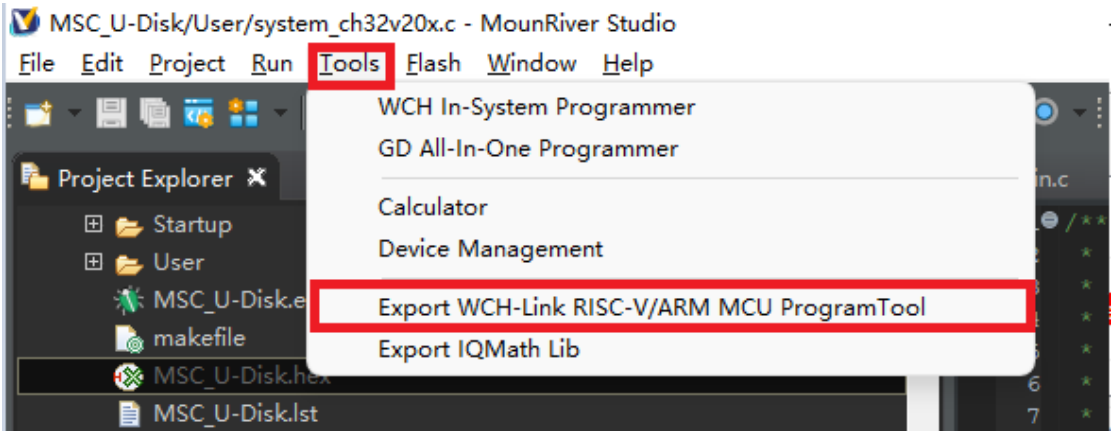
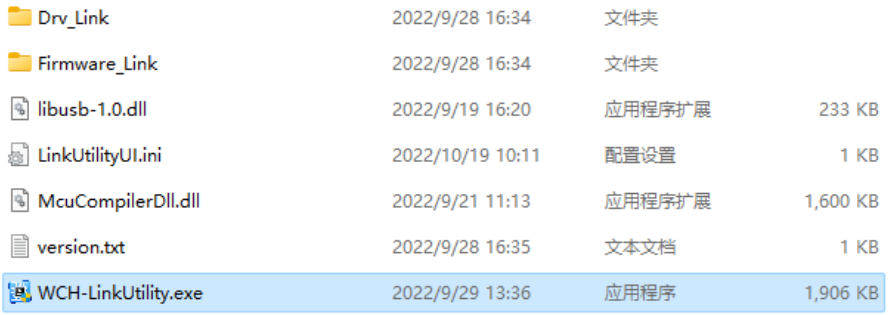
需要使用 WCH-LinkE，在 SWD 接线基础上，将 LinkE 的 RST 引脚与板子的 NRST 引脚相连

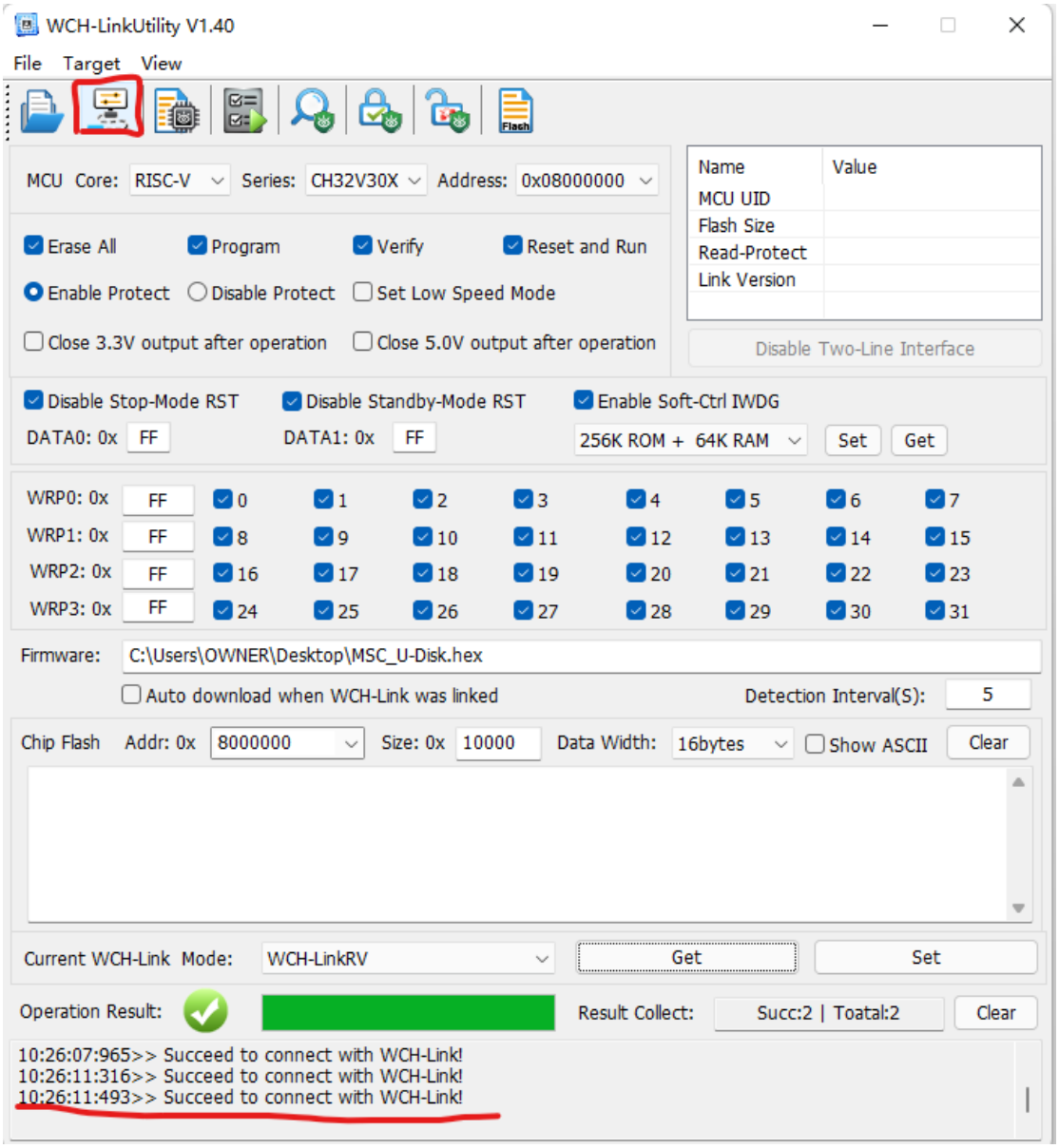
在 MRS 中导出 WCH_MCU_ProgramTool



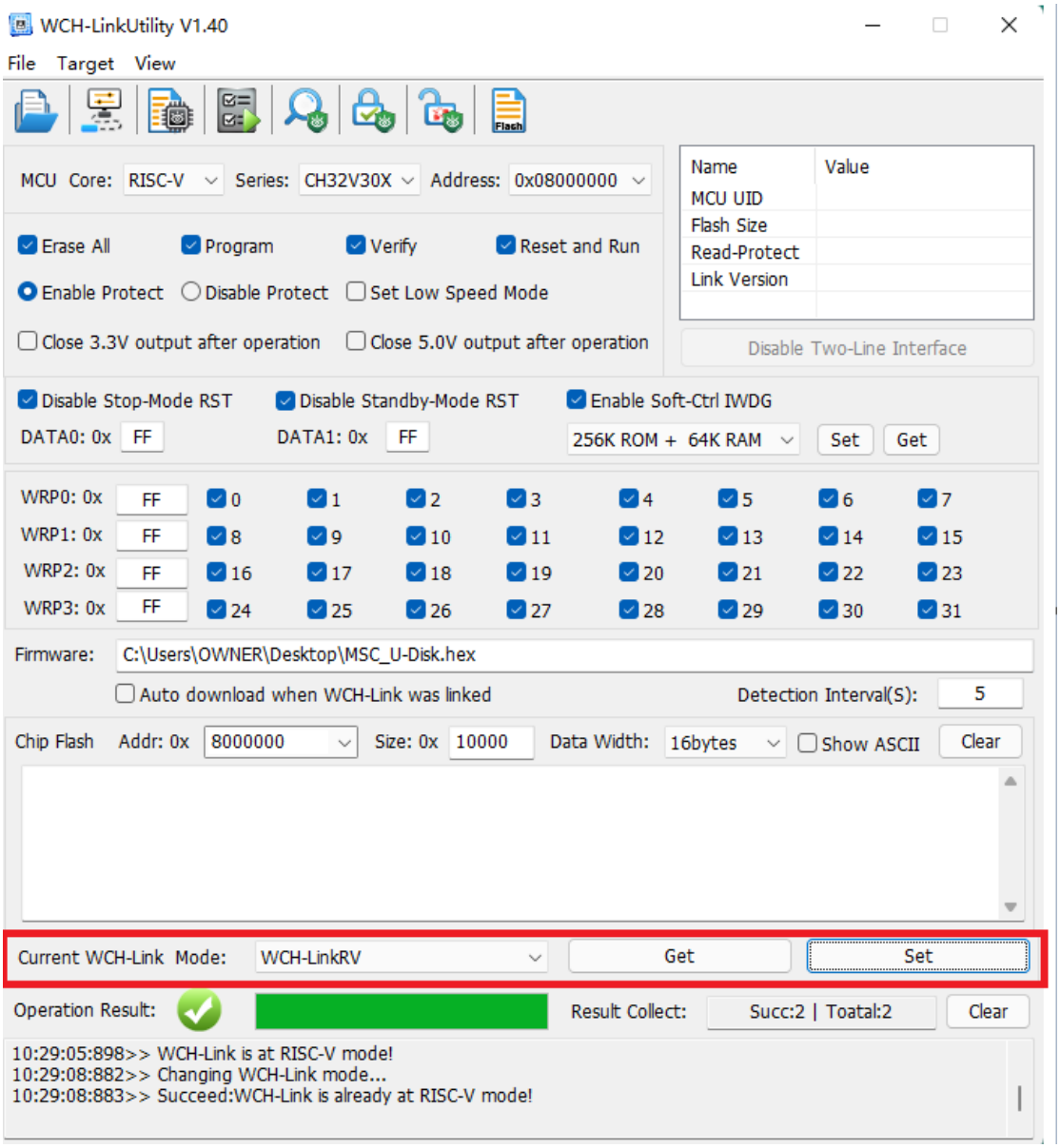
解压后，打开 WCH-LinkUtility



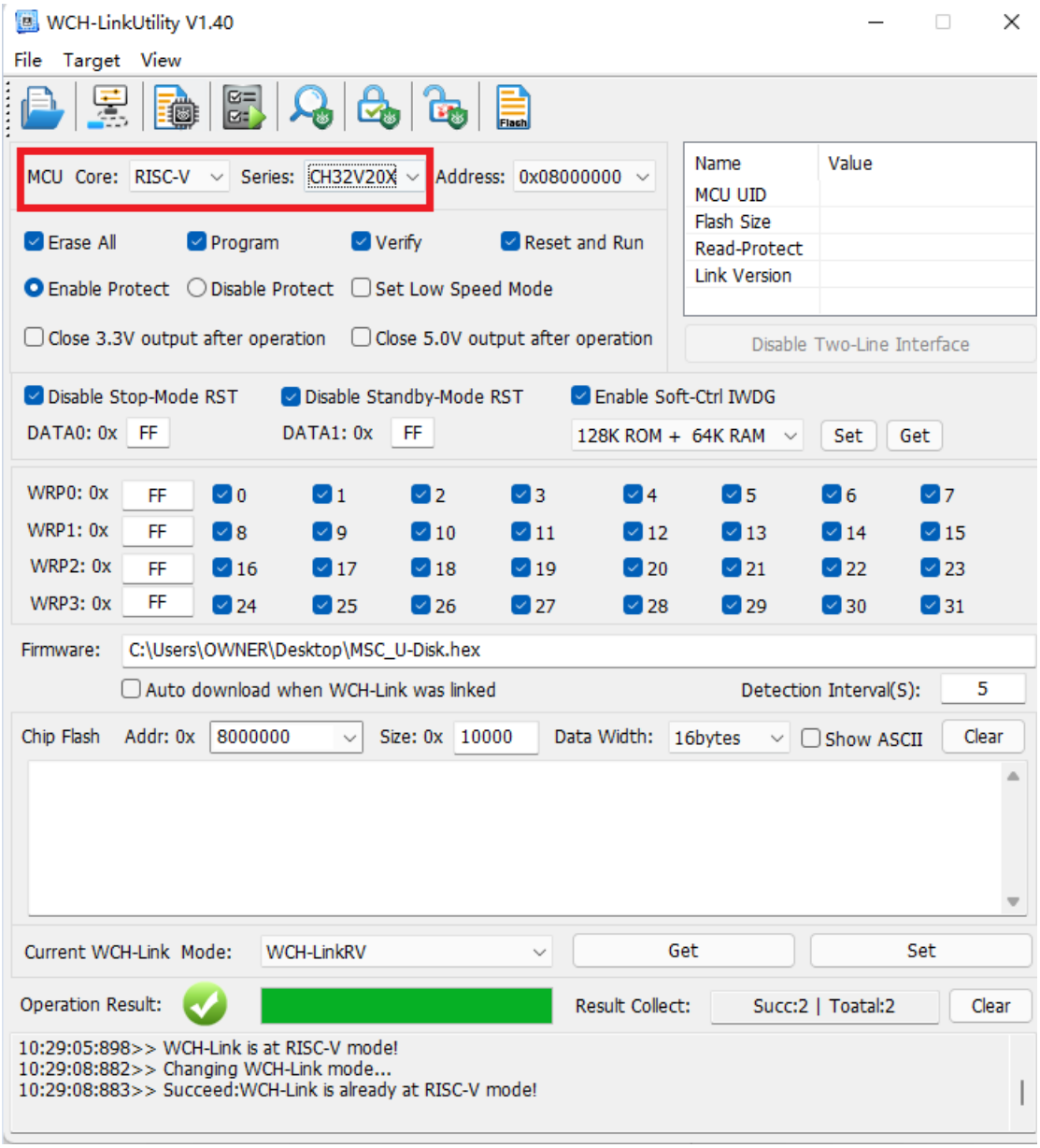
1. 点击 connect wch-link，显示成功连接



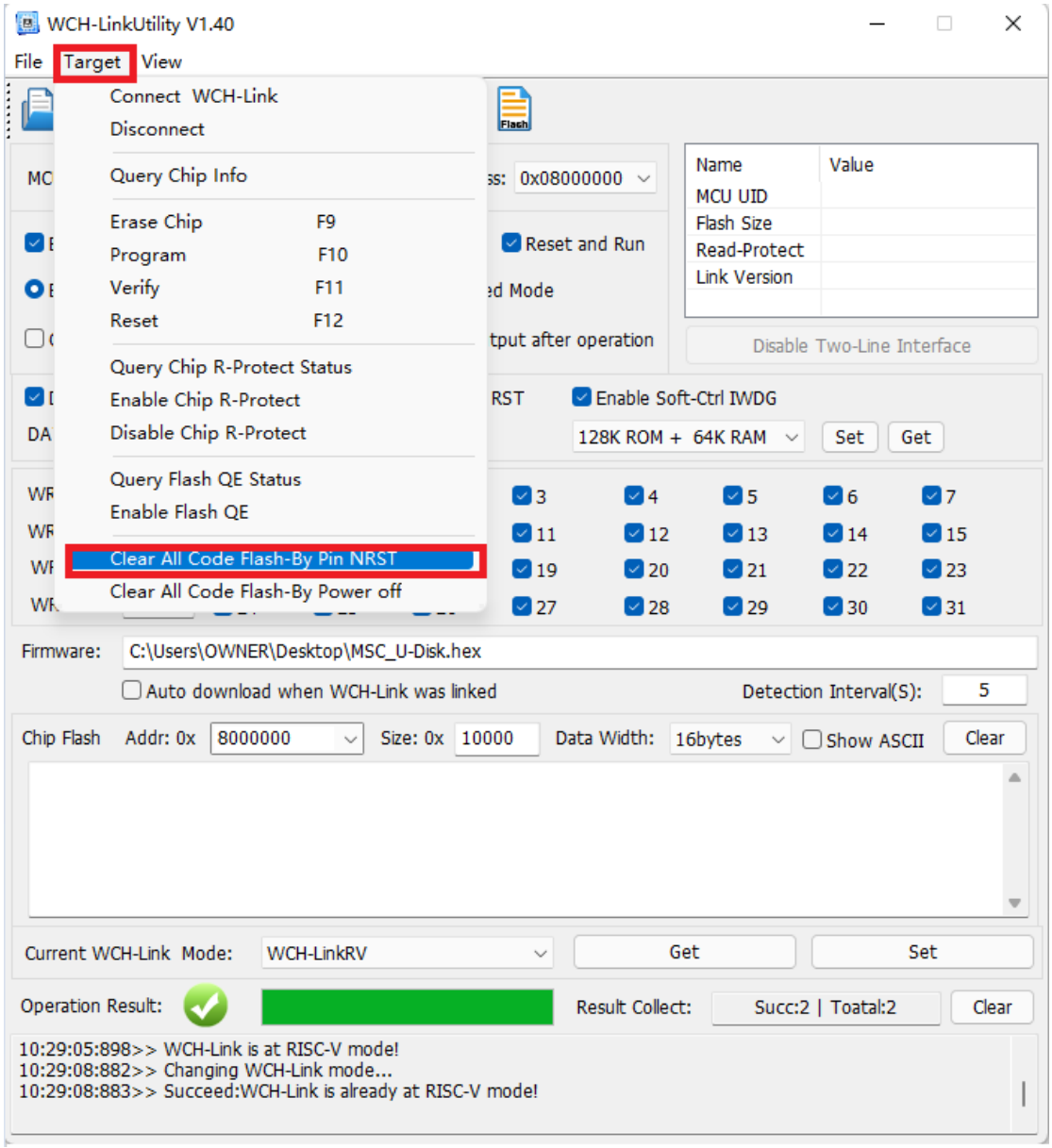
2. 配置 LinkE 为 RSIC-V 模式



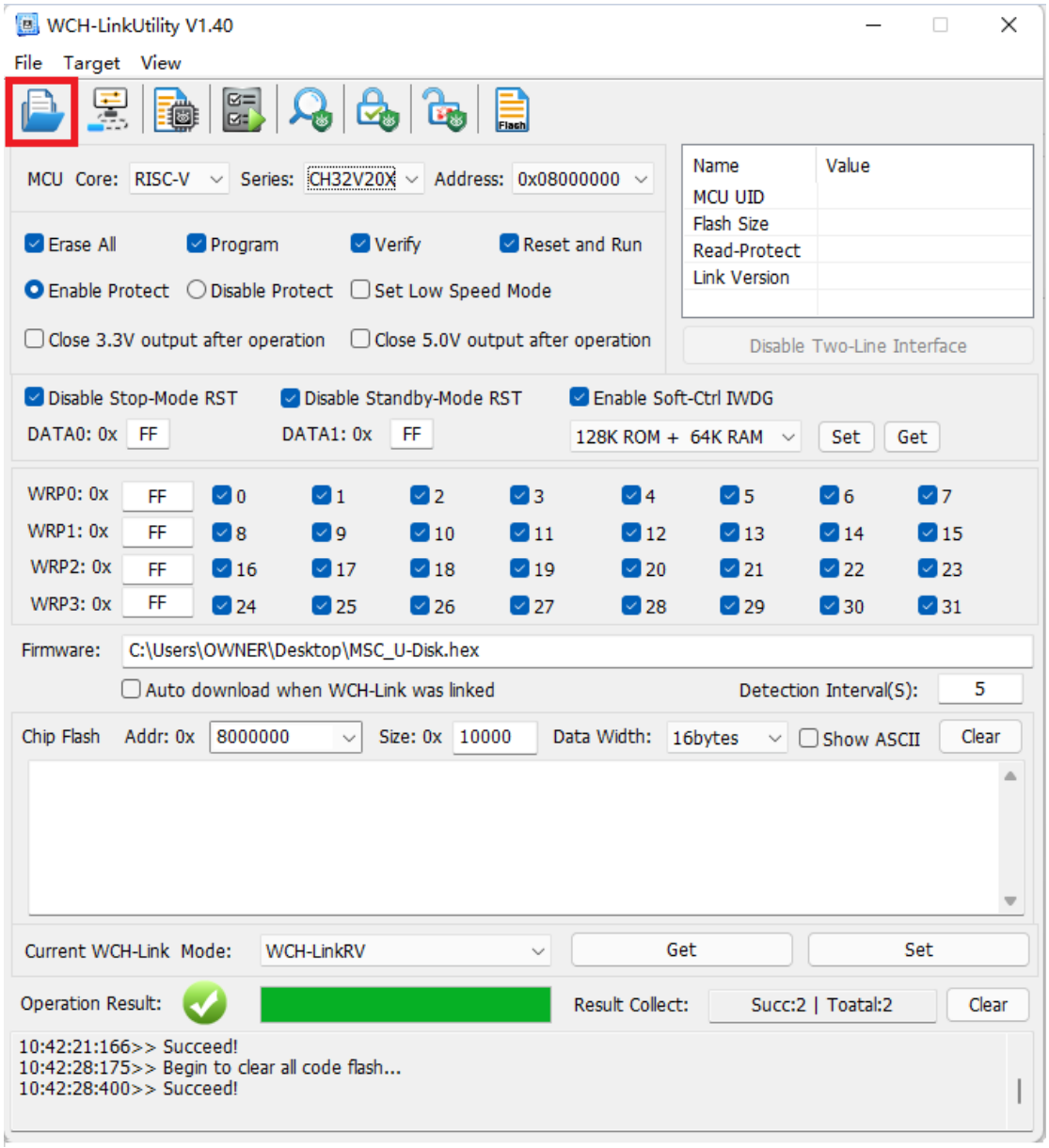
3.选择芯片型号


WCH-LinkUtility V1.40
File Target View
MCU Core: RISC-V Series: CH32V20X Address: 0x08000000
Name Value
MCU UID
Flash Size
Read-Protect
Link Version
Erase All Program Verify Reset and Run
Enable Protect Disable Protect Set Low Speed Mode
Close 3.3V output after operation Close 5.0V output after operation
Disable Two-Line Interface
Disable Stop-Mode RST Disable Standby-Mode RST Enable Soft-Ctrl IWDG
DATA0: 0x FF DATA1: 0x FF 128K ROM + 64K RAM Set Get
WRP0: 0x FF 0 1 2 3 4 5 6 7
WRP1: 0x FF 8 9 10 11 12 13 14 15
WRP2: 0x FF 16 17 18 19 20 21 22 23
WRP3: 0x FF 24 25 26 27 28 29 30 31
Firmware: C:\Users\OWNER\Desktop\MSC_U-Disk.hex
Auto download when WCH-Link was linked Detection Interval(S): 5
Chip Flash Addr: 0x 8000000 Size: 0x 10000 Data Width: 16bytes Show ASCII Clear
Current WCH-Link Mode: WCH-LinkRV Get Set
Operation Result: Result Collect: Succ:2 | Toatal:2 Clear
10:29:05:898>> WCH-Link is at RISC-V mode!
10:29:08:882>> Changing WCH-Link mode...
10:29:08:883>> Succeed:WCH-Link is already at RISC-V mode!

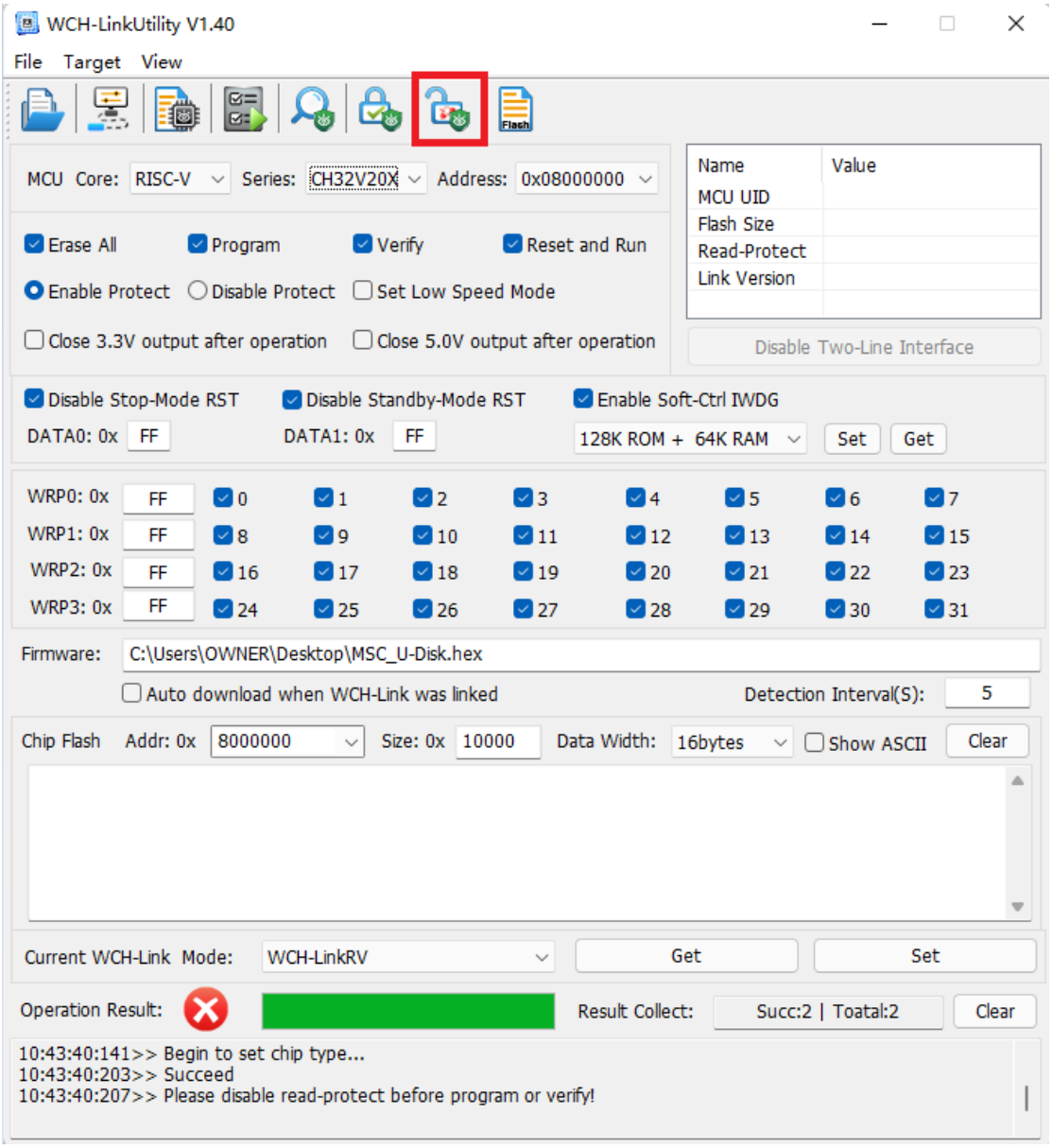
4. 当 SWD 功能被占用时，使用 LinkE 擦除 flash



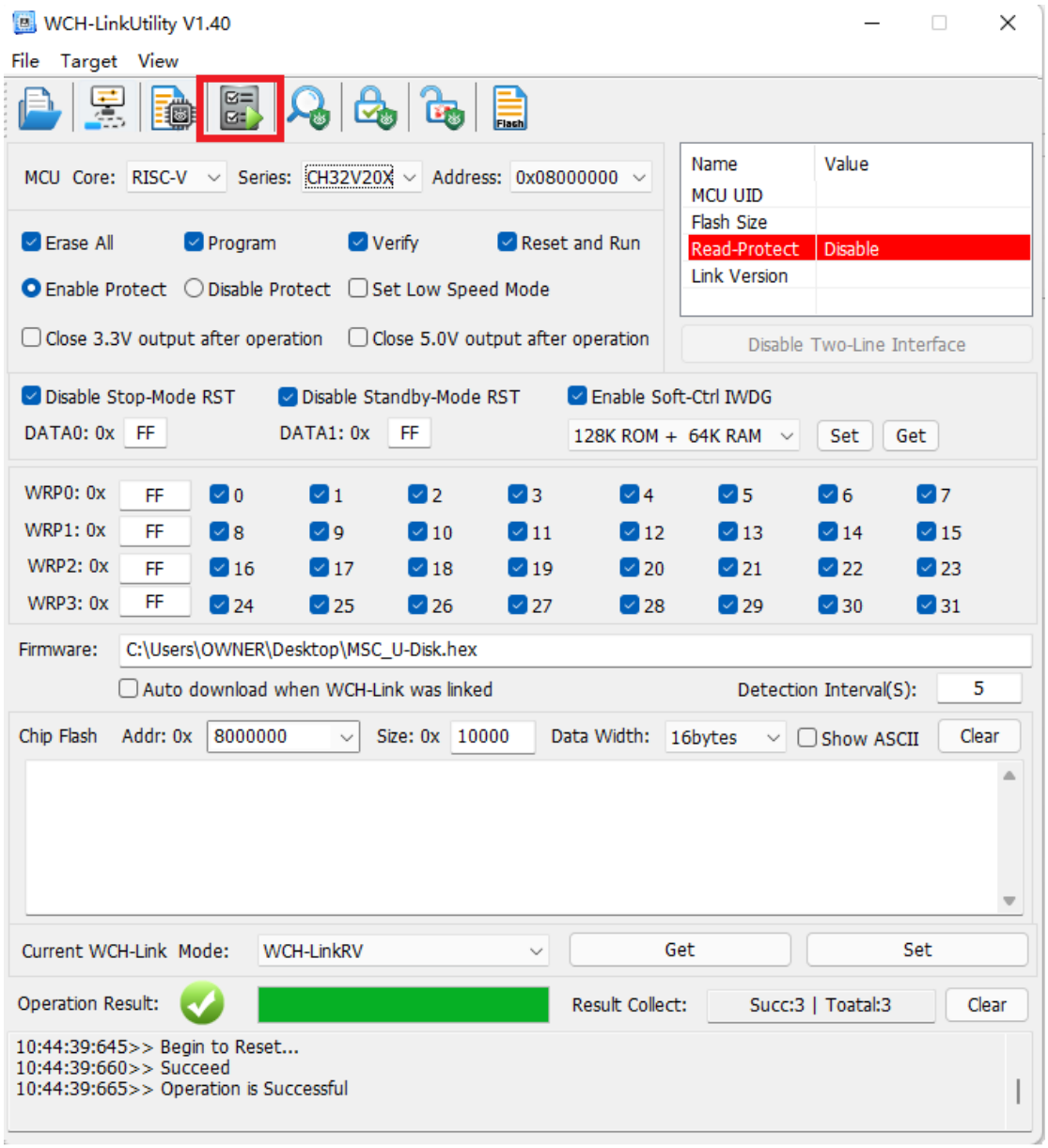
5. 选择 Hex 或 Bin 文件



6. 解除读保护


WCH-LinkUtility V1.40
File Target View
MCU Core: RISC-V Series: CH32V20X Address: 0x08000000
Erase All Program Verify Reset and Run
Enable Protect Disable Protect Set Low Speed Mode
Close 3.3V output after operation Close 5.0V output after operation
Name Value
MCU UID
Flash Size
Read-Protect
Link Version
Disable Two-Line Interface
Disable Stop-Mode RST Disable Standby-Mode RST Enable Soft-Ctrl IWDG
DATA0: 0x FF DATA1: 0x FF 128K ROM + 64K RAM Set Get
WRP0: 0x FF 0 1 2 3 4 5 6 7
WRP1: 0x FF 8 9 10 11 12 13 14 15
WRP2: 0x FF 16 17 18 19 20 21 22 23
WRP3: 0x FF 24 25 26 27 28 29 30 31
Firmware: C:\Users\OWNER\Desktop\MSC_U-Disk.hex
Auto download when WCH-Link was linked Detection Interval(S): 5
Chip Flash Addr: 0x 8000000 Size: 0x 10000 Data Width: 16bytes Show ASCII Clear
Current WCH-Link Mode: WCH-LinkRV Get Set
Operation Result: Result Collect: Succ:2 | Toatal:2 Clear
10:43:40:141>> Begin to set chip type...
10:43:40:203>> Succeed
10:43:40:207>> Please disable read-protect before program or verify!

7. 下载程序


WCH-LinkUtility V1.40
File Target View
MCU Core: RISC-V Series: CH32V20X Address: 0x08000000
Erase All Program Verify Reset and Run
Enable Protect Disable Protect Set Low Speed Mode
Close 3.3V output after operation Close 5.0V output after operation
Name Value
MCU UID
Flash Size
Read-Protect Disable
Link Version
Disable Two-Line Interface
Disable Stop-Mode RST Disable Standby-Mode RST Enable Soft-Ctrl IWDG
DATA0: 0x FF DATA1: 0x FF 128K ROM + 64K RAM Set Get
WRP0: 0x FF 0 1 2 3 4 5 6 7
WRP1: 0x FF 8 9 10 11 12 13 14 15
WRP2: 0x FF 16 17 18 19 20 21 22 23
WRP3: 0x FF 24 25 26 27 28 29 30 31
Firmware: C:\Users\OWNER\Desktop\MSC_U-Disk.hex
Auto download when WCH-Link was linked Detection Interval(S): 5
Chip Flash Addr: 0x 8000000 Size: 0x 10000 Data Width: 16bytes Show ASCII Clear
Current WCH-Link Mode: WCH-LinkRV Get Set
Operation Result: Result Collect: Succ:3 | Toatal:3 Clear
10:44:39:645>> Begin to Reset...
10:44:39:660>> Succeed
10:44:39:665>> Operation is Successful