Frequently Asked Questions

Q1. What are all the components you will find in the DecaWave EVK1000?

Ans. 2 x Antenna, 2 x EVB1000 Boards, 2 x power leads, 2 x Micro USB cables.

Q2. How can you supply power to the Boards?

Ans. No power supply units are supplied in the kit but the boards may be powered from a bench power supply using the supplied power supply leads or via a USB power source using the supplied USB cables.

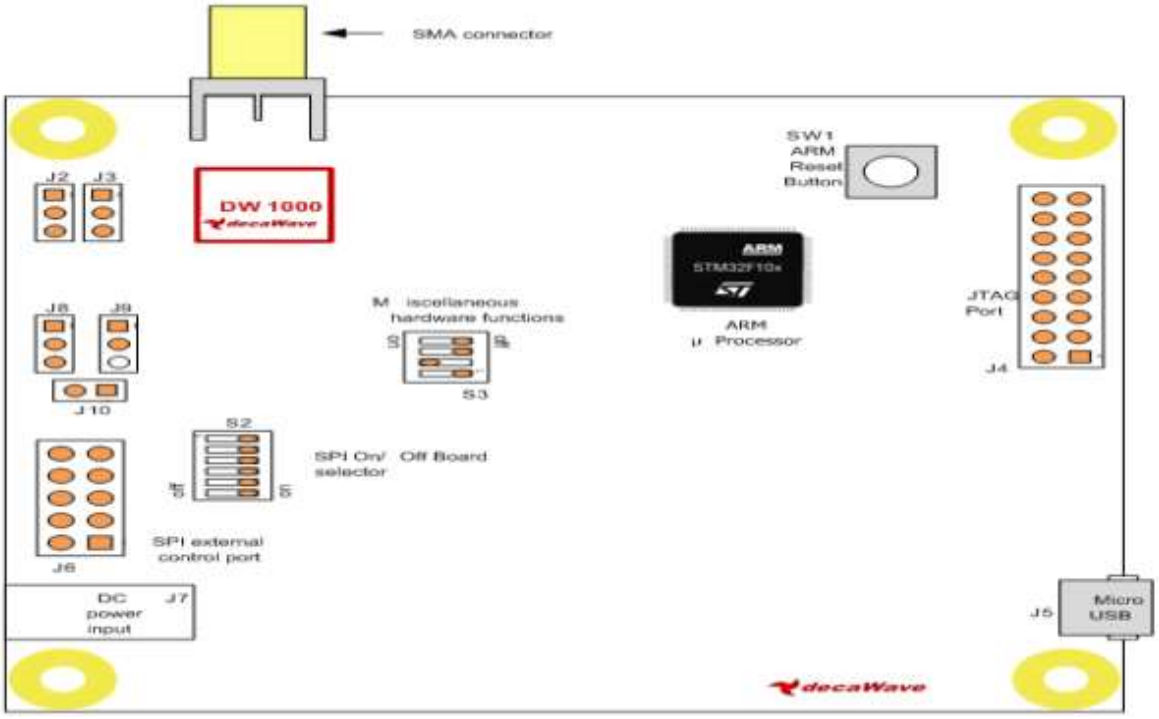
Q3. What are the configurations/settings you change on the boards for actually supplying the Board with power?

Ans. So all you have to do is insert the jumper pins.

Power Source	J8 (Insert on pins)	Comment
USB	2 & 3	The USB port to which you connect the EVB1000 should be capable of supplying at least 250 mA
3.6 V to 5.5 V	1 & 2	In this mode the externally applied supply is indirectly connected to the on-board circuitry through an LDO regulator

Q4. Where is the Jumper pin J8 on the Board?

Ans. On the Back side of the EVB Boards, you can see the side with all the Jumper pins as shown below. J8 pin is clearly visible on the extreme left side of the board.

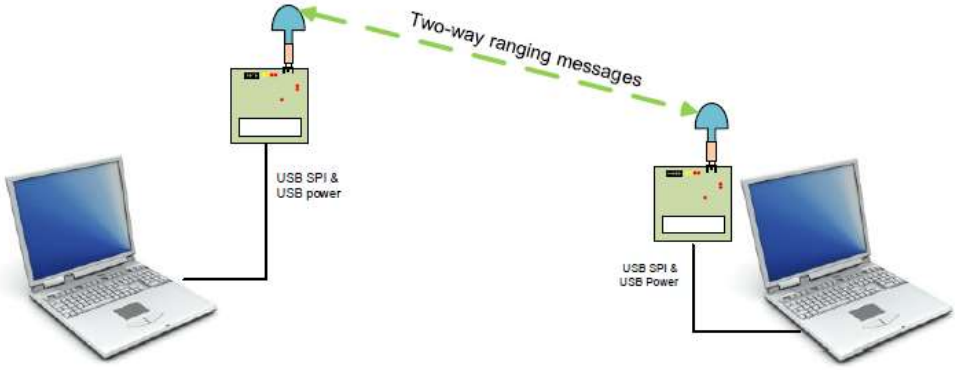


Q5. What are the different ways we can demonstrate the working of the DecaWave EVK1000 kit?

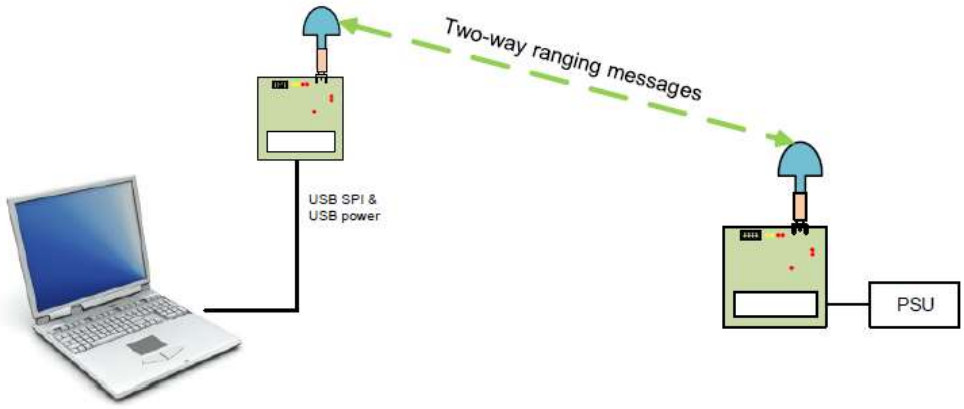
Ans. So the 3 different ways of demonstrating the kit is –

Just using the Board to Board configuration where all we do is connect the boards to power supply sources and then run them to show the distances between them on the display screen.

Using the external application to control both EVB1000 units.



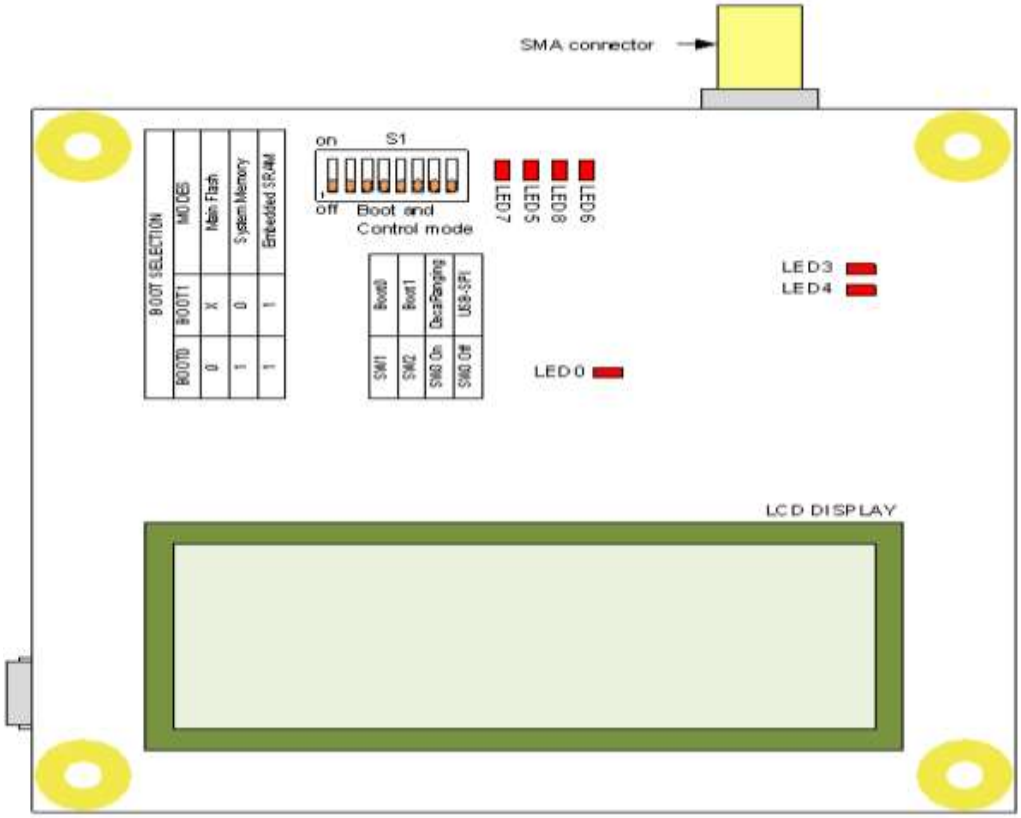
Using the external application to control one of the pair of the EVB1000 units.



Q6. How do we know if the board has been really powered up by battery?

Ans. LED 0 will illuminate to indicate that power is applied.

The snap shot below is of the front side of the board with the LED 0.



Q7. What do you mean by the different operational modes?

Ans. The different operational modes enable us to demonstrate the DW1000's performance in high speed short range and lower speed longer range.

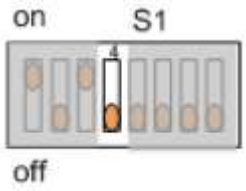
Q8. How do you set these different modes on the board?

Ans. So in order to set the different modes on the Board, you just have to change the switch S1-5, S1-6 and S1-7 on any board. The configuration of the switches is given below.

S1-5	S1-6	S1-7	Mode	Channel	Data Rate	PRF	Preamble	Preamble Code	Non standard SFD
OFF	OFF	OFF	1	2	110 kbps	16	1024	3	Yes
ON	OFF	OFF	2	2	6.8 Mbps	16	128	3	No
OFF	ON	OFF	3	2	110 kbps	64	1024	9	Yes
ON	ON	OFF	4	2	6.8 Mbps	64	128	9	No
OFF	OFF	ON	5	5	110 kbps	16	1024	3	Yes
ON	OFF	ON	6	5	6.8 Mbps	16	128	3	No
OFF	ON	ON	7	5	110 kbps	64	1024	9	Yes
ON	ON	ON	8	5	6.8 Mbps	64	128	9	No

Q9. How do you know if the switches are in ON or OFF position?

Ans. So if the switch is in the position which is “down” which is shown in the figure below, it means it is OFF and if the switch is in position “upward”, then it is ON. Basically if the yellow circle switch is shifted right at the bottom, it is OFF and vice versa.



Q10. Which board is the Anchor and which one is the Tag ?

Ans. The on-board “DecaRanging” application requires one unit to be configured as an Anchor and the other as a Tag. You can configure any one of them as an Anchor or Tag but just make sure that it is controlled with a switch S1-4. The configuration of the switch S1-4 is given below.

1. **S1-4** to **ON.** EVB1000 configured as an “Anchor”.
2. **S1-4** to **OFF.** EVB1000 configured as a “Tag”.

Q11. What are the precautions you should take while powering up your board?

Ans. Changes to jumper setting should only be made with the board powered down- under no circumstances should jumper settings be changed while the power is applied to the board via any of the possible off board connectors, or damage to the board may result.

Q12. What are the modes that have to be configured on the Tag and the Anchor for demonstrating just the Board - Board configuration.

Ans. So when we are just using the Board to Board configuration, all that happens that both the boards display the last measured distance between the boards and also the average of last 8 readings. We can use any of the features of the PC since we have not interfaced the PC to the board. So to use this configuration, just make sure that the switches S1-5, S1-6 and S1-7 on both the Boards are exactly in the same positions. They can operate in any mode but they both have to be in the same mode.

Q13. What is another way of differentiating between a Tag and a Anchor?

Ans. LED 5 will illuminate in Anchor mode whereas LED 6 will illuminate in Tag mode.

Q14. What to do if the Range on the LCD display screen read 0.00 m?

Ans. Press the reset button or disconnect and reconnect power.

Q13. What to do if the LCD shows “ERROR INIT FAIL” message?

Ans. Check that all the switches in S2 are in the ON position.

Q14. What if the channel configuration settings are the same but the Anchor does not report any TX frames?

Ans. Probably a longer response time may be needed.

Q15. What is the precaution to be taken when using “DecaRanging” PC application with one EVB1000 and ARM application on the other EVB1000?

Ans. Make sure that the channel configuration settings in the “DecaRanging” PC application are identical to the mode used on the other EVB1000.