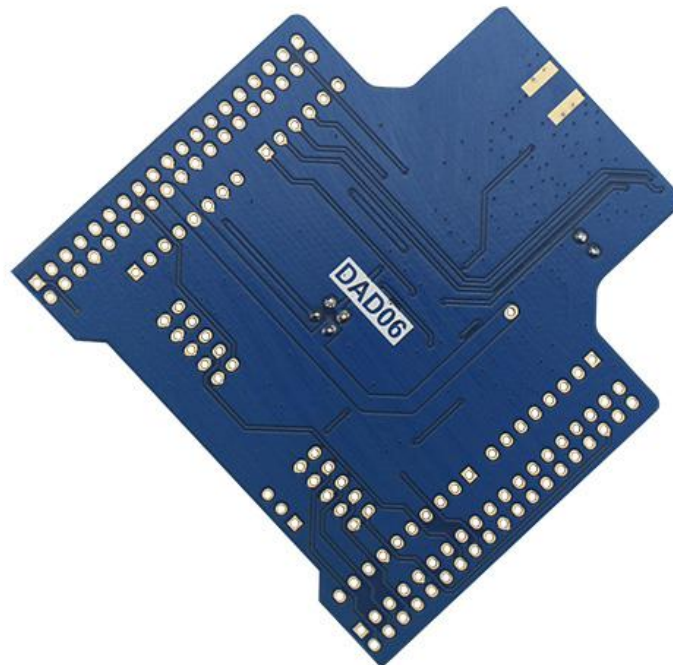
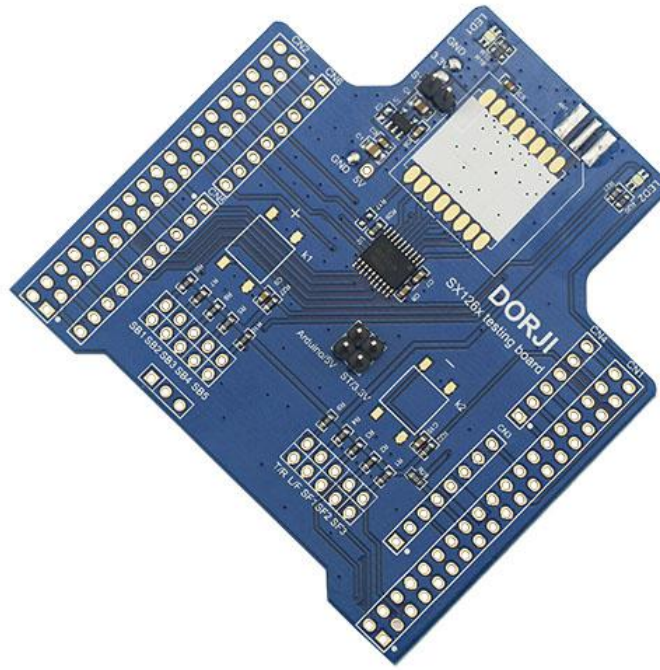


**DAD06**

**SX1262 testing board for Arduino UNO and ST Nucleo--L053R8**

**V1.00**



## DESCRIPTION

DAD06 is a testing board designed for lora sx1262 module DRF1262G. It can be used together with development Arduino UNO or ST Nucleo-L053R8 to test the distance of DRF1262G module or make quick re-development. Customers can download corresponding codes from DORJI website to make quick start.

### 1. Arduino UNO platform

Users can set one kit as transmitter and another as receiver to make distance test. Because of the limited hardware resource of Arduino UNO, the RF-factor and RF-Bandwidth are fixed in the codes so users need to change related codes if wanting to test distance in different RF data rates.

DAD06 board is powered by 5V Arduino UNO. The max. working voltage of sx1262 chip can not exceed 3.6V. There is a 5V-to-3V level converter on the board so users need to connect the jumper (silkscreen name: Arduino/5V) and keep another jumper (silkscreen name: ST/3.3V) open in order to get the right logic level connection with the I/O pins of DRF1262G module.

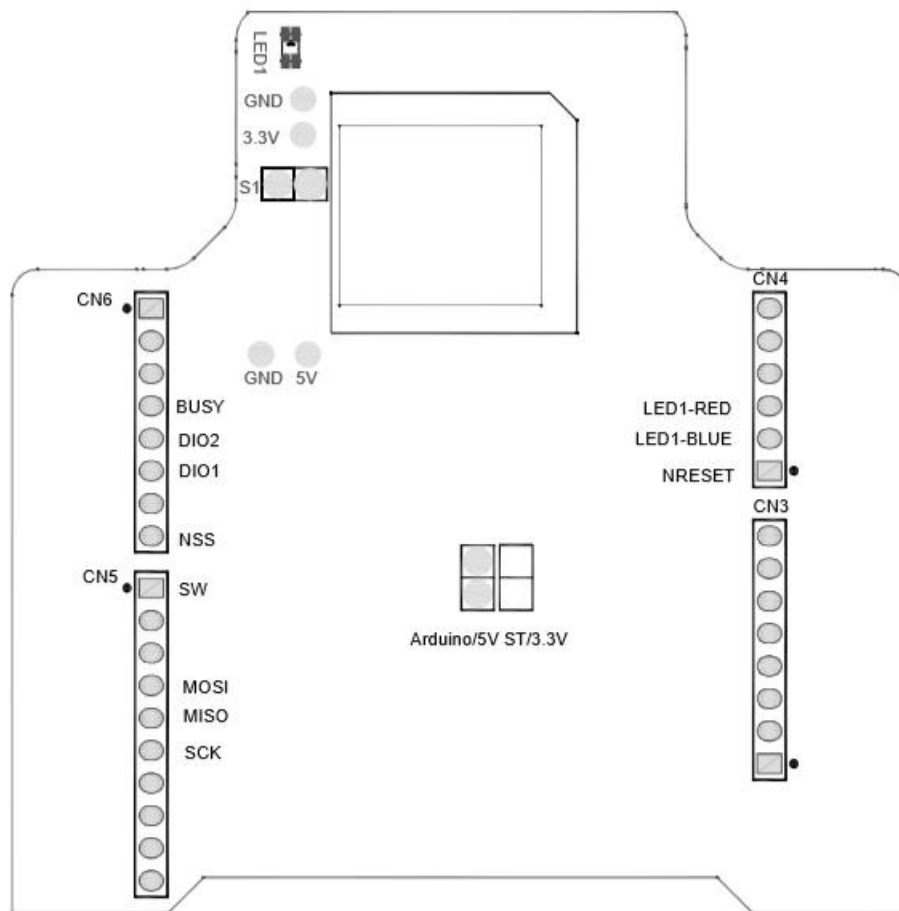


Figure 2: DAD06 board layout for Arduino UNO

Name	Description	Arduino UNO	ST Nucleo-L053R8
LED1	Red--->TX, Blue--->receive	used	used
LED2	Red---> Lora	unused	used
S1	Power jumper which can be used to measure the current of DRF1262G module. In normal working mode, it should be connected.	connected	connected
K1,K2	Buttons for reserved function	unused	unused
Arduino/5V	Jumper for 5V-to-3.3V level converter, For Arduino UNO it should be connected and for ST Nucleo board, it should be open	connected	disconnected
ST/3.3V	Jumper for 3.3V direct pass. For Arduino UNO it should be disconnected and for ST Nucleo board, it should be connected	disconnected	connected
CN1,CN2	2x19p female pin header which only can be used for ST Nucleo board.	unused	used
CN3,CN4 CN5,CN6	Pin headers only for Arduno UNO. It will be better to keep them not soldered for ST Nucleo in case the board is too hard to insert into the ST Nucleo	used	unused
SB1,SB2 SB3,SB4	The four jumpers are only used by ST Nucleo board to change the RF bandwidth	unused	used
SB5	Reserved for ST Nucleo board	unused	reserved
T/R	Jumper for switching TX/RX for ST Nucleo board. Jumper disconnected-->TX, Jumper connected-->RX.	unused	used
L/F	Disconnected for ST Nucleo board	unused	disconnected
SF1,SF2,SF3	The three jumpers are used by ST Nucleo board to change the RF factors	unused	used

Table 1: The Functions of Jumpers and Pin headers on DAD06

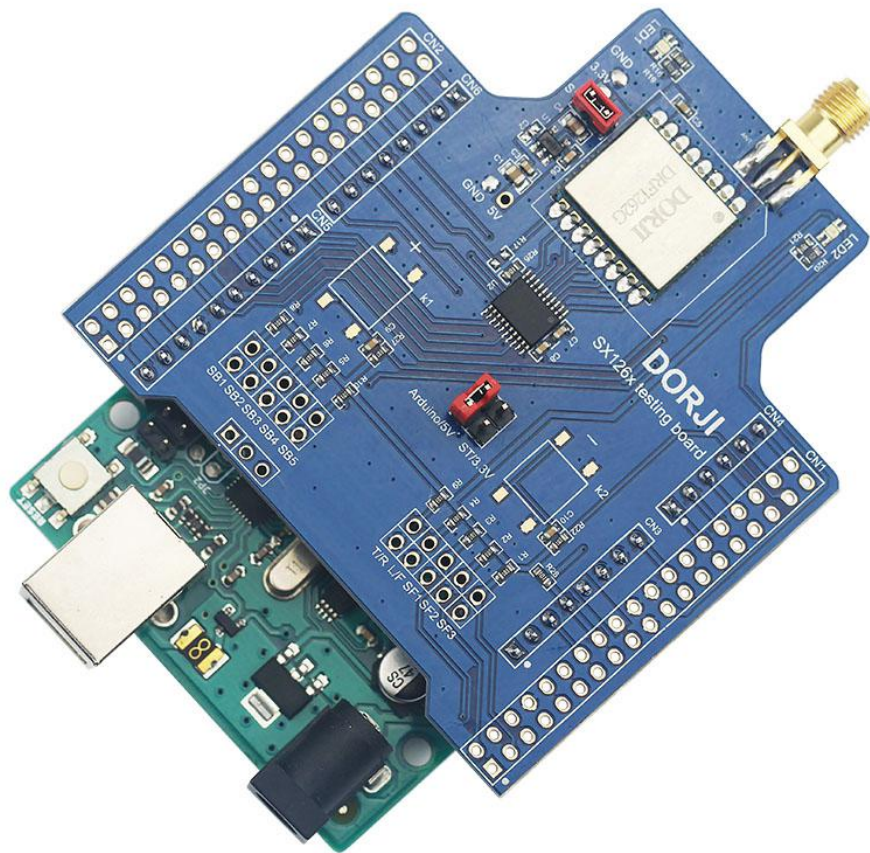


Figure 3: DAD06 board with Arduino UNO

## 2. ST Nucleo-L053R8 Platform

The testing board DAD06 provides more functions for testing with ST Nucleo-L053R8. The RF-factor and RF-bandwidth can be changed through related jumpers and the RX/TX also can be switched by the corresponding jumper. Please note that as soon as any jumper status is changed, users need to restart the ST Nucleo board by pressing the reset button on the ST board to make the change come into effect.

The ST Nucleo board provides 3.3V TTL level so it's no need to use the 5V-to-3V level converter and Users can connect the ST/3.3V jumper and keep the Arduino/5V jumper open. Please note that the RF-factor and RF-bandwidth jumpers must be set to the same in order to establish successful communication between two DAD06 boards.

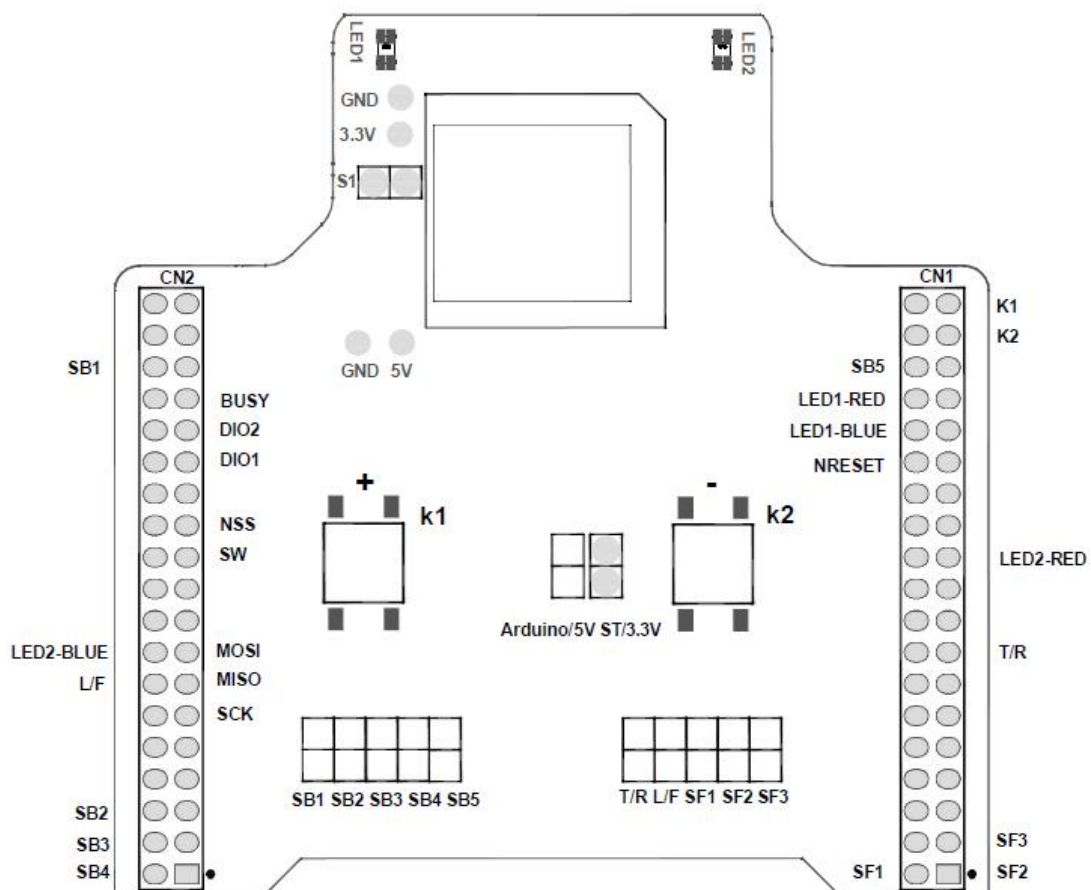


Figure 4: DAD06 Board for ST Nucleo-L053R8

SB1	SB2	SB3	SB4	RF_Bandwidth
OFF	OFF	OFF	OFF	250KHz
ON	OFF	OFF	OFF	125KHz
OFF	ON	OFF	OFF	60.5KHz
OFF	OFF	ON	OFF	41.67KHz
OFF	OFF	OFF	ON	31.25KHz
ON	ON	OFF	OFF	20.83KHz
ON	OFF	ON	OFF	16.63KHz
ON	OFF	OFF	ON	10.42KHz
OFF	ON	ON	OFF	7.81KHz
Other combinations				500KHz

Table 2: Jumpers vs RF\_Bandwidth

The DRF1276G module uses +/-10ppm crystal so bandwidth < 125KHz is not recommended for long-term application. DORJI will release TCXO version of sx1262 module DRF1262T which the narrower bandwidth can be used. Please check the website of DORJI for newest information for it.

SF1	SF2	SF3	Spreading Factor
OFF	OFF	OFF	12
ON	OFF	OFF	11
OFF	ON	OFF	10
OFF	OFF	ON	9
ON	ON	OFF	8
ON	OFF	ON	7
OFF	ON	ON	6
ON	ON	ON	5

Table 3: Jumpers vs RF\_Spreading Factor

Please note that the OFF in the tables above refers to the disconnected status of jumper and ON refers to the connected status of jumper.

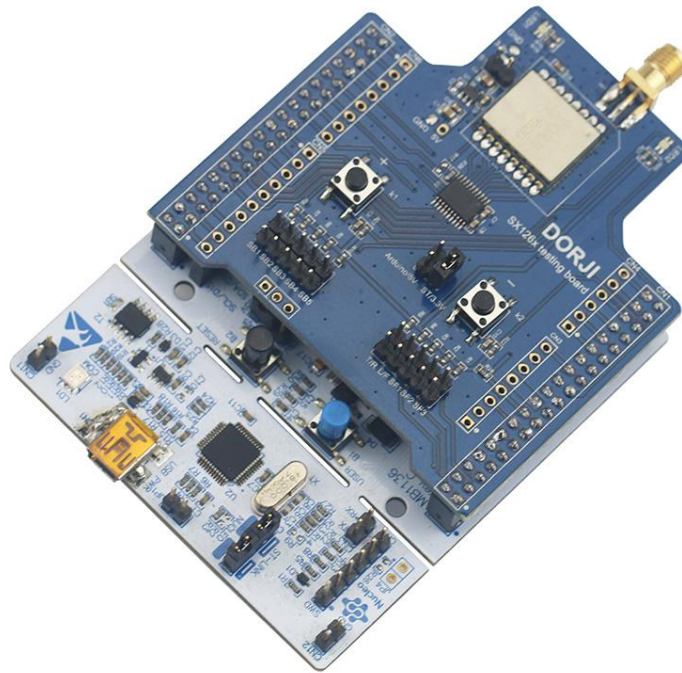


Figure 5: DAD06 board with ST Nucleo-L053R8

### Accessories for DAD06 Board

The DAD06 board is shipped with necessary accessories for matching different development kits. Below are the list of these items.

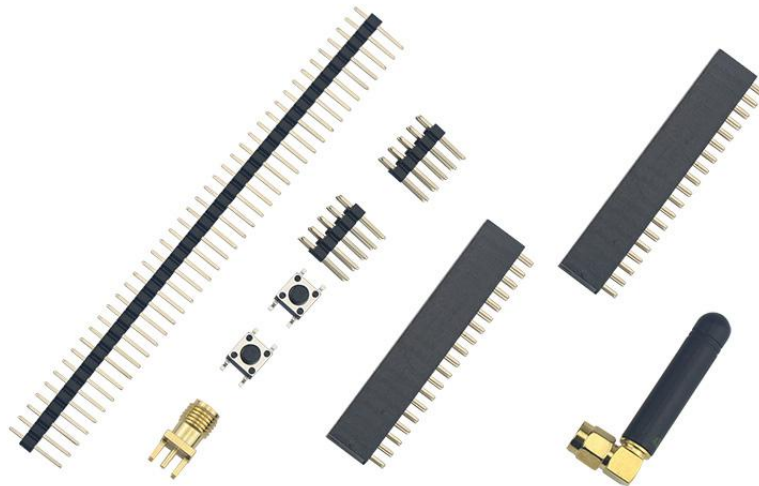


Figure 6: Accessories for DAD06 board

The suitable type of antennas for 868MHz band are DAA086SA045N (short right angle antenna) and DAA086SA100N (longer right angle antenna). We will provide DAA086SA100N by default unless it is out of stock and will be replaced with DAA086SA045N

For 915MHz band, we will provide the DAA091SA045N (short right angle antenna) by default and will try to keep the longer right angle antenna in stock as soon as possible.

<p><b>Dorji Applied Technologies</b> A division of <b>Dorji Industrial Group Co., Ltd</b></p> <p>Add.: Xinchenuayuan 2, Dalangnanlu, Longhua, Baoan district, Shenzhen, China 518109</p> <p>Tel: 0086-755-28156122</p> <p>Fax.: 0086-755-28156133</p> <p>Email: <a href="mailto:sales@dorji.com">sales@dorji.com</a></p> <p>Web: <a href="http://www.dorji.com">http://www.dorji.com</a></p>	<p>Dorji Industrial Group Co., Ltd reserves the right to make corrections, modifications, improvements and other changes to its products and services at any time and to discontinue any product or service without notice. Customers are expected to visit websites for getting newest product information before placing orders.</p> <p>These products are not designed for use in life support appliances, devices or other products where malfunction of these products might result in personal injury. Customers using these products in such applications do so at their own risk and agree to fully indemnify Dorji Industrial Group for any damages resulting from improper use.</p>
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