



**Bluetooth Intelligent Serial Module
FAQ**

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BISM Bluetooth Intelligent Serial Module FAQ

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Frequently Asked Questions

1. I know my mobile phone's Bluetooth address and have successfully paired as detailed in the blu²ⁱ Module - User Guide. When I try to make a connection using ATD it always fails?

Mobile phones are very security conscious, so always insist on authenticated connections. So to make a connection, use the ATDU<bd_addr> variant of the command.

2. I have paired with a mobile phone and configured the device in cable replacement mode as detailed in the manual, but I keep getting "NO CARRIER" responses.

Set S Register 502 to 1 so that the default for outgoing connection will ask for authenticated connections. For security reasons most phones will only allow authenticated Bluetooth connections.

3. When my module is configured for cable replacement, on connection I want to suppress the "CONNECT" response sent to the host, so that the first character my host sees is the first character from my actual data traffic.

Set S Register 504 to 1

4. I cannot get data transfer rates greater than 92Kbps.

You probably have the UART baud rate set to 115200. ($115200 * 8 / 10 = 92160$) where the $*8/10$ factor arises from the start and stop bit overhead.

Set the UART baud rate to say 230400 or 460800 via S Register 520, assuming your host can cope with the higher baud rates. Setting the baud rate to 921600 will guarantee that the UART is never responsible for the bottleneck.

5. I have done as suggested in 4 above and I still don't get the 200Kbps claimed in the data sheet.

Set S Register 507 to 2 and ensure that the DSR input to the module is asserted. If DSR is not asserted in this mode, then all connections attempts will be aborted.

6. I modified S Registers to put the device in cable replacement mode and nothing happens after a power cycle.

Ensure that the modified S Registers are stored in non-volatile storage by sending the command AT&W.

7. Can I suppress character echoes when in command mode?

Yes. Set S Register 506 to 0 and send AT&W if you want it to be persistent.

8. When I establish a connection, I want an SCO channel (Audio) to be started automatically.

Set S Register 532 to 1.

9. After a successful connection, I want to remain in command mode so that I can send more AT commands and then when done, go to online mode by issuing the ATO command.

Set S Register 531 to 1.

10. When in connected and online mode, I want to drop into command mode using the more usual +++ escape sequence instead of ^^.

Set S Register 2 to 43.

11. When I perform an inquiry using AT+BTI I only get 8 responses, yet I know I have more than 8 devices in the neighbourhood.

Set S Register 518 to a larger value than the default 8 before issuing the AT+BTI command.

12. When doing an inquiry I want to get both the friendly names and the devices class codes.

Instead of the AT+BTI command, issue the variant AT+BTIN.

13. When my connected device goes out of range, it takes too long for a "NO CARRIER" response from the device.

Set S Register 535 as desired. It modifies the baseband link timeout appropriately.

14. The cable between my host and the blu²ⁱ module has just RX, TX and GND. I get no responses from the blu²ⁱ module.

Pull the CTS line of the blu²ⁱ module to the asserted state (0V).

15. My Nokia 6310 will not respond to AT commands.

Check that S Register 551 does not specify 0 in the lowest 2 nibbles.

16. I have changed S Register 512 so that on power up it comes in mode 4. But nothing seems to happen, in fact after power cycle, the value is as if I had never changed it.

After modifying the S Register, enter the command AT&W so that the new value is stored in non-volatile storage.

17. I have set S Register 507 to 1 and specified a peer address using AT+BTR, but I still don't get an auto connection.

Ensure that DSR of the device is asserted (i.e. at 0v when operating at TTL levels or > +3V when operating at RS232 levels).

18. I have set an odd baud rate using S Register 521 and my PC cannot generate that baud rate. How do I regain communication with the module?

If the module has firmware 1.1.0 and newer, then download "TDK Terminal" from our web site <http://www.blu2i.com/> and launch the app at any baud rate. Then click on the "Data Transfer Test" button and in the new screen click on the button labelled "Factory Default Mode". The button will grey-out for a few seconds and then return to enabled mode. At that point close the application and then relaunch your favourite terminal emulator at 9600,N,8,1 and you should have communication. If so, the first thing to do is to enter AT520=nnnn where nnnn is the new baud rate.

19. Can I use the blu²ⁱ module as a headset?

Yes. See S Register 101 and 102. In addition please study the Headset Profile chapter in the Bluetooth Profiles specification.

20. I am trying to connect to the serial port profile of a Nokia 7650 and it keeps dropping the connection after a second.

Please connect to the DUN profile using the command

“ATD<bd_addr>,1103”.

21. I want to get the status of the GPIO lines from a remote device.

Send the escape sequence “!!!” while in a connection, and the local AT parser gets ‘switched’ to the RF input. Then use the normal ATS5xx commands to read/write to the GPIO lines.

22. I need to reproduce the DTR from my system as a DTR at the remote end.

This is possible. See the detailed descriptions for S Registers 551, 552 and 553 contained in the blu²ⁱ Module – AT Command Set.

23. I want to remotely monitor temperature.

Condition your temperature measurement circuit so that it provides a voltage in the range 0 to 1.8v for the temperature range of interest. Connect that signal to ‘Analogue 0’. Configure the module so that it auto answers incoming connections. Then initiate a connection from the remote device. When the connection is established, send the escape sequence “!!!” from that remote device. On receipt of an OK response, you can then send “ATS701?” and the response will be a number which represents the voltage at Analogue 0 in millivolts, if you wish the response to be returned in hexadecimal format (so that it is easier and quicker to convert from string to binary), then send “ATS711?”.

24. I’m sending the escape sequence “!!!” from a remote peer and I do not get the OK response to tell me that I am connected to the AT parser of the remote device.

Ensure that S Register 536 is set to 1 which enables this feature. For security reasons, this feature is disabled by default.

25. Using the module on your Development Kit motherboard which has a codec and a headphone socket, is it possible to configure the module as a headset and use it with a Bluetooth enabled phone?

Yes. This usage is described in the blu²ⁱ Module - Application Scenarios.

26. I think I have requested a baud rate setting which my host (PC) is not capable of. How can I re-establish communication with it?

Refer to the “Factory Default Mode” section of the blu²ⁱ Module - User Guide.

27. I am using two blu²ⁱ modules to eliminate a cable and I am using RTS not for flow control but low bandwidth signalling and need to reproduce it at the remote end. Your blu²ⁱ module only allows RTS to be used for flow controller.

See the detailed descriptions for S Registers 551, 552 and 553 contained in the blu²ⁱ Module – AT Command Set.

I would ‘sneak’ the RTS information across through the back door by connecting the RTS from your host to the DCD line and then at the remote end connecting the appropriate pin on the peripheral to the DCD pin of the blu²ⁱ Module. Then configure S Register 551 (bits 8 to 11) to be 2 for the blu²ⁱ Module connected to the host and configure S Register 552 (bits 4 to 7) to be 5 for the blu²ⁱ Module connected to the peripheral.

In this case the state of the DCD input line at the host blu²ⁱ Module will be reproduced at the DCD output line on the other module.

Please be aware of Bluetooth latency issues and check that the latency in reproducing the RTS signal is acceptable.

28. Can I disable CTS/RTS handshaking and use XON/XOFF handshaking?

No. If your host does not have CTS/RTS handshaking capability, we suggest you set the UART baud rate to something less than 38400 and link the CTS pin of the module to a permanently asserted state. The higher bit rate capability on the RF side should ensure that the receive buffer of the blu²ⁱ Module will remain empty.

29. My device is connected as a slave and is consuming too much power. I am seeing a current consumption greater than 30mA.

Enable Sniff mode using S Registers 561 to 564 inclusive. AT&F1 also affects these registers. You will see the current consumption drop down to below 5mA.

30. Connection attempts using ATD<bd_addr> always gives “NO CARRIER” even when I know that the peer is ready and waiting.

Check S Register 500. If default outgoing authentication is enabled, then a connection will only be successful if a pairing exists between the two peers.

31. S Register 512 defines the start up mode. I want to control the mode based on an external input.

Set S Reg 565 to 1. This will configure the UART_ RI line as an input. If that input is asserted (0v at TTL levels, +9v at RS232 levels), then the start up mode is defined by S Reg 566 instead of S Reg 512. If RI is deasserted (3.3v

at TTL levels, -9V at RS232 levels) then the start up mode is defined by S Reg 567.

32. I want the device to be discoverable on power up for a short period of time and then it becomes undiscoverable.

Set S Reg 554 to the time period you want. Then set S Reg 512 to either 4 or 7 and set S Reg 555 to either 3 or 6.

33. The module has gpio. I have two of these modules communicating with each other and I want the inputs at one end to be automatically mirrored at the other end.

Set S Reg 531 to 4 at both ends, plus other S registers set appropriately (contact Ezurio for more details).

34. I want to connect to more than one slave.

Change firmware mode to multipoint mode using S Reg 126 and 127. You will then be operating in multipoint mode using a packet based protocol over the uart. In this mode you can make up to 4 simultaneous connections.

35. In multipoint mode, I want to make more than one audio connection.

Use the OKI 7705 codec and you will be able to make up to 3 audio connections.