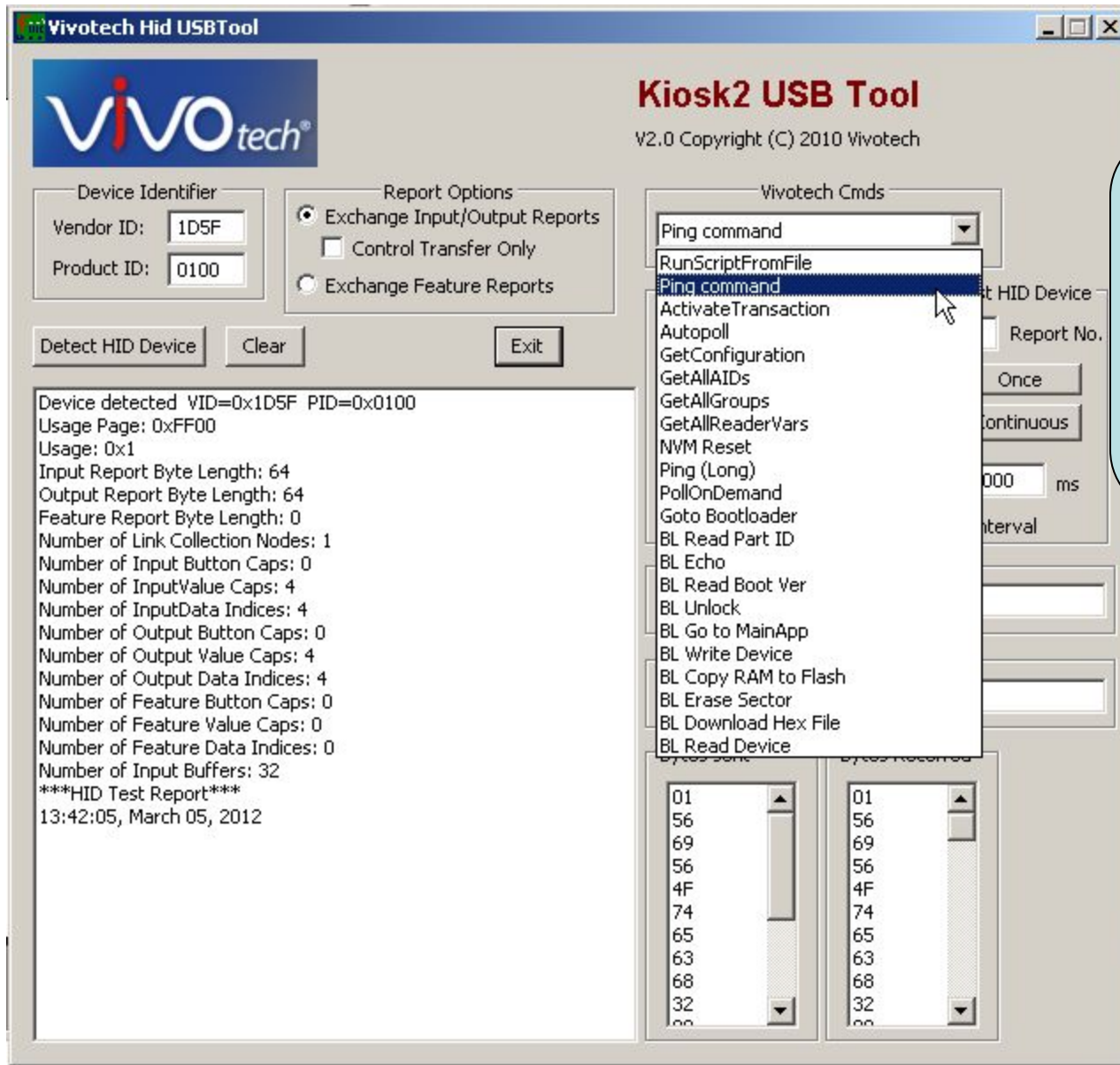
**Upload File**  
memory\_dump.txt

**Bytes sent**  
01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

**Bytes Received**  
01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

**Detect HID Device** Clear Exit

Device detected VID=0x1D5F PID=0x0100  
Usage Page: 0xFF00  
Usage: 0x1  
Input Report Byte Length: 64  
Output Report Byte Length: 64  
Feature Report Byte Length: 0  
Number of Link Collection Nodes: 1  
Number of Input Button Caps: 0  
Number of Input Value Caps: 4  
Number of Input Data Indices: 4  
Number of Output Button Caps: 0  
Number of Output Value Caps: 4  
Number of Output Data Indices: 4  
Number of Feature Button Caps: 0  
Number of Feature Value Caps: 0  
Number of Feature Data Indices: 0  
Number of Input Buffers: 32  
\*\*\*HID Test Report\*\*\*  
13:42:05, March 05, 2012



To verify that the reader is communicating, select the “Ping Command” and then click on the “Once” button.

**Vivotech Hid USBTool**

**Kiosk2 USB Tool**  
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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

**Vivotech Cmds**  
Ping command

**Write Command Params**  
 RAM Addr: 40002000  
 Flash Addr: 00010000  
 Data Size: 00000004  
 Data: DEADBEEF  
 Quiet: 0 ☐ Debug

**Test HID Device**  
 1 Report No.  
 Once  
 Continuous  
 1000 ms Interval

Detect HID Device Clear Exit

Output Report Byte Length: 64  
 Feature Report Byte Length: 0  
 Number of Link Collection Nodes: 1  
 Number of Input Button Caps: 0  
 Number of Input Value Caps: 4  
 Number of Input Data Indices: 4  
 Number of Output Button Caps: 0  
 Number of Output Value Caps: 4  
 Number of Output Data Indices: 4  
 Number of Feature Button Caps: 0  
 Number of Feature Value Caps: 0  
 Number of Feature Data Indices: 0  
 Number of Input Buffers: 32  
 \*\*\*HID Test Report\*\*\*  
 13:42:05, March 05, 2012

---Ping Packet---  
 56 69 56 4F 74 65 63 68 32 00 18 01 00 00 B3 CD  
 Sent Report type 1 len 64 total len 16

Read Response: ReportLength=64  
 56 69 56 4F 74 65 63 68 32 00 18 04 00 00 CC 35  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 64 (64) Bytes Read report 1  
☐ VIVOtech2

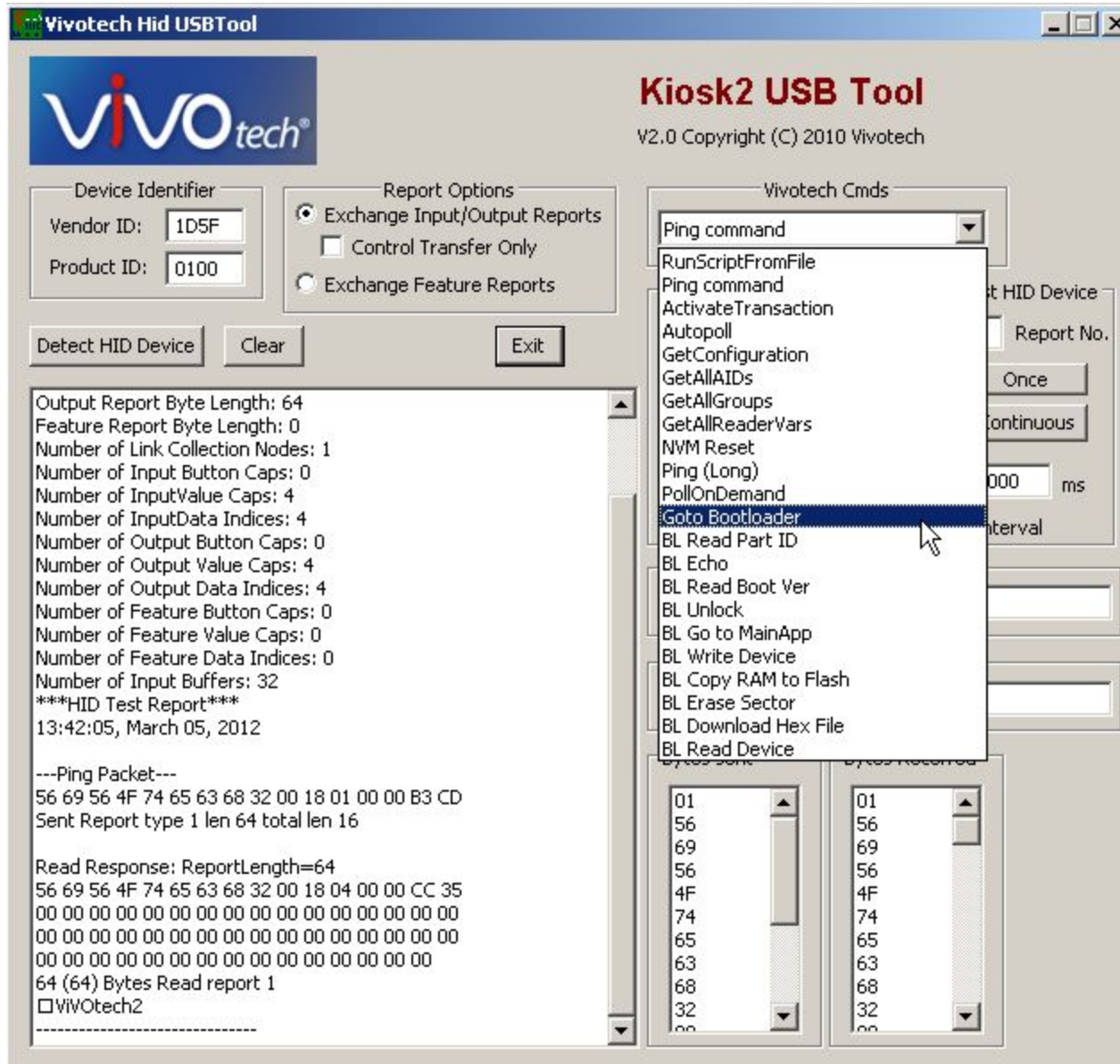
Download File  
CANDIDATE.hex

Upload File  
memory\_dump.txt

**Bytes sent**  
 01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

**Bytes Received**  
 01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

You should see  
the response to  
the Ping packet  
in the window



Select the “Goto Bootloader” command and then click on the “Once” button.



**Vivotech Hid USBTool**

**Kiosk2 USB Tool**  
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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

**Vivotech Cmds**  
Goto Bootloader

**Write Command Params**  
 RAM Addr: 40002000  
 Flash Addr: 00010000  
 Data Size: 00000004  
 Data: DEADBEEF  
 Quiet: ☐ ☒ Debug

**Test HID Device**  
 Report No.: 1  
 Once  
 Continuous  
 1000 ms Interval

Detect HID Device Clear Exit

Number of InputValue Caps: 4  
 Number of InputData Indices: 4  
 Number of Output Button Caps: 0  
 Number of Output Value Caps: 4  
 Number of Output Data Indices: 4  
 Number of Feature Button Caps: 0  
 Number of Feature Value Caps: 0  
 Number of Feature Data Indices: 0  
 Number of Input Buffers: 32  
 \*\*\*HID Test Report\*\*\*  
 13:42:05, March 05, 2012

---Ping Packet---  
 56 69 56 4F 74 65 63 68 32 00 18 01 00 00 B3 CD  
 Sent Report type 1 len 64 total len 16

Read Response: ReportLength=64  
 56 69 56 4F 74 65 63 68 32 00 18 04 00 00 CC 35  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 64 (64) Bytes Read report 1  
 □vivotech2

---Goto Bootloader---  
 56 69 56 4F 74 65 63 68 32 00 07 02 00 00 AA 5B  
 Sent Report type 1 len 64 total len 16

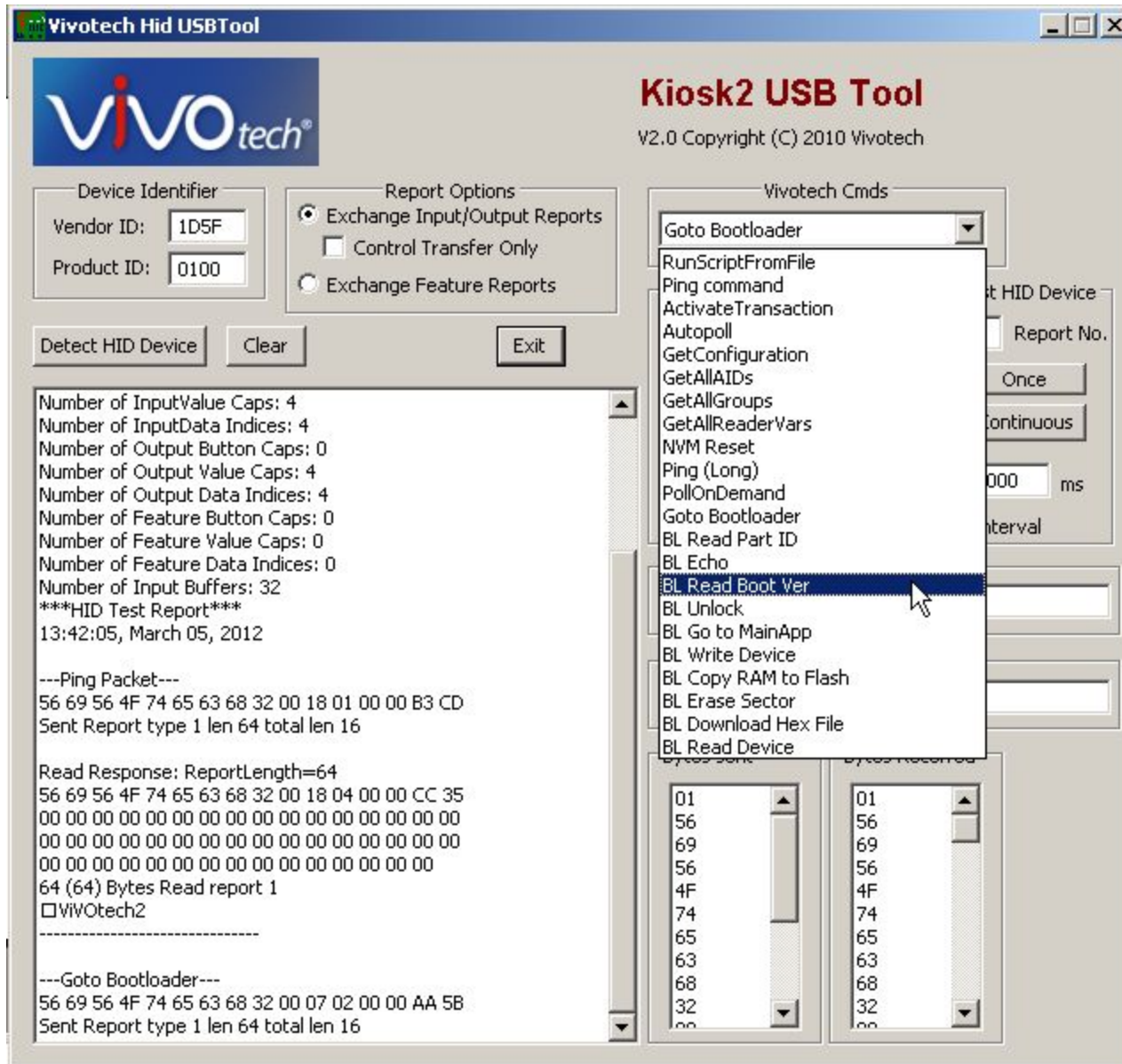
**Download File**  
CANDIDATE.hex

**Upload File**  
memory\_dump.txt

**Bytes sent**  
 01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

**Bytes Received**  
 01  
56  
69  
56  
4F  
74  
65  
63  
68  
32  
00

This is what  
you should  
see in the  
window.



2.)To verify that you are communicating with the Bootloader, click on “BL Read Boot Ver.” Then click “Once”



The bootloader version displays in the window.

**Vivotech Hid USBTool**

**vivo tech®**

**Kiosk2 USB Tool**  
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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

**Vivotech Cmds**  
BL Read Boot Ver

**Write Command Params**  
RAM Addr: 40002000  
Flash Addr: 00010000  
Data Size: 00000004  
Data: DEADBEEF  
Quiet: ☐ ☒ Debug

**Test HID Device**  
Report No.: 1  
Buttons: Once, Continuous  
Interval: 1000 ms

**Download File**  
CANDIDATE.hex

**Upload File**  
memory\_dump.txt

**Bytes sent**  
01  
4B  
0A  
0D  
00

**Bytes Received**  
01  
4B  
0D  
0A  
30  
0D  
0A  
36  
30  
0D  
0A

Detect HID Device Clear Exit

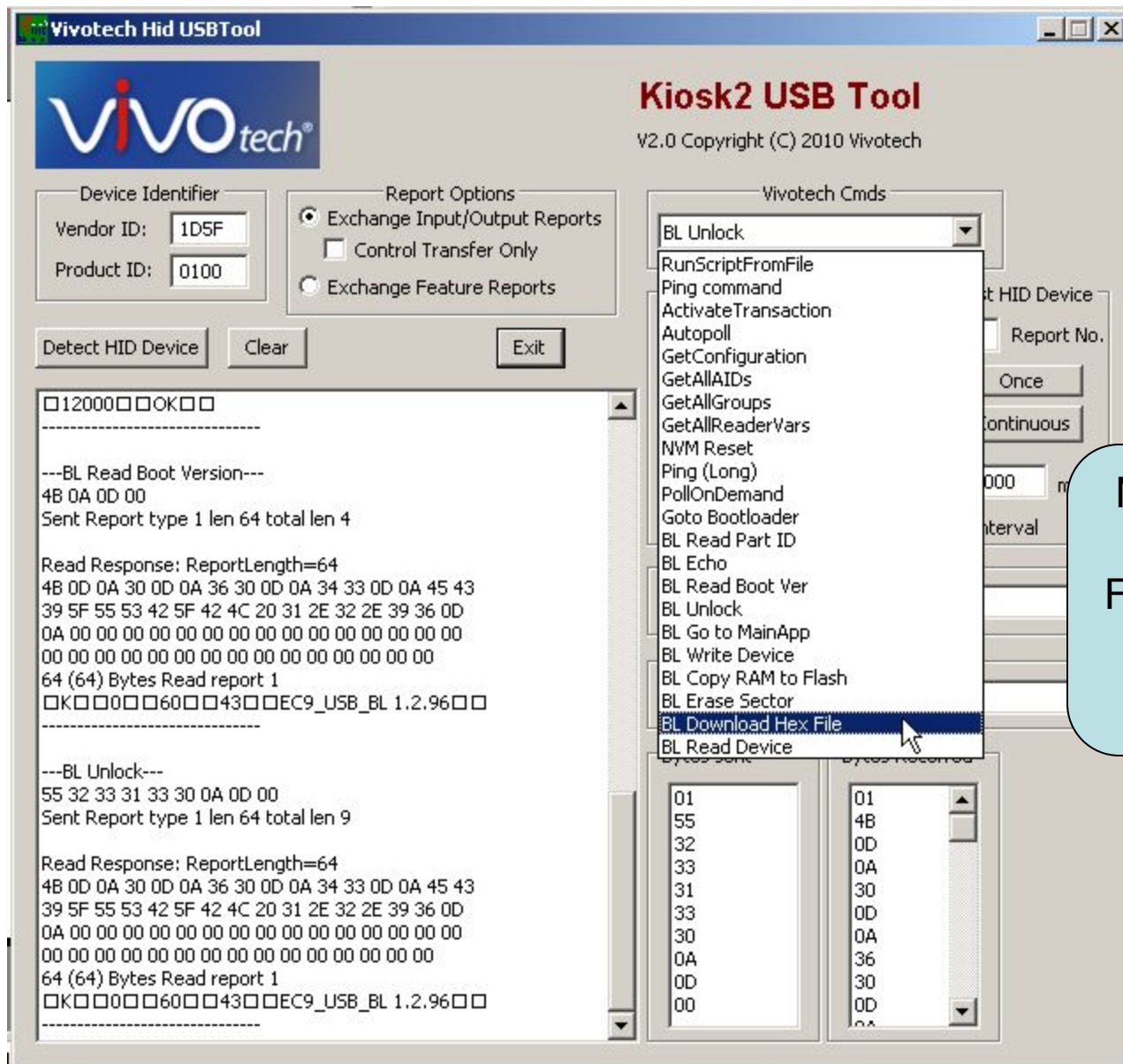
56 69 56 4F 74 65 63 68 32 00 07 02 00 00 AA 5B  
Sent Report type 1 len 64 total len 16

---BL Read Boot Version---  
4B 0A 0D 00  
Sent Report type 1 len 64 total len 4

Read Response: ReportLength=64  
31 32 30 30 30 0D 0A 4F 4B 0D 0A 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
64 (64) Bytes Read report 1  
OK 12000 OK OK

---BL Read Boot Version---  
4B 0A 0D 00  
Sent Report type 1 len 64 total len 4

Read Response: ReportLength=64  
4B 0D 0A 30 0D 0A 36 30 0D 0A 34 33 0D 0A 45 43  
39 5F 55 53 42 5F 42 4C 20 31 2E 32 2E 39 36 0D  
0A 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
64 (64) Bytes Read report 1  
OK OK 60 OK 43 OK EC9\_USB\_BL 1.2.96 OK



**Vivotech Hid USBTool**

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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

Detect HID Device Clear Exit

U23130

---BL Unlock---

55 32 33 31 33 30 0A 0D 00  
Sent Report type 1 len 64 total len 9

Read Response: ReportLength=64  
 55 32 33 31 33 30 0D 0A 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 64 (64) Bytes Read report 1  
 U23130

---BL Unlock---

55 32 33 31 33 30 0A 0D 00  
Sent Report type 1 len 64 total len 9

Read Response: ReportLength=64  
 55 32 33 31 33 30 0D 0A 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 64 (64) Bytes Read report 1  
 U23130

**Vivotech Cmds**  
BL Download Hex File

**Write Command Params**  
 RAM Addr: 40002000  
 Flash Addr: 00010000  
 Data Size: 00000004  
 Data: DEADBEEF  
 Quiet: 0 ☐ Debug

**Download File**  
CANDIDATE.hex

**Upload File**  
memory\_dump.txt

**Bytes sent**

01
55
32
33
31
33
30
0A
0D
00
00

**Bytes Received**

01
55
32
33
31
33
30
0D
0A
00
00

The file to be downloaded should be in the same directory as the HidApp.exe tool.

FIRST select file:  
EC8\_FL\_1\_0\_1\_  
w\_EC9\_BLx.x.x.h

ex  
Type in the name here

The download should begin as shown in the window. This will take several minutes.

**Vivotech Hid USBTool**

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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports


**Vivotech Cmds**  
BL Download Hex File


**Write Command Params**  
RAM Addr: 40002000  
Flash Addr: 00010000  
Data Size: 00000004  
Data: DEADBEEF  
Quiet: 0 ☐ Debug

**Test HID Device**  
1 Report No.  
Once  
Continuous  
1000 ms Interval

**Download File**  
CANDIDATE.hex

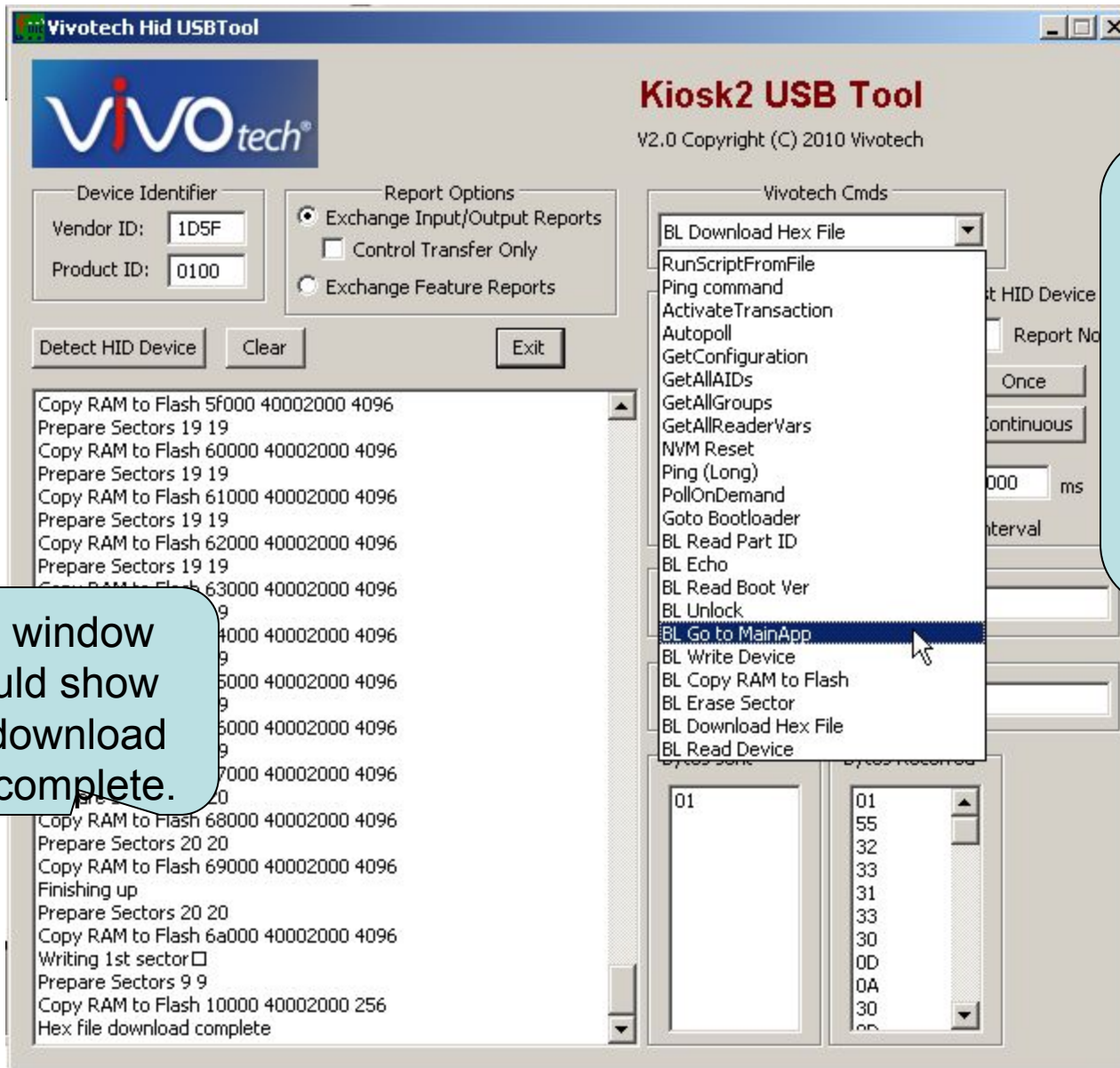
**Upload File**  
memory\_dump.txt

**Bytes sent**  


**Bytes Received**  


Detect HID Device Clear Exit

14:02:08, March 05, 2012  
Device detected VID=0x1D5F PID=0x0100  
Usage Page: 0xFF00  
Usage: 0x1  
Input Report Byte Length: 64  
Output Report Byte Length: 64  
Feature Report Byte Length: 0  
Number of Link Collection Nodes: 1  
Number of Input Button Caps: 0  
Number of Input Value Caps: 4  
Number of Input Data Indices: 4  
Number of Output Button Caps: 0  
Number of Output Value Caps: 4  
Number of Output Data Indices: 4  
Number of Feature Button Caps: 0  
Number of Feature Value Caps: 0  
Number of Feature Data Indices: 0  
Number of Input Buffers: 32  
\*\*\*HID Test Report\*\*\*  
14:02:30, March 05, 2012  
---BL Download Hex File---  
File is good  
Unlocking Device  
55 32 33 31 33 30 0A 0D 00  
Prepare Sectors 9 20  
Erase Sector 9 20  
ADDR\_19\_4=1000



The window should show the download was complete.

Then select "BL\_Go to Main App". Click Once.



**Vivotech Hid USBTool**

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**Kiosk2 USB Tool**  
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**Device Identifier**  
Vendor ID: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

**Vivotech Cmds**  
BL Go to MainApp

**Write Command Params**  
 RAM Addr: 40002000  
 Flash Addr: 00010000  
 Data Size: 00000004  
 Data: DEADBEEF  
 Quiet: ☐ ☒ Debug

**Test HID Device**  
 1 Report No.  
 Once  
 Continuous  
 1000 ms Interval

Detect HID Device Clear Exit

Number of Feature Button Caps: 0  
 Number of Feature Value Caps: 0  
 Number of Feature Data Indices: 0  
 Number of Input Buffers: 32  
 \*\*\*HID Test Report\*\*\*  
 13:30:24, March 05, 2012  
 13:30:24, March 05, 2012  
 DBT\_DEVICEARRIVAL  
 USB HID Device has been attached.  
 Device detected VID=0x1D5F PID=0x0100  
 Usage Page: 0xFF00  
 Usage: 0x1  
 Input Report Byte Length: 64  
 Output Report Byte Length: 64  
 Feature Report Byte Length: 0  
 Number of Link Collection Nodes: 1  
 Number of Input Button Caps: 0  
 Number of Input Value Caps: 4  
 Number of Input Data Indices: 4  
 Number of Output Button Caps: 0  
 Number of Output Value Caps: 4  
 Number of Output Data Indices: 4  
 Number of Feature Button Caps: 0  
 Number of Feature Value Caps: 0  
 Number of Feature Data Indices: 0  
 Number of Input Buffers: 32  
 \*\*\*HID Test Report\*\*\*  
 13:30:24, March 05, 2012

**Download File**  
CANDIDATE.hex

**Upload File**  
memory\_dump.txt

**Bytes sent**

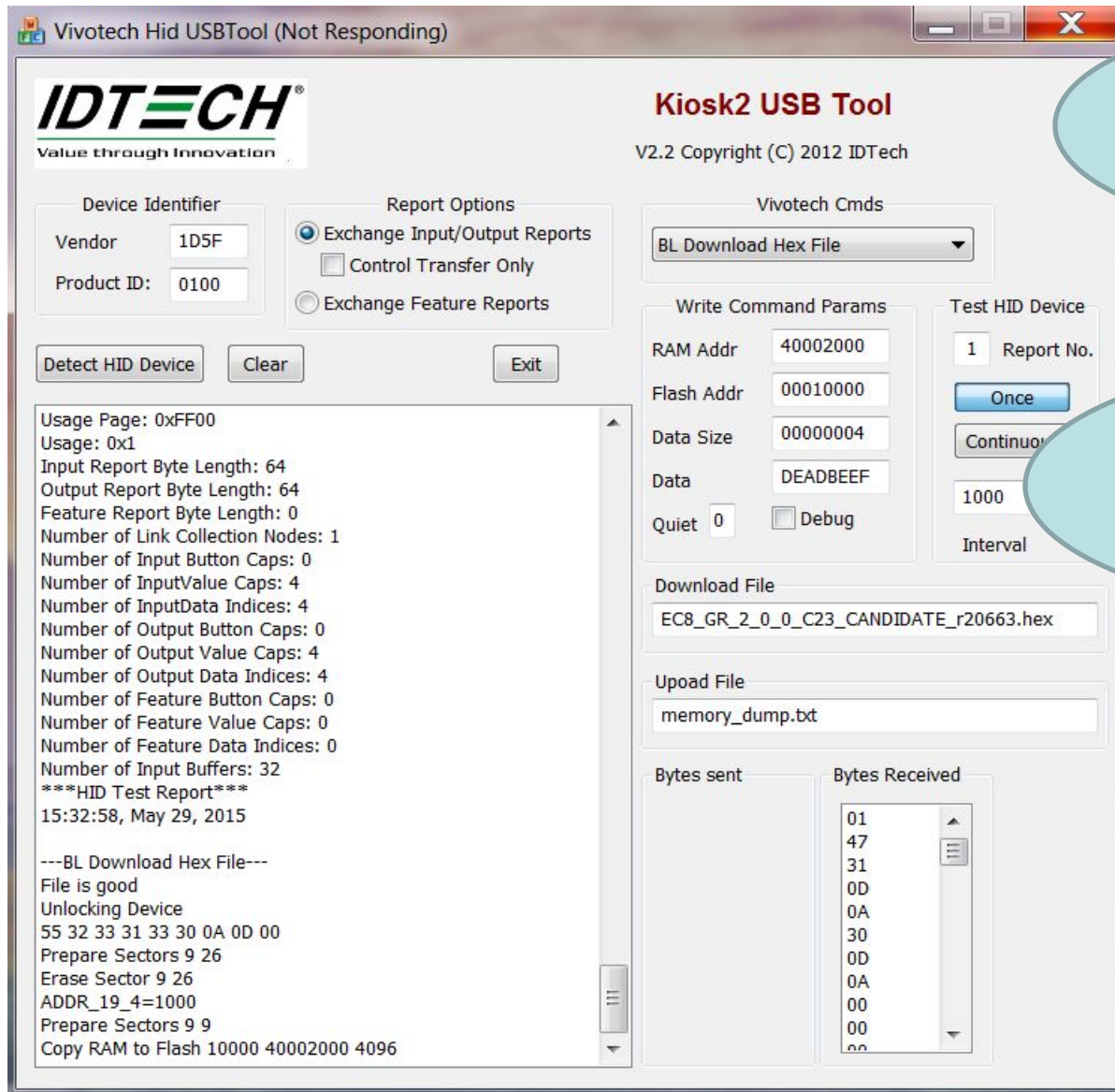
01
55
32
33
31
33
30
0D
0A
47

**Bytes Received**

01
47
31
0D
0A
30
0D
0A
00
00
00

You should hear a **long beep**.and **wait** then the reader device should enumerate, as shown here **or** select "Detect HID Device"





select BL Download  
Hex File Then Select  
Once

**SECOND:** en  
EC8\_GR2.0.0\_Cxx\_  
-rxxxx.hex h

Vivotech Hid USBTool

**IDTECH®**  
Value through Innovation

**Kiosk2 USB Tool**  
V2.2 Copyright (C) 2012 IDTech

**Device Identifier**  
Vendor: 1D5F  
Product ID: 0100

**Report Options**  
☒ Exchange Input/Output Reports  
☐ Control Transfer Only  
☐ Exchange Feature Reports

Detect HID Device Clear Exit

U23130  
Transmitting:  
55 32 33 31 33 30 0D 0A  
Sent Report type 1 len 64 total len 8

Read Response: ReportLength=64  
55 32 33 31 33 30 0D 0A 30 0D 0A 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
64 (64) Bytes Read report 1  
U231300

-----  
OK: Unlock Device  
Go MainApp  
G1  
Transmitting:  
47 31 0D 0A  
Sent Report type 1 len 64 total len 4

Read Response: ReportLength=64  
47 31 0D 0A 32 30 0D 0A 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
64 (64) Bytes Read report 1  
G120

**Vivotech Cmds**  
BL Go to MainApp

**Write Command Params**  
RAM Addr: 40002000  
Flash Addr: 00010000  
Data Size: 00000004  
Data: DEADBEEF  
Quiet: 0 ☐ Debug

**Test H**  
1 Rep  
Once  
Continuous  
1000 ms  
Interval

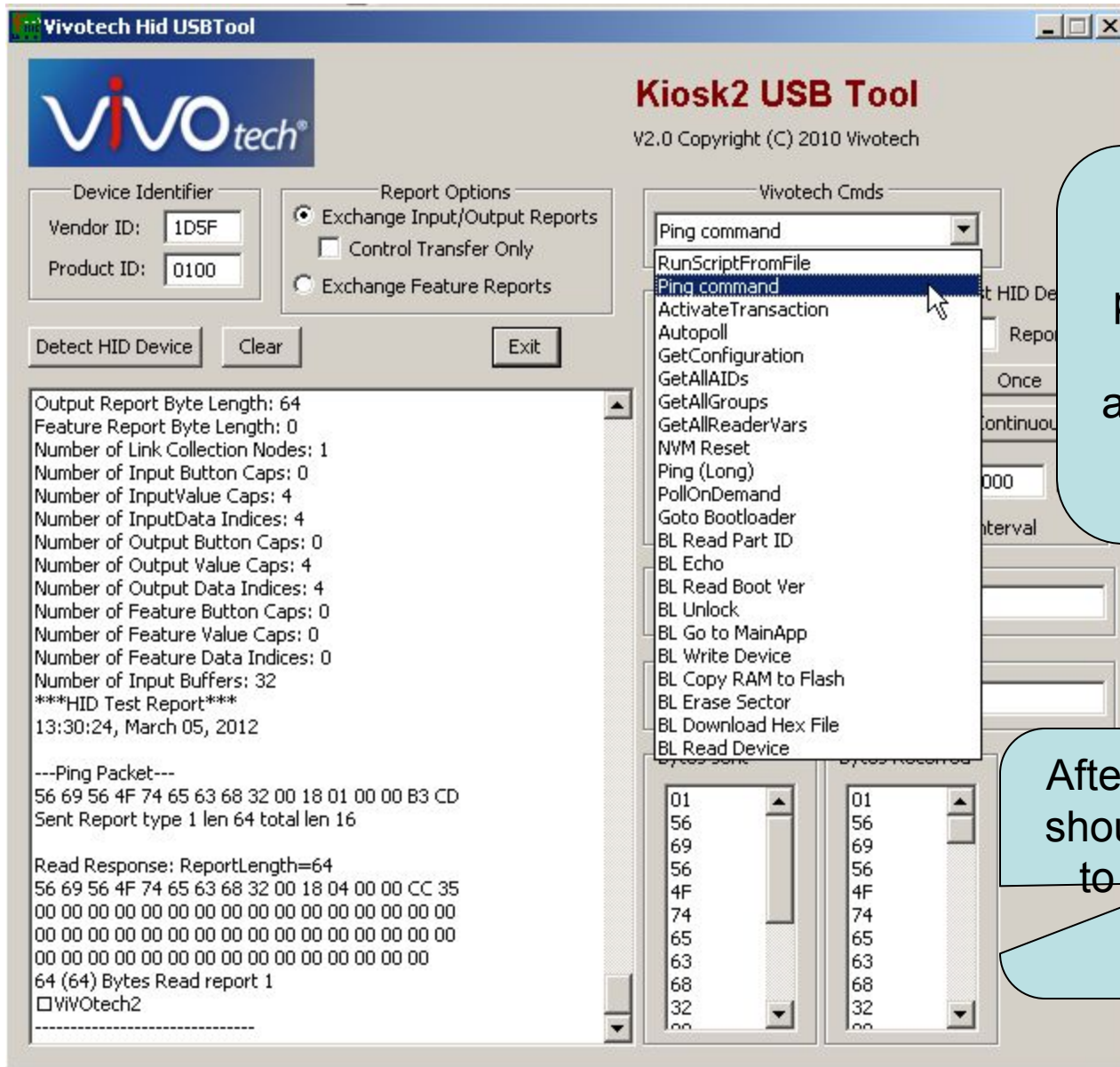
**Download File**  
EC8\_GR\_2\_0\_0\_C23\_CANDIDATE\_r20663.hex

**Upoad File**  
memory\_dump.txt

**Bytes sent**  
01  
55  
32  
33  
31  
33  
30  
0D  
0A  
47  
31

**Bytes Received**  
01  
47  
31  
0D  
0A  
32  
30  
0D  
0A  
00  
00

After the file download complete. Select BL GoTo MainApp Then Select Once



To make sure the reader is running properly, select the "Ping Command" and click the "Once" button.

After you click once, you should see the response to the Ping as shown here.