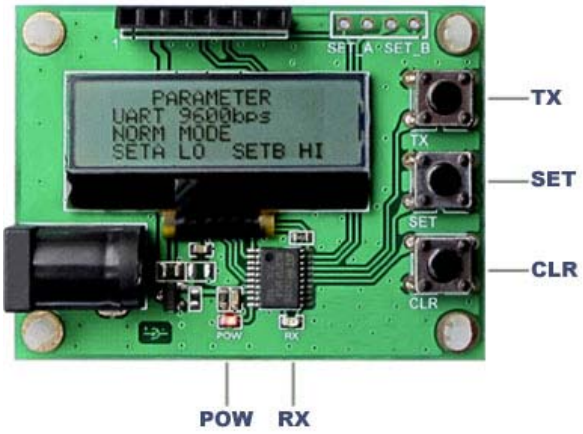
Operation Manual for Demo Kit 1212/4432/7020 Series V1.12

The demo kit for DRF1212/4432/7020 series modules includes three parts: LEDs, Buttons and LCD. This manual firstly introduces the functions of each part and then makes detailed description about operation steps.



1. LEDs

POW LED: It is for power indication. When powering on, the POW LED will be lighted for several seconds and then flash at 1 second intervals.

RX LED: When the kit receives a package of data sent from transmitting board successfully, the RX LED will flash once

2. Buttons

Num	Button	Short Press	Long Press
①	TX	One transmit	Transmit per 0.5 second
②	SET	Set Pin SET-A	Set Pin SET-B
③	CLR	Clear LCD screen	Set baud rate
④	TX+CLR	--- ---	Adjust LCD brightness
⑤	SET+CLR	--- ---	Norm/ACK Mode

Table 1: Button Functions

Kit 1212/4432/7020 can work in two working modes: Normal mode and ACK mode. By long press two buttons “SET+CLR” simultaneously, the kit will be switched between the two modes.

3. LCD

When powering on, the LCD of kit will display full settings (such as baud rate, SET-A level,

SET-B level, working mode, etc.). After several seconds, the screen will be cleared and no message will be showed until other operations are triggered.

Function Description

Assumed that RF modules have been inserted in two kits (Kit A and Kit B) correctly and kits are powered on. Each operation will be clarified in details here by combining table 1.

① **TX button:** When this button on Kit A is pressed shortly, one package of data will be sent at once and the LCD on Kit A will display "ONSEC TX" for a short time. After Kit B receives the data successfully, the RX Led on Kit B will flash once and the LCD will display "Dorji Applied Technologies". When TX button on Kit A is pressed continuously, the RX led on Kit B will flash at 1 second intervals and "Dorji Applied Technologies" will be displayed repeatedly.

② **SET button:** Different RF modules have different control on the levels of Enable and Set pins in order to work in normal conditions so the settings will be varied according to the type of RF modules.

SET-A	SET-B	Module Type
LO	LO	DRF1212D10
LO	HI	DRF4432D20
HI	HI	DRF7020D13, DRF7020D20, DRF7020D27

Table 2: PIN Level Selection

③ **CLR button:** For short-press, the LCD screen will be cleared. For the first long-press, the parameters will fully be showed on the screen. For the next long-press, the baud rate will be changed to the next setting. The baud rate can be changed from 1.2k bps, 2.4k bps, 4.8k bps, 9.6k bps to 19.2k bps. The baud rate here means the communication rate between kit and RF modules. However the default baud rate of RF modules is 9.6k bps so this baud rate of kit should be changed to 9.6k bps in order to display received message correctly.

④ **TX+CLR buttons:** When the two buttons are long-pressed simultaneously, the brightness of LCD will be changed to next level. When long-pressed are repeated, the brightness will iterate in 5 different brightness (including full black screen).

⑤ **SET+CLR buttons:** When the two buttons are long-pressed simultaneously, the kit will be changed from one working mode to another (Norm→ACK or ACK→ Norm). In Norm working mode, the functions of buttons will be the same as those described above. In ACK mode, the functions of TX button will be slightly different.

Assumed both Kit A and Kit B are set in ACK mode. When the TX button in Kit A is shortly pressed one or two times, a package of data will be sent by Kit A. After Kit B receives the

data, the RX LED will flash once and then sends the data back to Kit A. Kit A receives the data and flash the RX LED and then send the same data out again. The procedure will be repeatedly until you clear the screen so you can see the RX LEDs on Kit A and Kit B are lighted alternatively.

Power Supply

DRF1212 modules work at 2.1~3.6V but DRF4432 and DRF7020 series modules work at higher voltage so the Kits must be powered with different power supplies when testing different modules.

Power Supply	Module Types
<**3.3V** (3V recommended)	DRF1212D10
<**5.5V** (5V recommended)	DRF4432D20,DRF7020D13,DRF7020D20,DRF7020D27

Table 3: Power Supply vs Module Types

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