Interfacing/outputting from our boards (EVB1000) to different platforms is possible

(1)   The TREK/EVK boards (EVB1000) have SPI connectivity.
         The SPI could be used to communicate with the boards.
         This is described in the *EVK user manual* section 4.4.

(2)   It is also possible to use the USB interface to communicate SPI commands.
         In this mode of control the on-board USB to SPI application acts as a USB slave
         virtual COM port. It translates the COM port commands into SPI transactions to the
         DW1000.
         This is described in the *EVK user manual* section 4.3.
         Information (and example) on SPI write/read transaction and be found in section *9
         PC USB TO SPI PROTOCOL HANDLING EXPLAINED on page 25 in the DecaRanging PC
         source code description.*

(3)   TREK outputs ranging and some debug information over the virtual COM port.
         For details see chapters 2.2 and *2.3 in* the *DecaRangeRTLS Source guide*

First, the user must disconnect the SPI bus of the DW1000 from the EVB1000 MCU. This is done by setting all switches of S2 to the "off" position. Since the EVB1000 MCU will be disconnected, it does not matters if it is in "enabled" or "disabled" state.

Next, the user can connect his master board to DW1000, thanks to J6 connector. J6 pinout is given in section 7.1.4. The setup may look as following.

NOTE: the DW1000 uses 3.3V logic signals. The user's master board shouldn't use voltage above 3.3V. In the case of a 5V board, a level converter should be used.
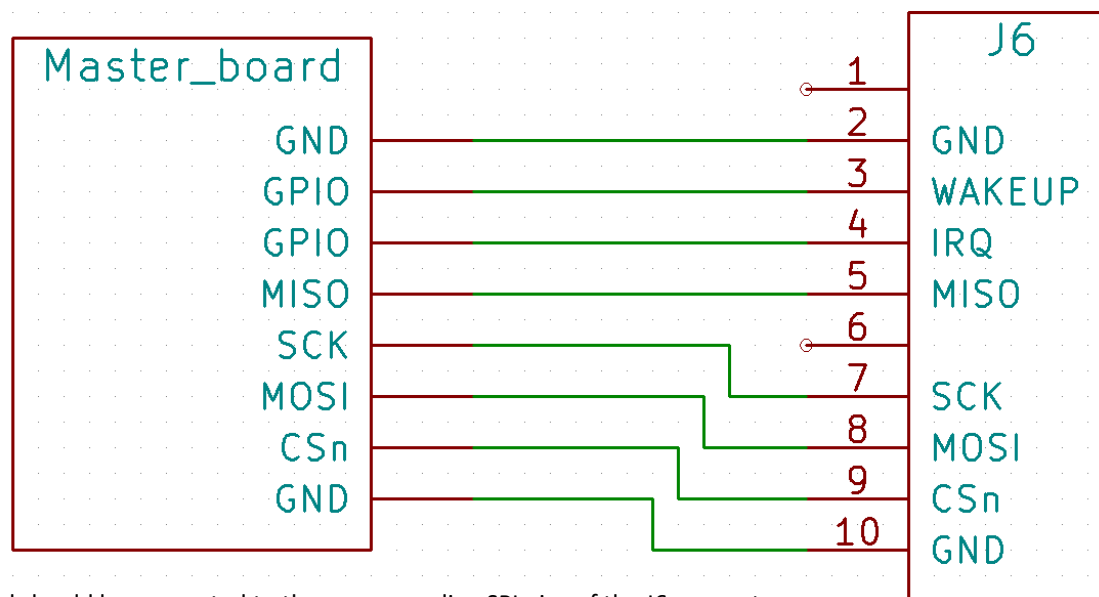
The SPI bus of the master board should be connected to the corresponding SPI pins of the J6 connector.

To ensure compatibility with Cheetah USB to SPI, "WAKEUP" and "IRQ" pins are not connected to J6 header. To use them, the user should solder a jumper or a 0 Ohm resistor to R41 and R43. This will connect these signals to J6 header. Finally, he can connect theses pins of J6 to standard GPIO.

Both boards must have a common ground reference, hence the user have to connect J6 GND pins to his master board.

Finally, the user should apply power to the EVB1000 board in order to power the DW1000.

The SPI clock phase and polarity are set with S3 '3' and '4' switches. By default, on the off position, SPIPOL = 0 and SPIPHA = 0 (see DW Datasheet 5.8 and EVK1000 user manual 7.2.3). The transmission is MSB first, and the SPI baud rate should be set accordingly to DW1000 datasheet table 18.

In addition UART could also be used ,but note that this is not Supported by Decawave.

The TREK/EVK could be prepared for usart support but it would require "green wiring" to get access to the uart (TX)* of the ARM processor on the board.

Note, any EVB1000 hardware modification will void warranty.
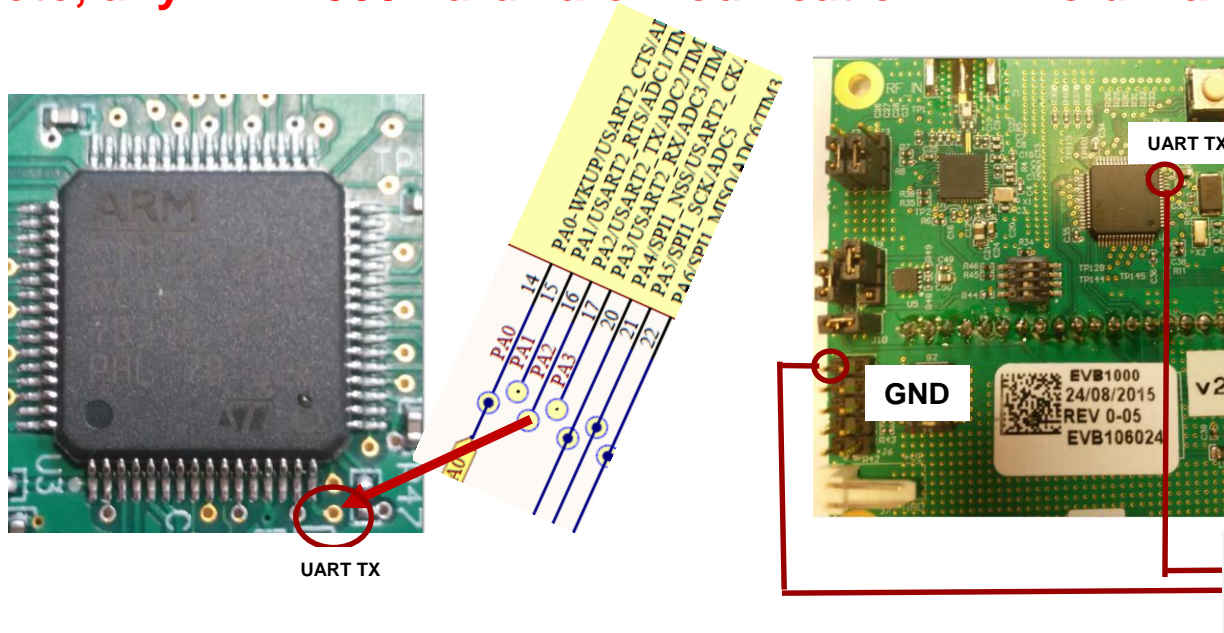
UART TX

Two wires can be soldered to the EVB1000 as shown in

The wires can then be connected to a suitable UART to RS232 or USB/virtual COM port converter (e.g. FTDI C232HD-EDHSP-0 CABLE).

When carrying out any of the HW modifications usual ESD precautions need to be observed.

Eg UART To USB (com)

Additional information: EVK CubeMX Source code and EVB1000 schematic