

## **STL SI654 Operation Description**

### **A. Base Unit**

1. The whole base unit is controlled by the MCU U1.
2. The EEPROM U2 keeps some important data while the unit is powered off.
3. When the LEARN button is pressed, the MCU U1 flashes the LEARN LED to indicate the unit is in learn mode. The MCU detects the IR (Infrared) signal that is generated by other remote control device with the IR RECEIVER and saves the data into EEPROM U2.
4. The MCU outputs the same learned signal to the IR LED V3 when is needed.
5. The MCU U1 receives the command signal from the Remote Unit by RF receiver IC102 and T8.
6. The MCU U1 generates a signal to the 2.4 Ghz module to select which channel is used.
7. The MCU U1 also selects the input source (from AV input or TV) by the AV selector U3.
8. If the TV is selected, then the MCU will control the TV tuner to work under the select TV channel.
9. The MCU U1 also controls the OSD (On Screen Display) circuit to display some characters on the screen when it is needed.
10. The MCU can detect whether there is a video signal or not from the synchronous separation circuit T7.
11. The MCU will mute the audio signal (by T9,T10) while changing the TV channel to prevent the noise is heard.
12. The whole Base unit is powered by an AC adaptor and the Power Supply circuit.

### **B. Remote Unit**

1. The whole Remote unit is controlled by the MCU U101.
2. The EEPROM U104 keeps some important data while the unit is powered off.
3. The reset circuit T101 provides a power on reset to the MCU.
4. When any key is pressed, the MCU will send the command to the Base unit by the RF transmitter T4.
5. The MCU U101 generates a signal to the 2.4 Ghz module to select which channel is used.
6. The MCU U101 controls the LCD brightness by the Brightness Control R141-R144.
7. The MCU U101 controls the Volume by the Volume Control circuit T104-T110.
8. The whole Remote unit is powered by a 12V battery. This battery can be charged by a DC Adapter and the charge circuit T210- T214.
9. The Audio power supply is controlled by T207,T208.  
The LCD power supply is controlled by T203 - T206.  
The 5V power supply for the MCU and 2.4 Ghz module is submitted by U202, T201,T202.
10. The MCU monitors the voltage of the battery by the Battery Low detector. If the battery is low, then the MCU will transmit an audio beep to the amplifiers to alert the user. If the battery is too low, then the MCU will cut off the power to protect the battery.

### **C. Charger**

1. The Charger is used to charge the battery while the battery is removed from the Remote Unit.
2. The charge condition indicator LED (LED301) on the Charger is used to indicate the charge condition :
  - Red - Charger has power
  - Flashing Green - Charging
  - Green - Fully charged
3. When the battery is not fully charged, the charge current will be higher. The current flows through T302, R306, D302.
4. When the battery is fully charged, the voltage detector will be triggered and turned off T302. Then a small current will be maintained through R301 and D301.
5. For some reason if the voltage detector is not triggered but the battery is charged for more than 12 hours, then the timer will turn off T302 and maintain a small charge current.