Pin Mappings

STM32-> Toshiba CCD

1 | GND -> Pin 22 - SS
2 | 3V3 -> Pin 1 - V_DD and Pin 2 - V_AD
3 | PA0 -> Pin 3 - ICG
4 | PA2 -> Pin 5 - SH
5 | PA3 -> Pin 21 - OS
6 | PA6 -> Pin 4 - ФM

STM32-> HC-05

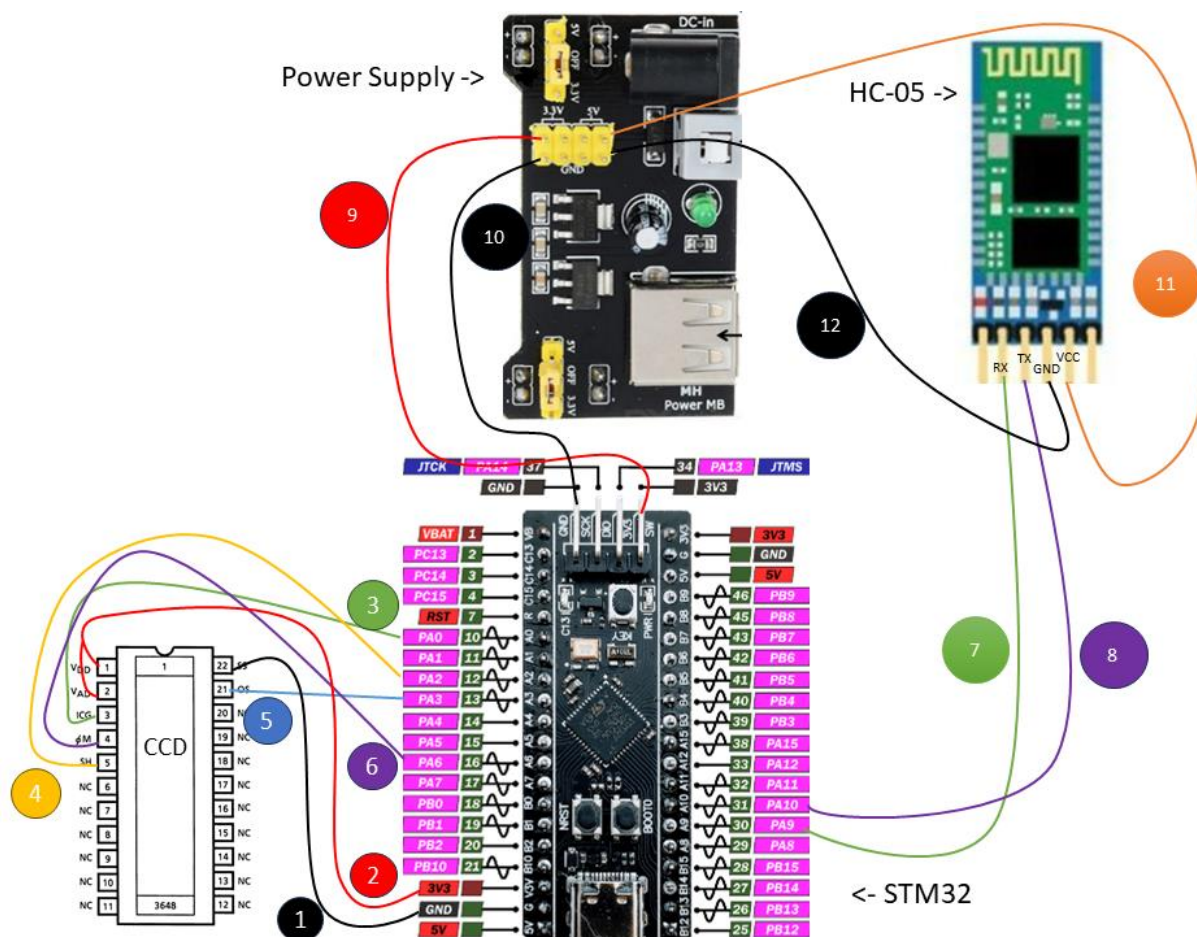7 | PA9 -> RXD
8 | PA10 -> TXD

MB102 Power Supply- > STM32

From MB102's J6 (Top of board) 8-PIN section
9 | Pin 1 - 3.3V -> 3V3 (next to pins 34 and 37)
10 | Pin 2 - GND -> GND (next to pins 34 and 37)

MB102 Power Supply- > HC-05

From MB102's J6 (Top of board) 8-PIN section
11 | Pin 7 - 5V -> VCC
12 | Pin 8 - GND -> GND

References

Toshiba TCD 1304DG Datasheet:

https://www.spectralproducts.com/pdf/ToshibaTCD1304.pdf

HC-05 Schematic:

http://www.hiletgo.com/ProductDetail/2152062.html

Power Supply Datasheet:

https://www.handsontec.com/dataspecs/mb102-ps.pdf

STM32F401 Board Pinout

https://mischianti.org/wp-content/uploads/2022/02/STM32-STM32F4-STM32F401-STM32F401CCU6-pinout-high-resolution.png

STM32 More info

https://mischianti.org/weact-stm32f401ccu6-black-pill-high-resolution-pinout-and-specs/#Datasheet

stm32f401 chip datasheet

https://www.st.com/resource/en/datasheet/stm32f401cb.pdf