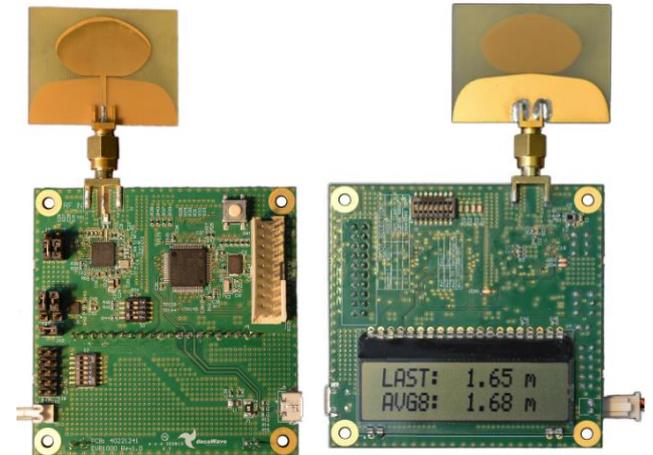
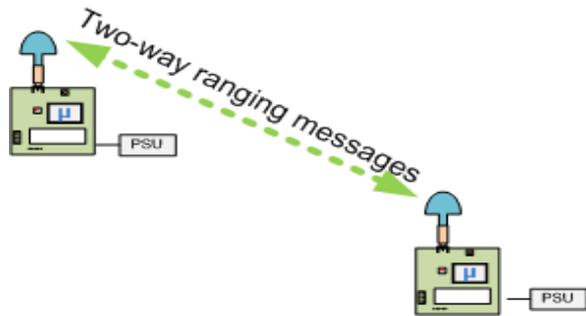


# Decawave EVK1000

## EVK1000 Presentation



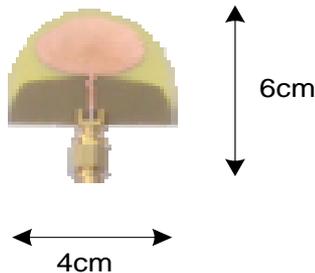
# EVK1000 BOX – Functionality and Contents



The EVK1000 provides all HW and SW elements to perform a Two-Way Ranging evaluation, including: Range accuracy, Range precision, Range sensitivity, Multipath immunity, Blocking immunity and much more.

## The Antenna

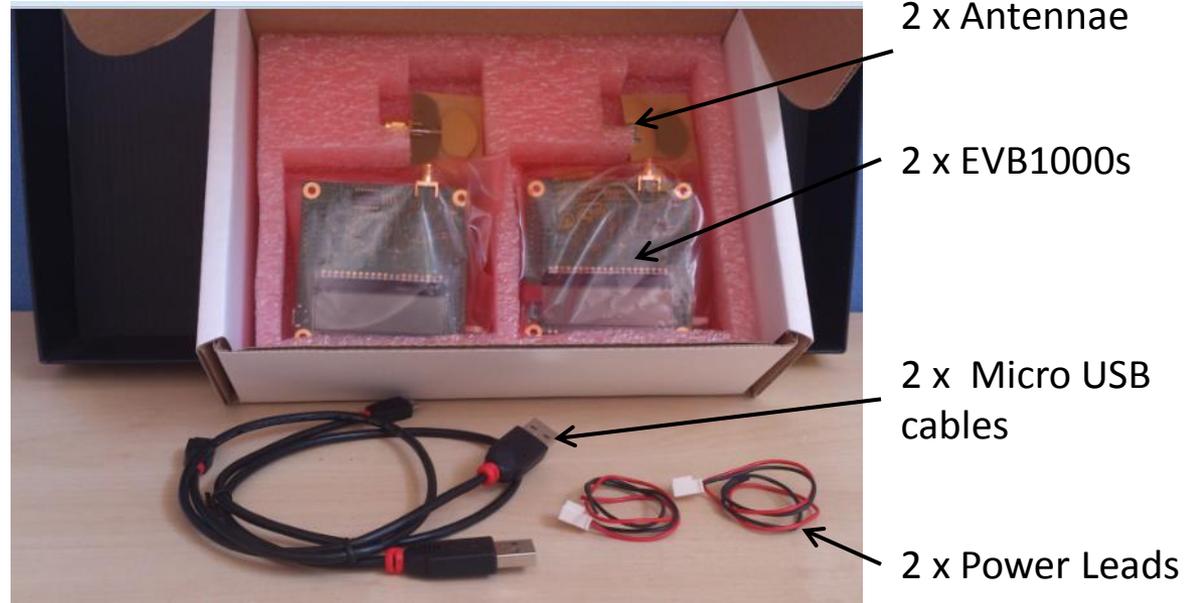
The antenna is a wideband planar Omni-directional. It covers both low-band (~4GHz) and high-band (~6GHz) giving gains of 1dBi and 3dBi respectively.



## Unique Code

Each EVK is supplied with a unique code on the BOX.

This code is used to Register the EVK by sending email to: [register@decawave.com](mailto:register@decawave.com)



**Also included but not shown: 2 x EVB Stands**



# EVK1000 BOX - Boards Explained

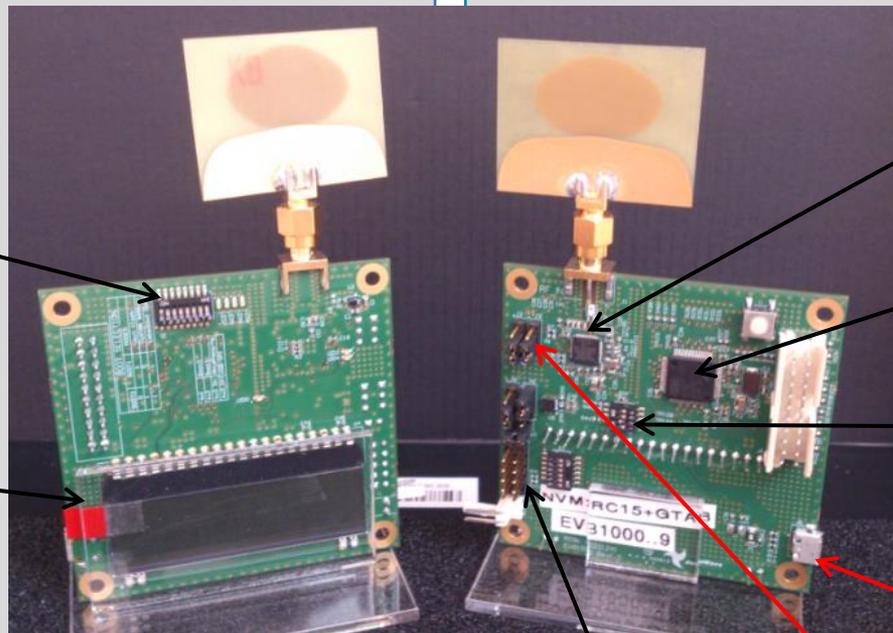
## Display side

### Configuration

By means of dipswitch  
Setting, the configuration of the  
ARM  $\mu$ Controller can be changed.

### Display

To display measurement results or  
other functions as required  
depending on user programming.



## Component side

DW1000 IC

$\mu$ Controller  
ST32F105

Various switches  
(for Int./Ext.  $\mu$ P control)

Interfaces  
JTAG, SPI, USB\*

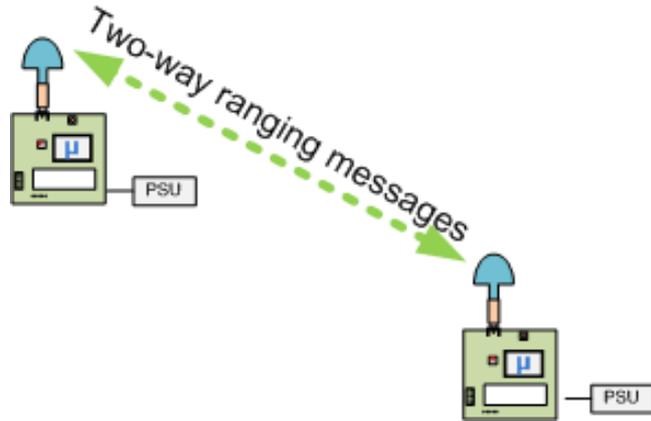
Various Power  
Options  
(USB\*, 2V8 - 5V5)

\*The USB interface may be used for powering the board and/or as an optional means to drive the DW1000 IC from an external PC (instead of using SPI Interface)

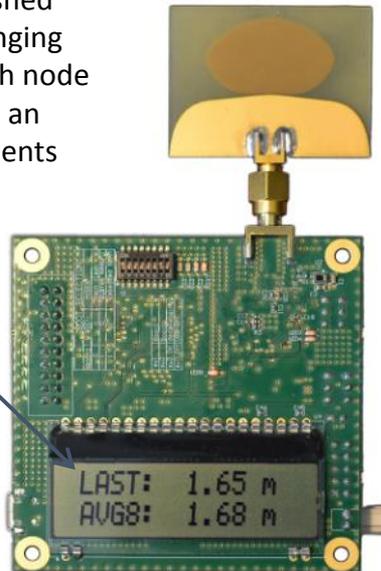


# Configuration Options when using EVK1000

## Both boards controlled by On Board Processor



Once communication is established between the two nodes and ranging commences, the display on each node shows last measured range and an average of the last 8 measurements



From the box, both boards come with dip-switches set according to default configuration settings. This enables a quick set-up of the demonstration once the boards are connected to a power source.

### The default configuration setting is:

**Channel** =2  
**Data Rate** =110Kb/s  
**PRF** =64  
**Preamble** =1024

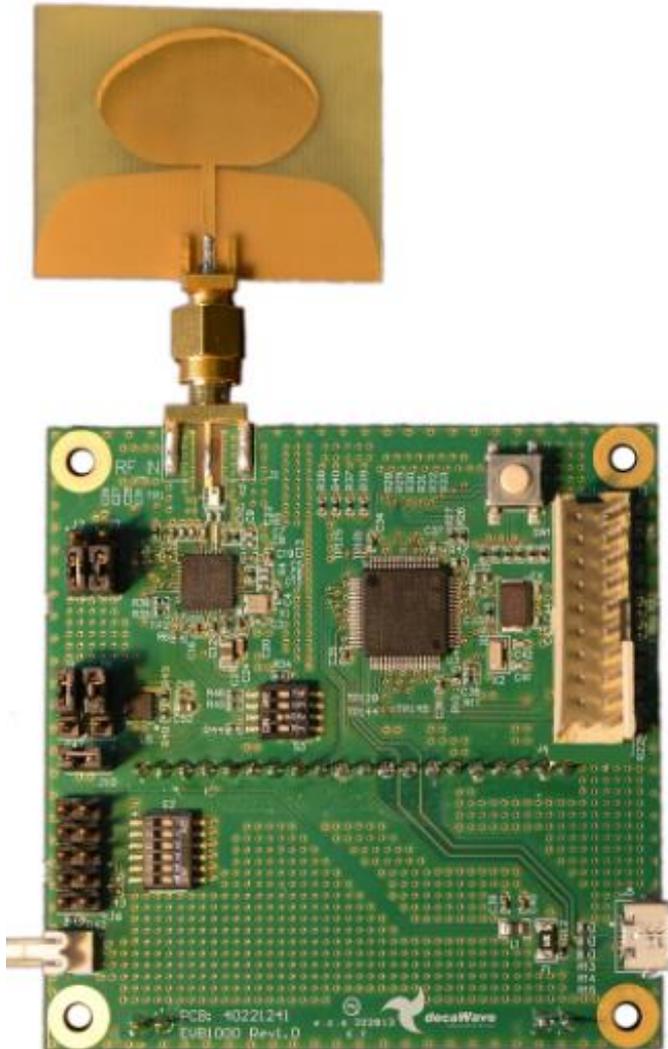
### The setting options allow different configurations as follows\*:

**Channel** =2 or 5  
**Data Rate** =110Kb/s or 6.8Mb/s  
**PRF** =16 or 64  
**Preamble** =1024 or 128

\* More configurations and functions are possible when using the PC DecaRanging Application



# EVK1000 Software Tool



PC-based DecaRanging demonstration software and documentation can be obtained after registration of the EVK..

Registration is done by sending an email to [register@decawave.com](mailto:register@decawave.com) with your registration code and a request for the software and documentation.

This unique identity codes can be obtained from the side of the Box.

- PC DecaRanging™ Software (.exe only)
- PC DecaRanging™ User Guide
- EVK1000 User Manual
- EVB1000 PCB Schematics and BOM

## Optional

- DecaRanging™ Source Code for ARM  $\mu$ Processor



# Additional Configurations when using EVK1000

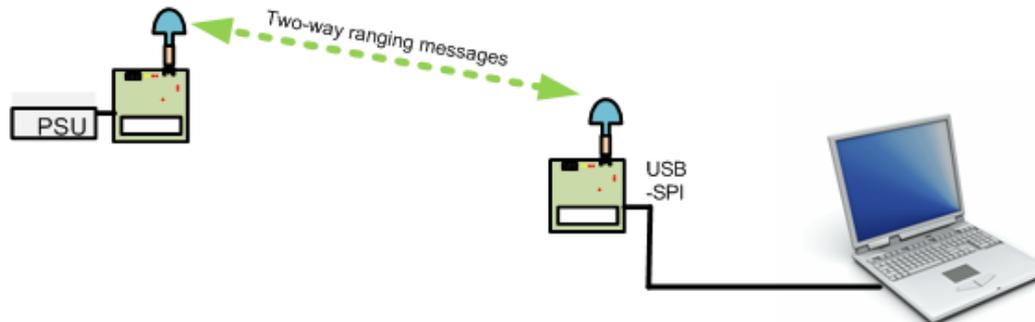
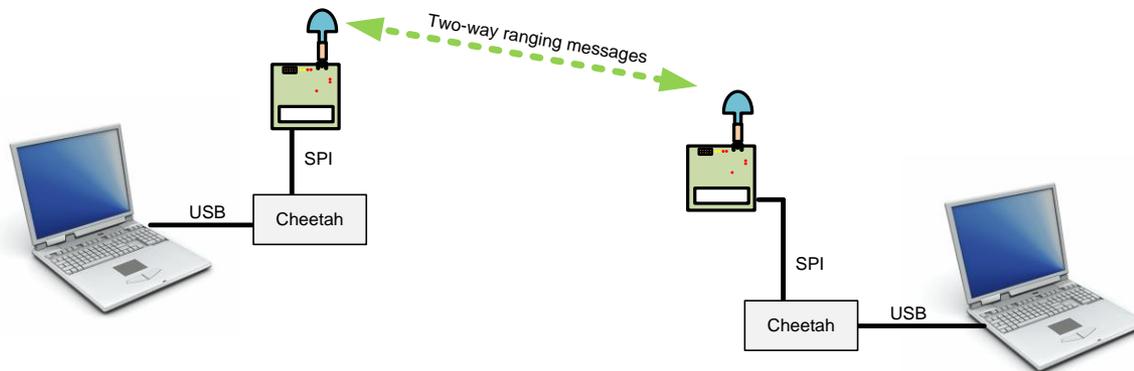
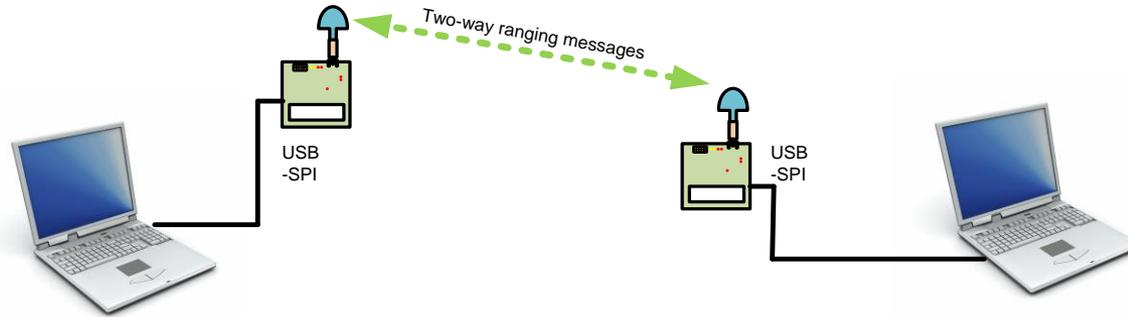
## One or Both boards controlled by an External Processor (e.g PC)

The PC DecaRanging application allows you to run a two-way ranging demo on two PCs/Laptops simply by using the USB-SPI connectivity provided on the EVB1000.

Using this configuration enables you to evaluate any desired configuration in any environment.

Similar to the above configuration but using Cheetah's to connect to the SPI port on the DW1000

Using one of the EVBs as a portable device enables you to more easily evaluate performance on range, accuracy, LOS & NLOS situations, immunities etc..



# Regulatory Approvals

This EVK1000 evaluation kit based on DecaWave's DW1000 IC is intended solely for use by competent engineering personnel for the purposes of evaluating the use of DecaWave's DW1000 IC in wireless location and communications systems.

The EVK1000, as supplied from DecaWave, has not been certified for use in any particular geographic region by any regulatory body governing radio emissions in such regions.

The EVK1000 is supplied under the following conditions: -

- The distribution and sale of the EVK1000 is intended solely for use in future development of devices which may be subject to regulations or other authority governing radio emission.
- This EVK1000 may not be resold by users for any purpose.
- The EVK1000 as supplied by DecaWave may not be incorporated directly into user devices or products unless such products undergo the appropriate certification.
- Operation of the EVK1000 in the development of future devices is at the discretion of the user and the user bears all responsibility for any compliance with regulations laid down by the authority governing radio emissions in the user's jurisdiction.

All products developed by the user incorporating the DW1000 must be approved by the relevant authority governing radio emissions in a jurisdiction prior to the marketing or sale of such products in that jurisdiction. User bears all responsibility for obtaining such approval.

If the user has obtained the EVK1000 for any purpose other than those listed above the user should return the EVK1000 to the supplier immediately.

**FCC NOTICE:** This kit is designed to allow (i) product developers to evaluate electronic components, circuitry, or software associated with the kit to determine whether to incorporate such items in a finished product and (ii) software developers to write software applications for use with the end product. This kit is not a finished product and when assembled may not be resold or otherwise marketed unless all required FCC equipment authorizations are first obtained. Operation is subject to the conditions that this device not cause harmful interference to licensed radio stations and that this device accept harmful interference. Unless the assembled kit is designed to operate under Part 15, Part 18 or Part 95 of the FCC Rules, the operator of the kit must operate under the authority of an FCC license holder or must secure an experimental authorization under Part 5 of the FCC Rules.



# Not included when ordering EVK1000

## Required when:

## Ordering Information

Cheetah SPI Host Adapter

OPTIONAL.

[Ordering Information](#)



debugger/programmer  
for STM32 (ST-LINK/V2)

Used to communicate with the STM32 microcontroller located on Evaluation Board.  
e.g. to re-program/Flash the ARM  $\mu$ Controller with your own developed software



Power Source

Required to power the EVB boards.  
The source can be a PC, battery, or other external power source provided it supplies 2v8-> 5v5 DC.



**End of Document**

[www.decawave.com](http://www.decawave.com)

