

## **Manual of Instructions:**

### **Si473x LW/MW/SW/CB AM/FM Stereo RDS Radio Receiver w/ ST7735 TFT Display and Arduino Nano**

- Open the sketch on Arduino IDE, install the libraries located in "install these libraries" folder and choose the correct I2C address for your Si4732 (0x11 or 0x63), before to start. The module PL102BA-S V2 uses address 0x63.
- Compile the sketch and then load it to the Arduino Nano, Uno or Pro Mini.
- Follow the schematics to wire the Arduino, display, PLB102 module or Si4732, rotary encoder, push buttons, etc.
- The first time to power up the radio circuit, the initial values must be loaded into the EEPROM memory, with the following procedure: while pressing and holding the push button PB2, turn on the Arduino power and wait for the screen shows the message "DEFAULT VALUES", now it is ready to work.
- There are 4 push buttons and they have 2 functions each: short and long press (except PB3). Also there is one switch SPDT (S1).
- Push button PB1: to select the AM on and AM Band browser Up/Down selector: short press AM initiation coming from FM and then UP band, long press DOWN band (14 bands).
- Push button PB2: to 'SAVE'\* the current frequency, band, color theme to EEPROM and change the Tuning Steps (1, 5, 9, 10kHz): short press 'SAVE\*', long press change Tstep. \*Even if the arduino power is turned off and the power supply is removed, the information will be stored in the arduino's EEPROM memory and retrieved the moment it is turned on again.
- Push button PB3: to change bandwidth IF Filter for AM (6, 4, 3, 2.5, 2, 1.8, 1kHz) and FM (Aut, 110, 84, 60, 40kHz).
- Push button PB4: to select the FM on, RDS program type (station ID / radio text / auto scroll radio text) and color theme: short press FM initiation coming from AM and then RDS type change, long press will switch color theme from blue to black and vice versa.
- Rotate the rotary encoder to tune up or down the frequency to search the stations.
- The S1 switch is used to select the antenna for Shortwave (SW) or Medium Wave / Long Wave (MW / LW). When switch S1 is in the MW position, the external shortwave antenna must be disconnected to obtain a cleaner reception, as in this case the ferrite rod plays the role of an antenna.