
Operation Manual for USB Converter Board**V1.11**

The function of kit DAC02 is to convert UART signal to USB signal and provides the interface for customers to configure the settings of modules through PC software tool. This manual demonstrates how to use DAC02 in setting mode and normal work mode for different modules.

1. In Setting Mode

The RF FSK modules provided by DORJI are mainly based on RFICs from Silicon labs, ADI and Semtech. DORJI provides two software tools for different RF modules. The USB converter board has a 6-hole socket but for DRF1212, DRF4432 and DRF7020D13/20 modules they have 7 pins so the 7th pin of modules must be kept in floating status in connection. The Pin 1 (marked as 1 on the top of USB board) is corresponding to the Pin 1 (GND pin) of RF modules.



Figure 1: Connecting Status

When configuring module, users should insert the module into USB converter board correctly and connect it to PC and then open software tool. After the tool finds the module and shows “Found device” in the status line at the bottom, users then can write/read modules through corresponding buttons. After successful operation, the message “Write succeed” or “Read succeed” will be showed in the status line.

Module Type	Software Tool
DRF1212D10, DRF4432D20	DRF Tool for 1212/4432 series
DRF7020D series, DRF7020M series	DRF Tool for ADF702X series

Table 1 Module Type Vs Software Tool

Note: If the software tool is run before module is connected to PC, an alert window will show up and display “No serial port is found”. Users only need to click the button to confirm, close and reopen the tool after module is connected correctly.

2. In Normal Work Mode

The main function of USB converter board is to configure modules through PC so the kit is not tailor-made for testing communications between modules. Different modules have different level requirements on control pins in order to work in normal mode. The table

below shows the difference among modules.

SET-A/EN	SET-B/SET	Module Type
LO	LO/HI	DRF1212D10
LO	HI	DRF4432D20
HI	HI	DRF7020D series, DRF7020M series

Table 2 Level Controls in Normal Communication Mode

- 1) For DRF1212 modules, the 3rd pin is SET-A and the 7th pin is SET-B. In normal communication mode, the SET-A must be low and SET-B can be low/high (Normal mode/Wake-up mode). The USB converter board uses IC CP2102 from Silicon labs and its RTS pin is corresponding to SET-A pin of DRF1212 module. In order to test communication between modules successfully, users should choose serial port software which provides **RTS** option and keep **RTS** selected so that the SET-A pin is pull down and the DRF1212 modules will work in wake-up mode.
- 2) For DRF4432 modules, the 3rd pin is Enable pin and in normal work mode it must be set to low. The 7th pin is Data/field strength indication pin. When it is sent to high, the module outputs normal data or else it outputs field strength value. For the same reason, DRF4432 modules must be tested by serial port software with **RTS** option.
- 3) As to DRF7020D/7020M series, the 3rd pin is Enable pin and in normal mode it must be set to high. The 7th pin is SET pin and it is set to low when modules need to be configured. These series of modules can work correctly when tested under common serial port software.

<p>Dorji Applied Technologies A division of Dorji Industrial Group Co., Ltd</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: sales@dorji.com</p> <p>Web: http://www.dorji.com</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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