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AMBER WIRELESS AMB-DB2 Demonstration Board User Manual

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Functional Description

The demonstration board AMB-DB2 allows for the establishment of a wireless connection between wireless devices within a very short time. Moreover, the AMB-DB2 board provides easy connection to a computer or to an external processor. The EV kit is suitable for the commissioning of AMB2720, AMB2730, AMBZ420, AMBZ430 and AMB2620. The radio module can be addressed directly from the computer, using the Windows program "AMBER Commander".

The development board can be connected either directly to the USB interface of a PC or to any other microcontroller system. For this purpose, there are several pin headers to which all signals of the module are connected besides of to the antenna connection.

Scope of Delivery

The AMB8425-M-EV kit is delivered in a product case and comprises:

- 2 x development board AMB-DB2 with mounted wireless module
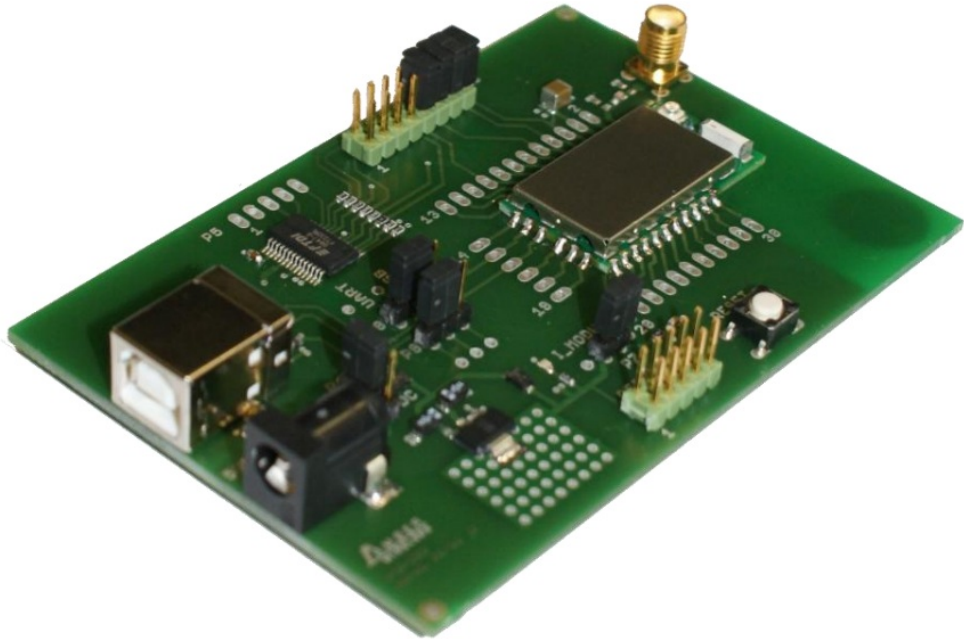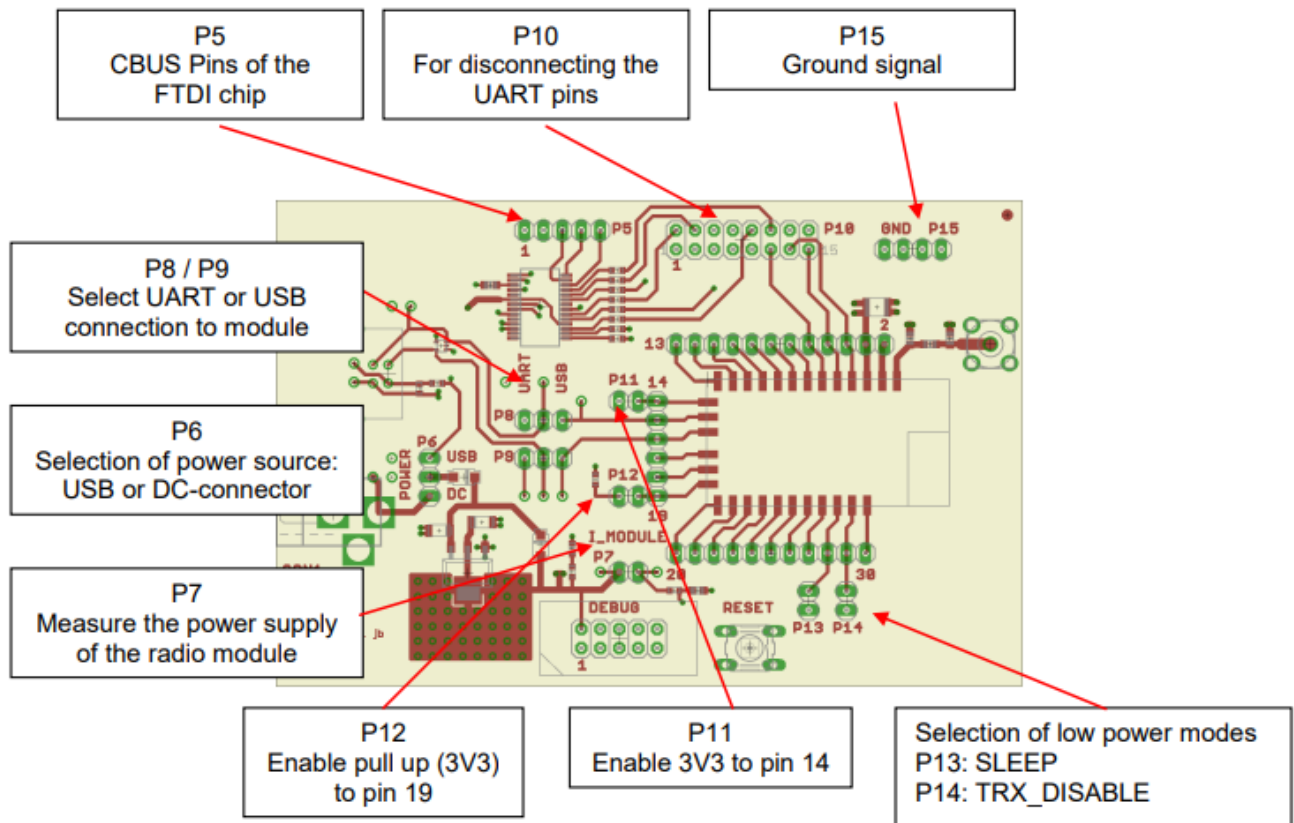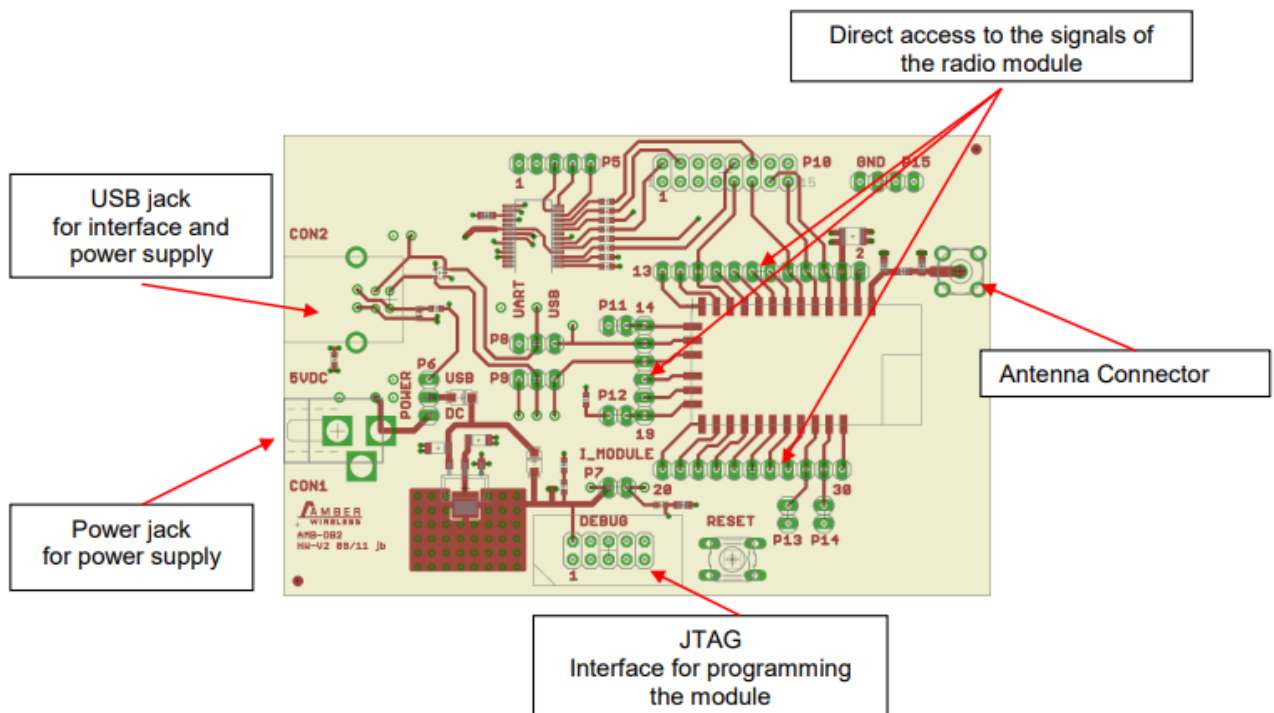- 2 x USB data cable 1.8m

The Demonstration Board

Figure 1: Demonstration board AMB-DB2

Overview

3.1.1 Jumper Location

P5 CBUS Pins of the FTDI chip	**P10** For disconnecting the UART pins	**P15** Ground signal

P8 / P9
Select UART or USB
connection to module

P6
Selection of power source:
USB or DC-connector

P7
Measure the power supply
of the radio module

P12
Enable pull up (3V3)
to pin 19

P11
Enable 3V3 to pin 14

Selection of low power modes
P13: SLEEP
P14: TRX_DISABLE

3.1.2 Connector Location

**Direct access to the signals of
the radio module**

USB jack
for interface and
power supply

Antenna Connector

Power jack
for power supply

JTAG
Interface for programming
the module
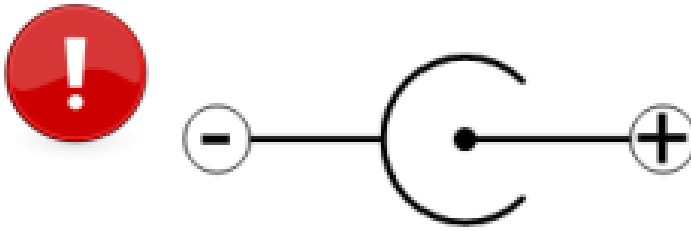
Power Supply

Power Adapter / Power Jack

The development board can be operated by connecting a 5 V power source to the power jack.

Caution: Pay attention to the polarity.

If the power supply is connected and the bridge on P6 is set to "DC", the power LED will be active. It is also possible to supply the board via USB-Interface. To do this, switch P6 to "USB". Then the 5V of the USB-Interface is used to supply the board. Power can also be supplied to the module via P7 pin2 (2.0 V – 3.6 V). However, in this case the USB converter will not be powered.

JP3 / Current Measurement

By default, P7 is closed for operation. If a current meter is connected instead of the jumper, the power consumption of the radio module can be measured here. If the meter is not attached and the bridge is not set, the module will not receive any supply voltage. However, the power LED is active, as it is connected upstream of the current measurement bridge in order not to distort the module's power consumption.

Interfaces

UART / USB
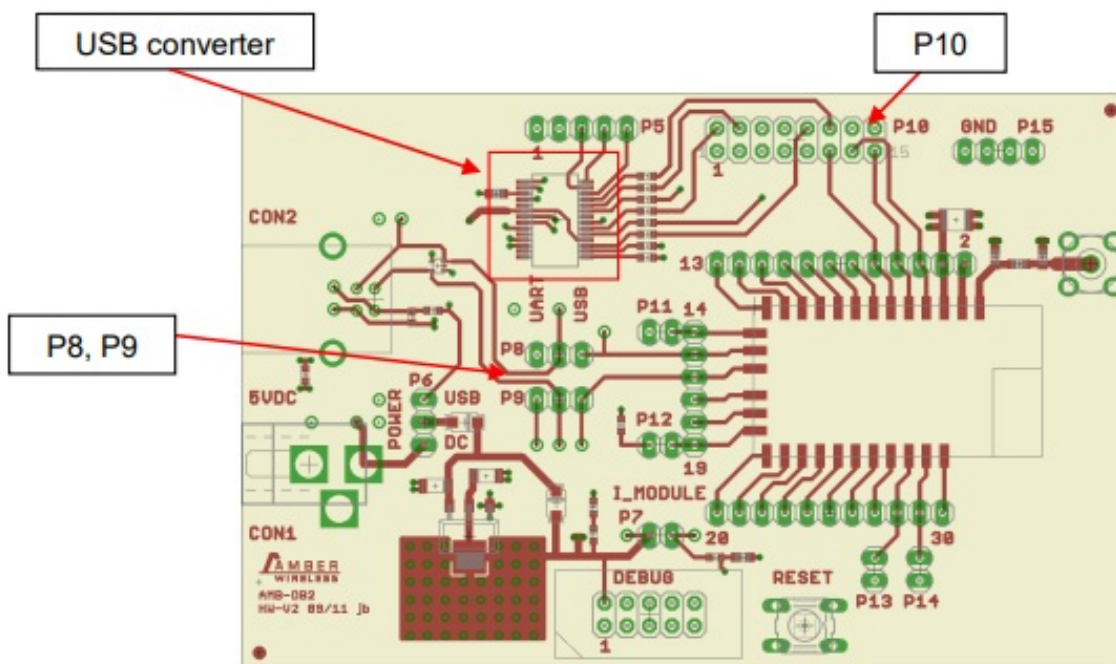
The UART of the module can be connected to the USB converter by setting the jumper on P8 and P9 to UART and the jumper on P10 (Pin 13-14 and Pin 15-16). In this case, the module can be connected directly to a PC via USB cable. If the FTDI-driver is used, the PC will show you a virtual COM-Port to communicate with the module.
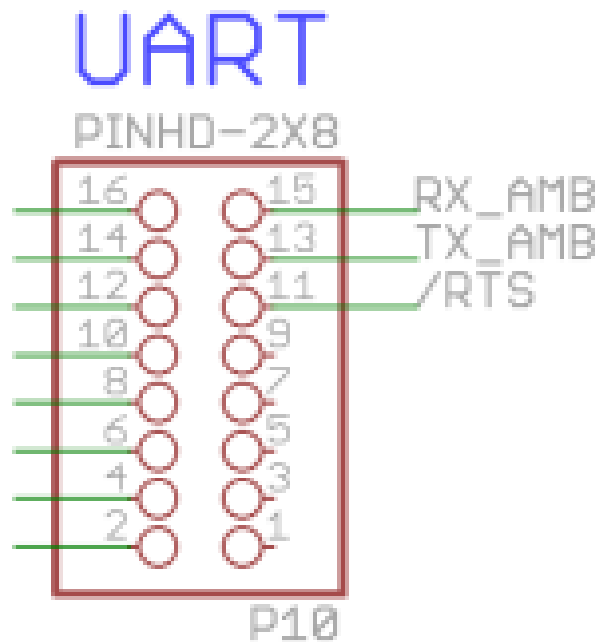
UART / TTL

Figure 2: Pin out P10

If a microcontroller is to be connected to the module, remove the jumper on P10. The UART can be accessed directly on the pin bar to which all other pins of the module are connected.

Watch the level compatibility. When powered over the power jack or USB (section 3.2.1), the levels of the module are 3.3 V. If the power supply is provided by P7 pin 2 (section 3.2.1), the levels of the module can be adjusted in the range from 2.0 to 3.6 V.

Reset
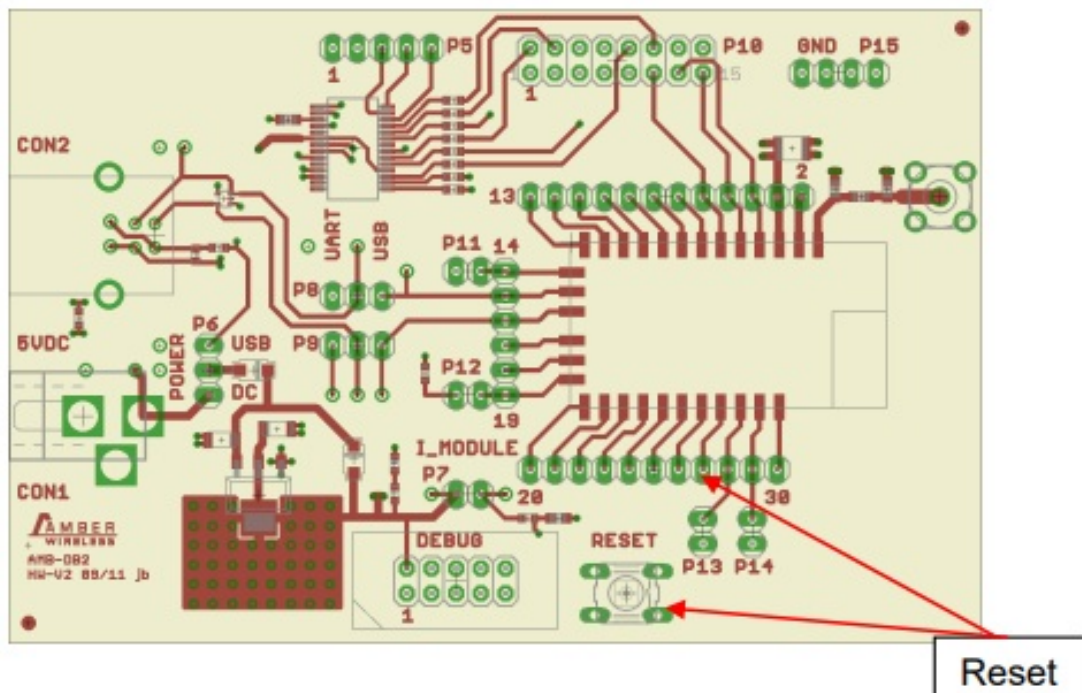
On the development board, there is a "RESET" button by means of which the module can be reset. Moreover, the reset is available on pin 27.

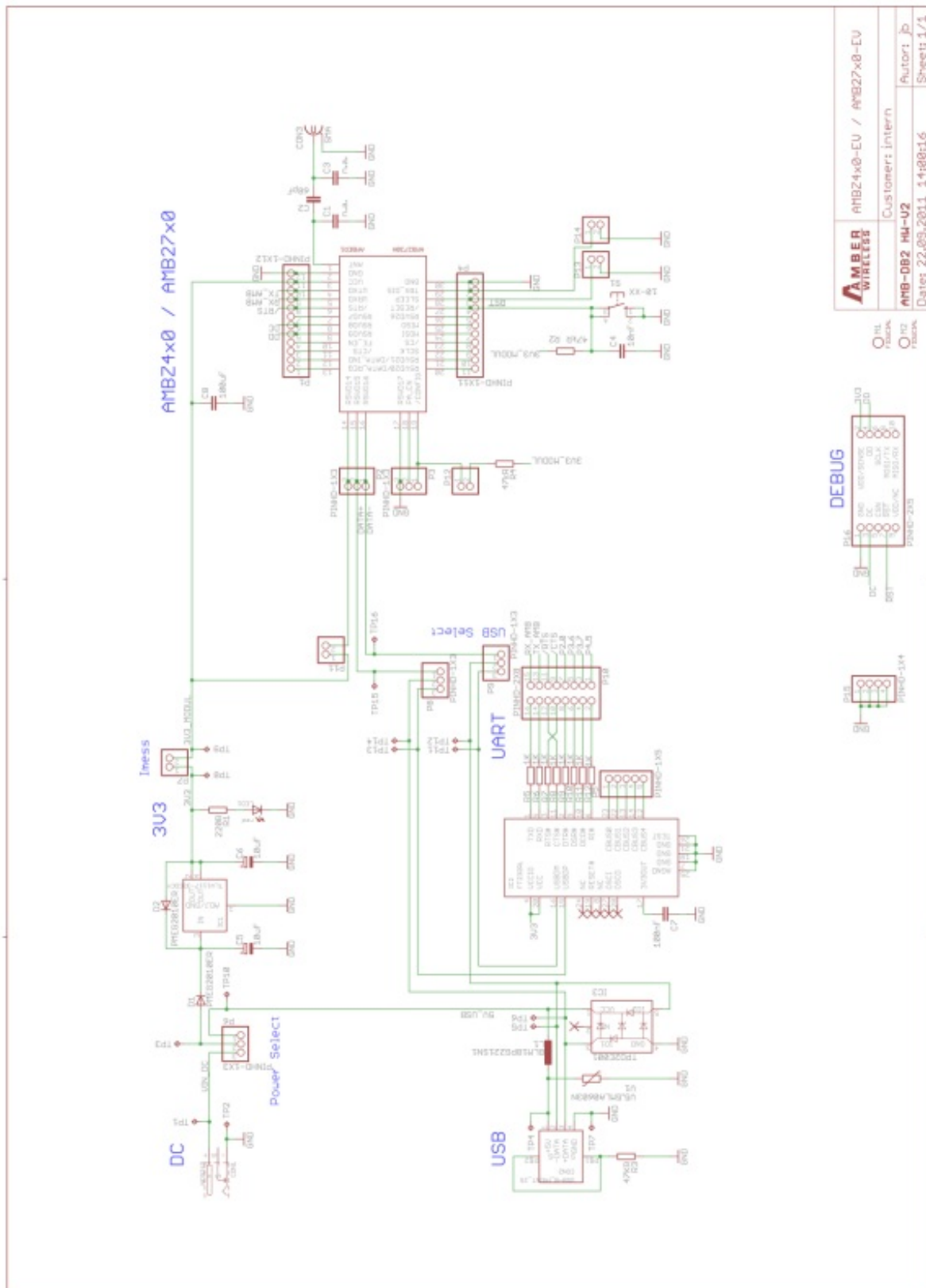## Schematic of AMB-DB2

Figure 3: Schematic of AMB-DB2

Using the AMB-DB2 with different RF modules

For detailed description of the modules refer to the corresponding data sheets and manuals.
AMB2720
Place jumper on P12, P13 and P14 to set the module in normal operating mode and connect Pin 10 to GND.

AMB2730

Place jumper on P12, P13 and P14 to set the module in normal operating mode and connect Pin 10 to GND.

AMBZ420

Connect Pin 10 to GND to select UART interface Connect Pin 13 to 3V3 to select the watch crystal

AMBZ430

Connect Pin 10 to GND to select UART interface Connect Pin 13 to 3V3 to select the watch crystal

AMB2620

Place jumper on P11 and switch P8 / P9 to "USB".

Important Notes

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Documents / Resources

	AMBER WIRELESS AMB-DB2 Demonstration Board [pdf] User Manual AMB2720, AMB2730, AMBZ420, AMBZ430, AMB2620, AMB-DB2 Demonstration Board, AMB-DB2, Demonstration Board