

Manual AMB8460 and AMB2560

Version 2.1

AMBER wireless GmbH
Albin-Köbis-Straße 18
51147 Köln
Tel. 02203-6991950
Fax 02203-459883
eMail info@amber-wireless.de
Internet <http://www.amber-wireless.de>

Table of Contents

1	Summary.....	3
1.1	Startup „Step-by-step“	3
2	Using the USB-Stick with a terminal program	5
2.1	Example Terminal.exe	5
3	Using the USB-Stick with PC-Software „ACC V2.6“	6
4	Disconnect the DTR-Signal	6
5	Control of the DTR-Signal with LabVIEW	7
6	References.....	7
7	Important Information.....	8
7.1	Exclusion of Liability.....	8
7.2	Trademarks	8
7.3	Usage Restriction	8

1 Summary

This manual should help the user to get started fast with AMB8460 or AMB2560 and so to minimize time-to-market.

1.1 Startup „Step-by-step“

1. Driver Installation

At first the driver has to be installed. You can download it from [5]. After extracting the zip file to your PC you can install the driver by executing “CP210x_VCP_Win2K_XP_Vista.exe” / “CP210x_VCP_Win7.exe”.

Follow the instructions of installation manager until it is finished successfully.

2. Plug in the USB-stick

Now you can connect the USB stick to a free USB slot on your pc and follow the instruction of the windows installation manager:

Attention: If windows can't find the correct driver, please refer to [6].

3. Serial Port

The driver generates a virtual, serial port on your system.

The default port settings are:

- 9600 Baud, 8 data bits, no parity and 1 stop bit for the AMB8460
- 38400 Baud, 8 data bits, no parity and 1 stop bit for the AMB2560

4. Using the stick

Now the USB-Stick can be accessed via serial port like described in manual [1].

5. Demo program[2]

With the demo program and another USB stick with the same settings (in default channel 106 / 868,3MHz, Band g1, 38,4 kbps FSK, 10 dBm max. for AMB8460 and channel 79 / 2440,0MHz for AMB2560) you are able to do range measuring. The program uses the serial settings 9600Baud 8n1 for AMB8460 and 38400Baud 8n1 for AMB2560.

For the range measurement you have to start one demo program for each USB stick (e.g. first stick on PC und second Stick on a Laptop) and open the corresponding COM-Port with it.

It is even possible to run two sticks on one PC, but take care to place the sticks in minimum 20cm away from each other. Otherwise a clear communication is not possible.

Click on the button "Toggle Mode" to set both modules in "Command Mode". To start the receive signal strength measurement click on "Start RSSI test" at one of the programs.

If the progress bar under the button „Start RSSI test“ hesitates you can restart measurement through another click on „Start RSSI test“.

Every stick has an intern LED to signal incoming data.

Attention:

The complete control description of the USB-stick is available under [1].

If DTR signal is set, the module is hold in reset.

Normal operation of the stick is only possible if DTR signal is low.

By some terminal programs (e.g. HyperTerminal) the DTR signal is set automatically after opening the COM port that causes the stick to stay in reset.

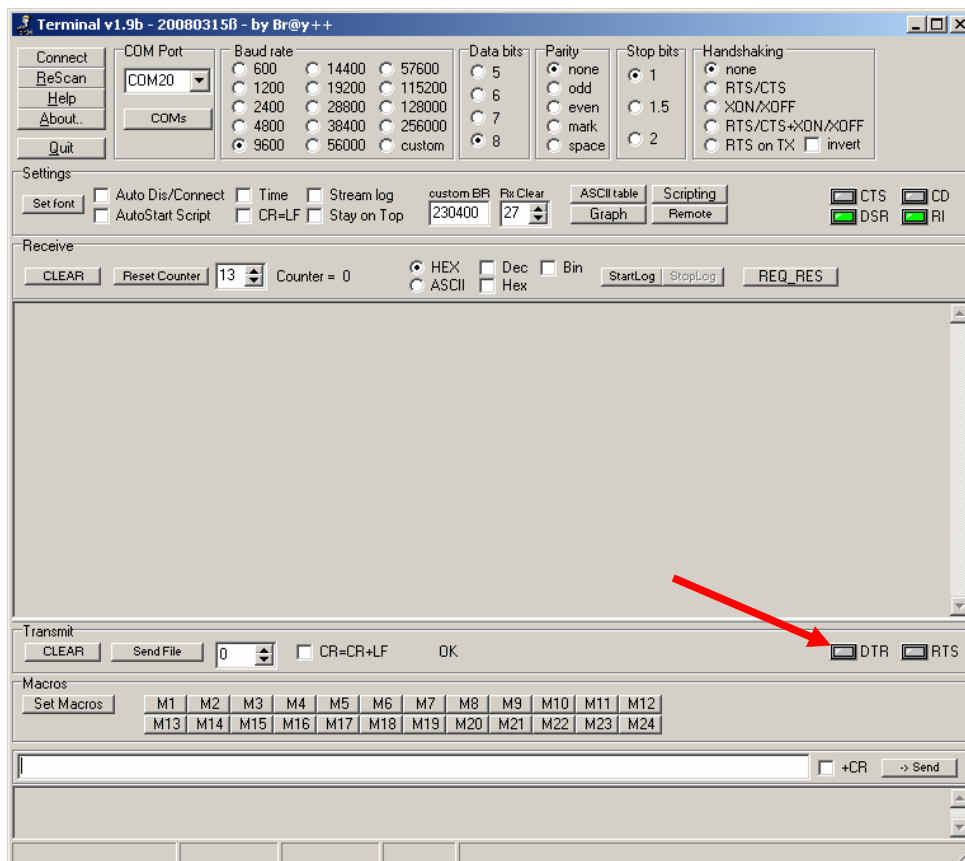
2 Using the USB-Stick with a terminal program

You can download a free terminal program from [3]. If you want to use your own program be sure it can handle the DTR signal manually.

This is important because the USB-Stick is hold in reset state if DTR is high!

2.1 Example Terminal.exe

The program can be started directly after downloading and extracting it on your PC without any further installation. In the upper left area you can select the COM port (between COM1 and COM20). If the stick is assigned to a higher port number by Windows, you can follow the instructions under [4]. After that the other settings can be selected: AMB8460: 9600baud, 8, n, 1, no handshaking; AMB2560: 38400baud, 8, n, 1, no handshaking. Click on "Connect" to open the COM port and control the DTR LED (see red arrow) if it is switched off (LED is gray = DTR-signal at low level) so that the AMB8460 is running. By clicking on the LED its state toggles between high and low. Received data is now displayed in the "Receive" field above.



3 Using the USB-Stick with PC-Software „ACC V2.6“

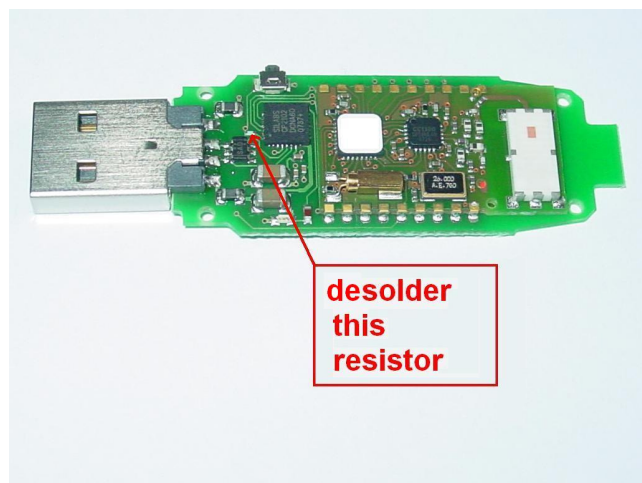
The software ACC since version 2.6 includes a „Reset“-button. So you're able to reset the stick without pressing the reset button on the stick. The connection proceeds like shown here:

1. Connect the USB-Stick to a free slot on your PC.
2. Estimate the associated COM-Port in the device manager.
3. Start ACC V2.6 and enter the correct COM-Port.
4. Click on „Open“.
5. Click on „Connect“.
6. Click on „Reset“.
7. Click on „Read“.
8. Now you can edit the module settings by clicking on „Edit“.

4 Disconnect the DTR-Signal

If the reset functionality over the virtual COM port is not wanted or it causes trouble with some applications the connection can easily be ripped up.

First the housing of the USB-stick has to be opened. Now the DTR signal can be ripped up by desolder a resistor (see picture beneath: light blue resistor, package 0402). The reset button on the stick is still working after that. Then the housing can be reassembled.



For further correct connection to ACC you have to follow these instructions:

1. Connect the USB-Stick to a free slot on your PC.
2. Estimate the associated COM-Port in the device manager.
3. Execute ACC and select the correct COM port.
4. Click on „Open“.
5. Push and hold the reset button on the USB stick.
6. Click on „Connect“.
7. Release the reset button of the USB stick.
8. Now the setting can be read out.

5 Control of the DTR-Signal with LabVIEW

If the USB stick per example is used in an automatic test environment with LabVIEW, the state of the DTR signal must also be controlled. The access to the serial port settings can be realised with the following steps (LabVIEW 8.x):

1. Select node properties: call function palette → Instrument IO → VISA → VISA Advanced → property node
2. Insert property node in VI and connect it with VISA-Resource-Signal from the open serial port.
3. Click on the property field of the property node → Serial Settings → Modem Line Settings
4. Select required Property: Break State, Line CTS State, Line DCD State, Line DSR State, Line DTR State, Line RI State, or Line RTS State
5. Assign state over node input.

6 References

- [1] Download on <http://amber-wireless.de> → Support → Download → select “AMB8420” or “AMB2520” → „AMB8420 and AMB2520 manual“
- [2] Download on <http://amber-wireless.de> → Support → Download → select “AMB8460” or “AMB2560” → „AMB8460 and AMB2560 driver and tools“ → RSSI-Test AMB2560_AMB8460.exe
- [3] <http://braypp.googlepages.com/terminal>
- [4] Download on <http://amber-wireless.de> → Support → Download → select “AMB8460” or “AMB2560” → „AN02 COM Port löschen und freigeben“
- [5] Download on <http://amber-wireless.de> → Support → Download → select “AMB8460” or “AMB2560” → „Silabs USB-Driver Win2K, XP, Vista“ / “Silabs USB-Driver Win7” → CP210x_VCP_Win2K_XP_Vista / CP210x_VCP_Win7
- [6] Download on <http://amber-wireless.de> → Support → Download → select “AMB8460” or “AMB2560” → „AN04 “

7 Important Information

7.1 Exclusion of Liability

AMBER wireless GmbH presumes that the information in this document is correct at the time of publication. However, AMBER wireless GmbH reserves the right to modify technical specifications or functions of its products or discontinue the production of these products or the support of one of these products without any written announcement or notification to customers. The customer must make sure that the information used is valid. AMBER wireless GmbH does not assume any liability for the use of its products. Amber wireless GmbH does not grant licenses for its patent rights or for any other of its intellectual property rights or third-party rights. Customers bear responsibility for compliance of systems or units in which AMBER wireless products are integrated with applicable legal regulations.

7.2 Trademarks

- AMBER wireless® is a registered trademark of AMBER wireless GmbH.

All other trademarks, registered trademarks, and product names are the exclusive property of the respective owners.

7.3 Usage Restriction

AMBER wireless products are not approved for use in life-supporting or life-sustaining systems or units or other systems whose malfunction could result in serious bodily injury to the user. Moreover, AMBER wireless products are not approved for use as key components of any life-supporting or life-sustaining system or unit whose malfunction could result in the failure of the life-supporting system or unit or could affect its safety or effectiveness. AMBER wireless customers who use these products in such applications or sell them for such usage act at their own risk and must relieve AMBER wireless GmbH from all damages that may result from the sale for unsuitable purposes or unsuitable usage.

By using AMBER wireless products, the user agrees to these terms and conditions.

© 2009, AMBER wireless GmbH. All rights reserved.

AMBER wireless GmbH

Albin-Köbis-Strasse 18
D-51147 Cologne
Phone: +49 2203 6991950
Fax: +49 2203 459883
eMail info@amber-wireless.de
Internet <http://www.amber-wireless.de>