Bluegiga Forums / Community Forums / Bluetooth Smart

UART communication problem

Tomer Lavi
asked this on May 19, 11:59

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Hi
I am using DKBLE+BLE113 to develop a software for an embedded system. The software works ok when communicating on the DKBLE's UART, but when trying to connect the BLE113 eval board to a PC I get bad data on the UART.
In order to trace the issue, I replaced the BLE113 back on the DKBLE and tried the uart-echo demo to examine the uart data.
When I send a sequence of data I get it back exactly on the serial com. For example 123456789|123... which reads as 31 32 33 34 ... (Hex)
But when I listen to the pins TX/RX pins on the DKBLE connection to the BLE113 I get totally different readings:
RX - 67 B3 66 59 D9 B2 B2 AC EC 10 00 67 B3 66 ...
TX - 67 00 33 66 97 2A 26 22 1E 1A 0E E9 B3 26 E6 99 99 32 64 8F 1A 0E E9 03 00 33 66 97 2A 26 22...
I tried with both enabled/disabled flow control and 9600 and 115200 baud rates.
What happens to the data that is sent on the serial port? What do I need to do the get the BLE113 get the correct data when connected directly to the UART, without the DKBLE?
Thanks for any ideas

0 people would like this to be answered. Be the first!

Comments

Jeff Rowberg
Bluegiga Technologies

Hello Tomer,

This depends entirely on what firmware is on the module. Have you reflash it? If so, you should be able to tell exactly what the communication parameters are based on what you have defined in the "hardware.xml" file for your project. If not, then the module is still running factory default firmware, which is described in detail here (note 57600 baud):

- https://bluegiga.zendesk.com/entries/80487657-BLExxx-Factory-default-firmware

May 19, 2015, 16:15

Tomer Lavi

Hi Jeff,

Thank you for your reply.

Please read my message carefully. I am using the uart-echo demo project. Downloaded from the link below.

As I wrote above - the demo works 100%, but when I listen to the TX/RX pins I see totally different values. See above.

The problem is that when I am using my project I seem to get garbage/random data from the BLE113. This is why I am trying the echo demo first, to debug serial communication issues.

https://bluegiga.zendesk.com/entries/25159403--BGScript-uart-echo-S...

T.

May 19, 2015, 16:24

Jeff Rowberg
Bluegiga Technologies

Apologies for missing the noted firmware. Which pins are you connecting to, and how are you connecting them to a PC? The uart_echo project uses UART1/Alt1 at 115200, so that is P0_2/3/4/5 as CTS/RTS/TXD/RXD respectively. The UART generates 3.3v TTL signals. I have successfully used a direct connection through the pins on the evaluation board (not the Prolific UART-to-USB converter) and a separate FTDI adapter. You also need to ensure that the USB-to-UART peripheral switch on the devkit is off.

When you mention the "BLE113 eval board," are you referring to the carrier board that plugs into the main DKBLE?

May 19, 2015, 16:32

Thanks Jeff

I would like to try connecting through the pins of the carrier board, so please comment if my plan is correct:

Connect the carrier board to DKBLE.

Support Tomer Lavi

Connect the DKBLE to a USB port through the USB connection.

Switch the USB to UART off.

Connect the P0_2/3/4/5 pins to the PC using a USB-to-Serial adapter.

I expect the uard-echo demo to work and the signals on the TX/RX pins should be exactly the ones I send from the PC.

Is this ok?

May 19, 2015, 18:36

Jeff Rowberg
Bluegiga Technologies

Yes, that is okay. Note that the pins are identified functionally from the module's perspective, so you will need to connect the module's TX pin to the PC side RX pin, the module's RX pin to the PC's TX pin, and so on.

May 19, 2015, 18:41

Tomer Lavi

Thanks

One more question - The FTDI adapter - is it a 5v or 3.3v?

May 19, 2015, 18:45

Jeff Rowberg
Bluegiga Technologies

My FTDI adapter is 3.3v. The BLE modules all use 3.3v logic and are **not** 5v-tolerant, so you should be sure to keep the voltages at safe levels.

May 19, 2015, 18:47

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