Joy of innovation
nuvoTon

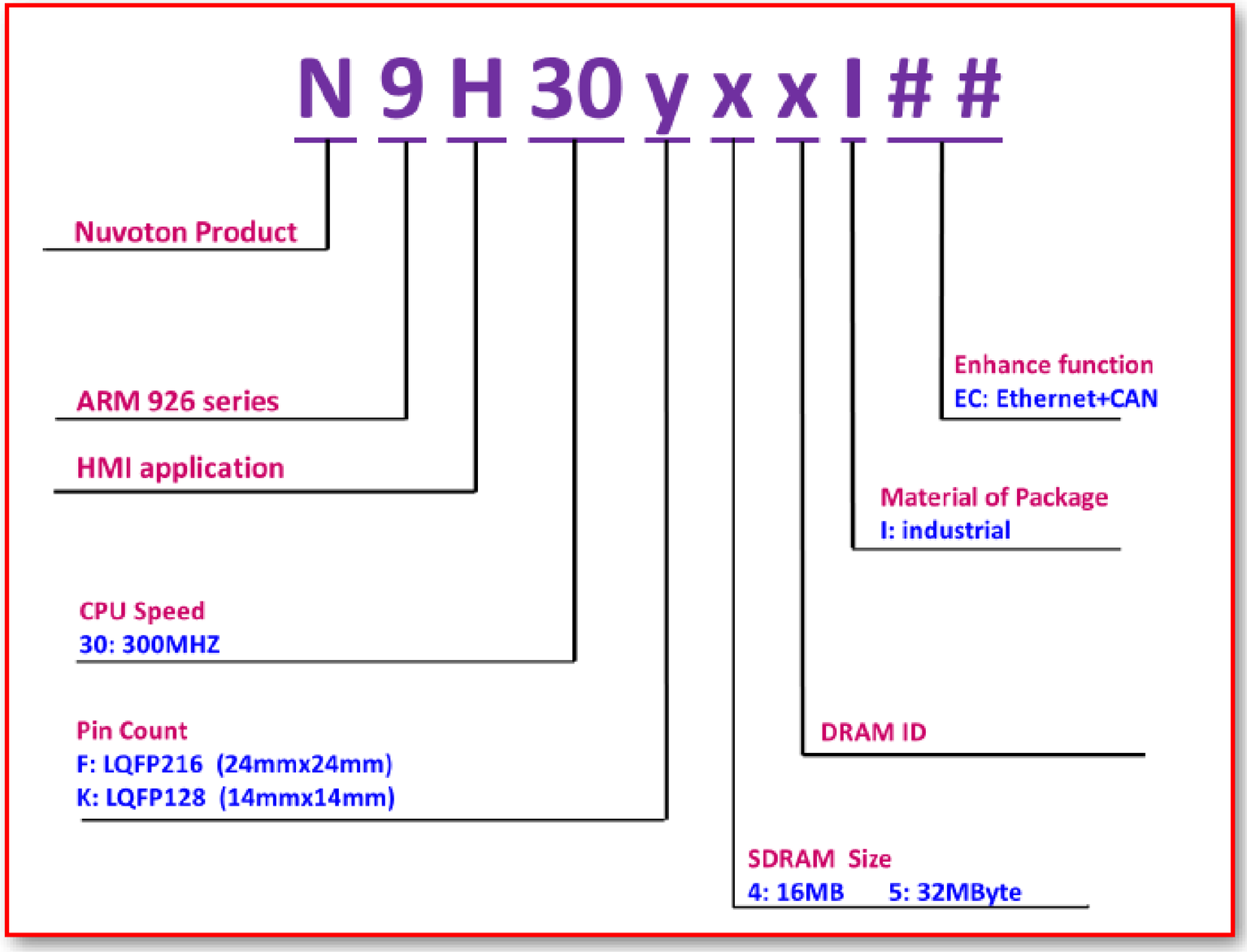
Nuvoton emWin HMI Introduction

www.nuvoton.com

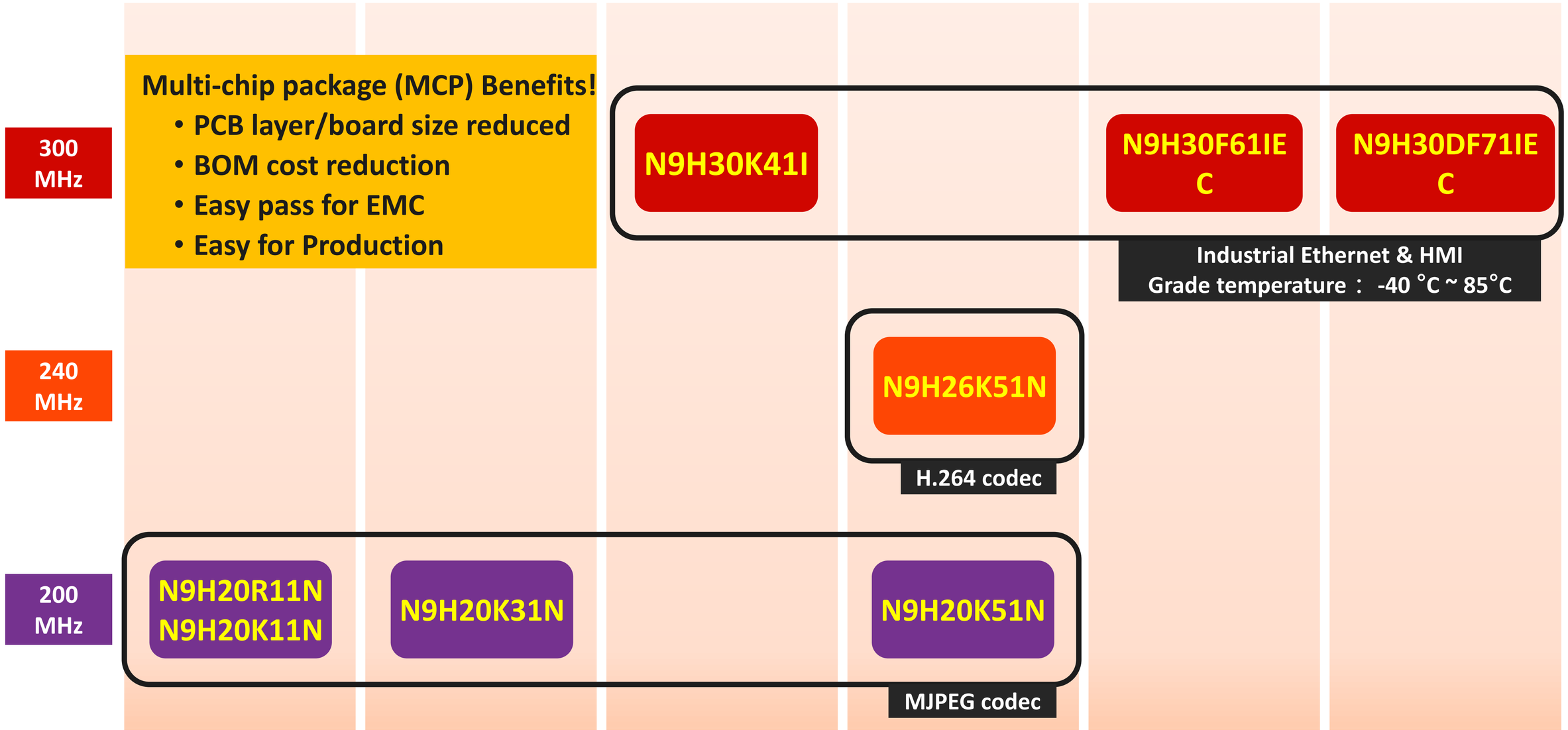
Agenda

- What is N9H30
- Burn code

N9H30 Series Part Number Naming



Product Classification



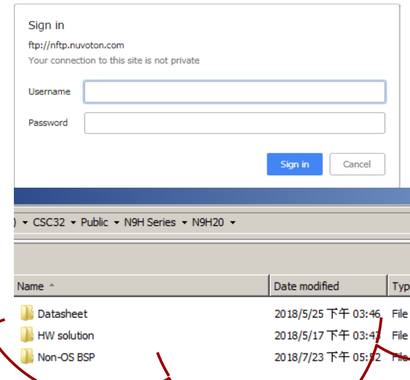
N9H30 Series Comparison

PartNo	N9H30K41I	N9H30F61IEC	N9H30F71IEC
CPU Clock	300MHz	300MHz	300MHz
DRAM Size	16MB	64MB	128MB
LCM color bit	RGB 16-bit	RGB 24-bit	RGB 24-bit
Interface	i80 mode	i80 mode	i80 mode
Display Res.	800x480~1024x768	800x480~1024x768	800x480~1024x768
H/W 2D Graphics	V	V	V
Video Codec	MJPEG	MJPEG	MJPEG
USB 2.0 Device HS	1	1	1
USB 2.0 HOST HS	2	2	2
UART	9	11	11
SPI	2	2	2
I2C	2	2	2
Touch ADC	V	V	V
Audio	I2S	I2S	I2S
SD Card/eMMC	V	V	V
NAND	V	V	V
CAN	-	V	V
Ethernet	-	V	V
RTC	V	V	V
Package	LQFP128	LQFP216	LQFP216
Temperature	-40~85	-40~85	-40~85

Development Tool

- **Please get the FTP account and password first**
- **The FTP data base included…**
  - Hardware reference design schematic
  - Datasheet / TRM/ Application Note
  - Non-OS BSP (Keil Compiler)/ Linux BSP (GCC Compiler)
  - User menu /Programming Guide
  - Writer Tool (utility)
    - NuWriter

ftp://nftp.nuvoton.com/



Joy of innovation
nuvoTon

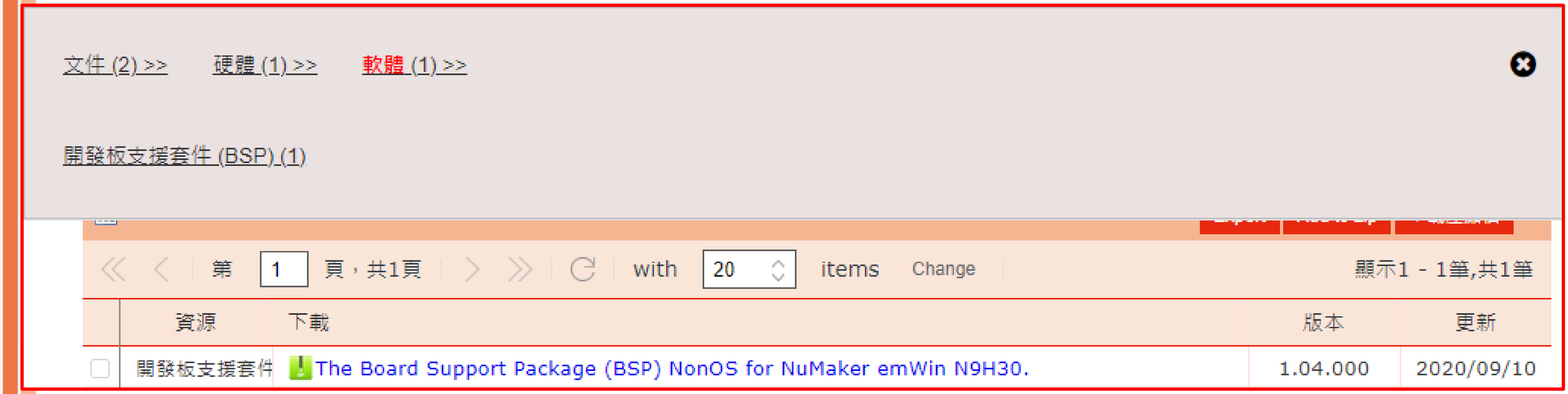
Burn Code

Agenda

- Resource Link
- Burn to N9H30
- Q&A

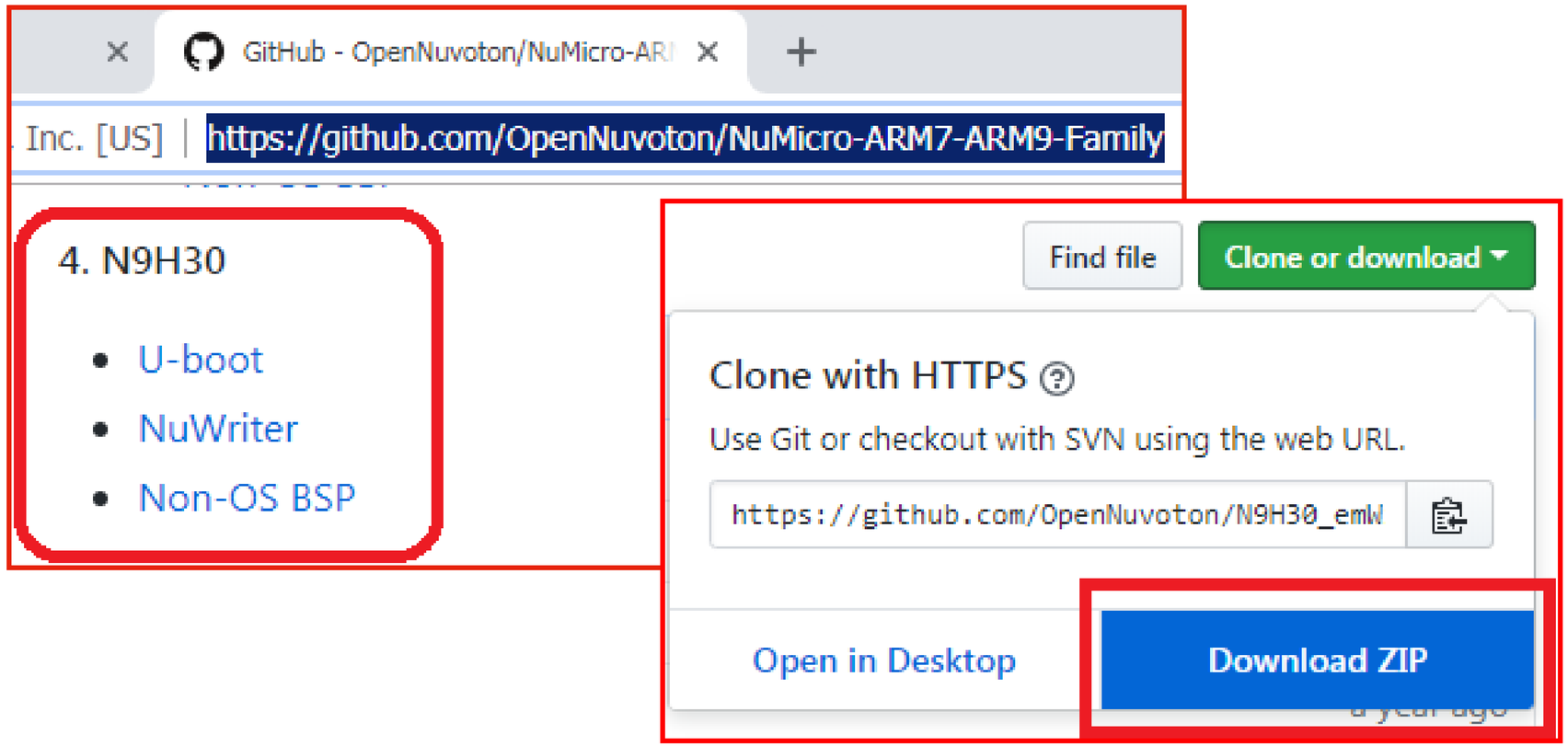
Resource Link - Website

- **Nuvoton**
  - https://www.nuvoton.com/products/gui-solution/gui-platform/numaker-emwin-n9h30/?group=Software&tab=2



Resource Link - Git Hub

- **OpenNuvoton**
  - https://github.com/OpenNuvoton/NuMicro-ARM7-ARM9-Family



Resource Link - Website v.s Git Hub

- **Update frequency**
  - Website: occasionally
  - Git Hub: constantly
- **Code Visibility**
  - Website: zip (e. g., N9H30_emWin_Non-OS_BSP_v1.04.000.zip)
  - Git Hub: viewable

```
230   WM_HWIN CreateFramewin(void) {
231     WM_HWIN hWin;
232
233     hWin = GUI_CreateDialogBox(_aDialogCreate, GUI_COUNTOF(_aDialogCreate), _cbDialog, WM_HBKWIN, 0, 0);
234     return hWin;
235   }
```

Resource Link - Website v.s Git Hub

- **Extra materials**
  - Website: contain Windows tools, pre-built binary images and documents
  - Git Hub: none

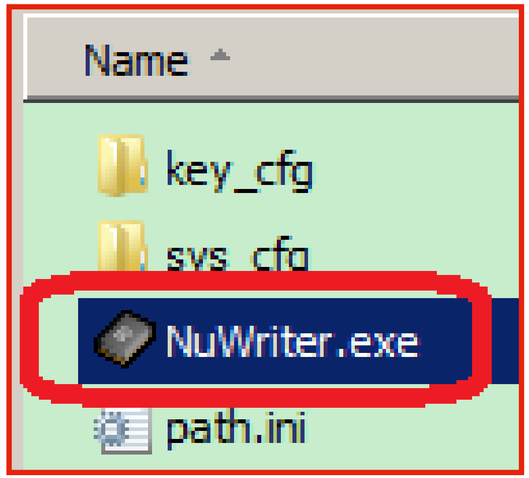
Burn code to N9H30

Burn to N9H30

- **Step 1**
  - Switch to USB Boot and execute NuWriter
- **Step 2**
  - Connect USB cable between device and PC host
- **Step 3**
  - Operate NuWriter

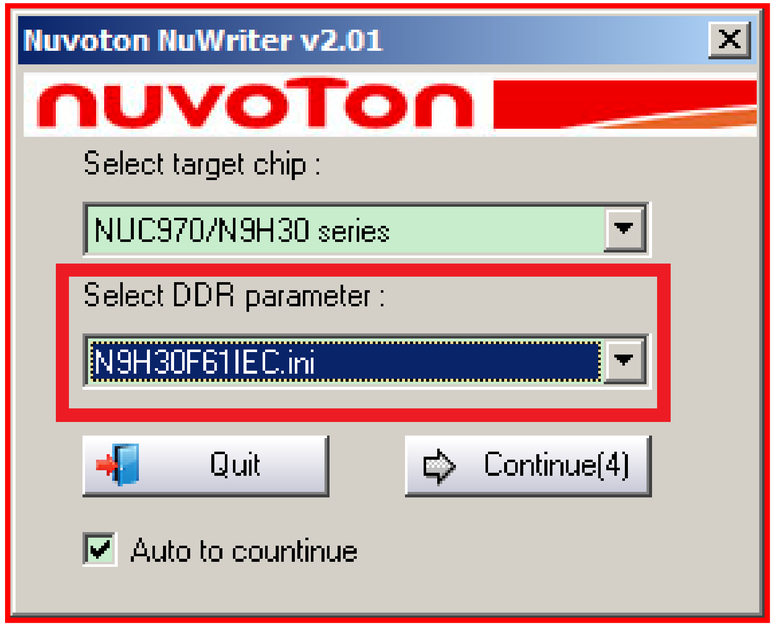
Burn to N9H30

- **Windows tool: NuWriter.exe**
- **Path is in C:\N9H30_emWin_Non-OS_BSP_v1.04.000\Tools\NuWriter**



Burn to N9H30

- **64MB ver.**



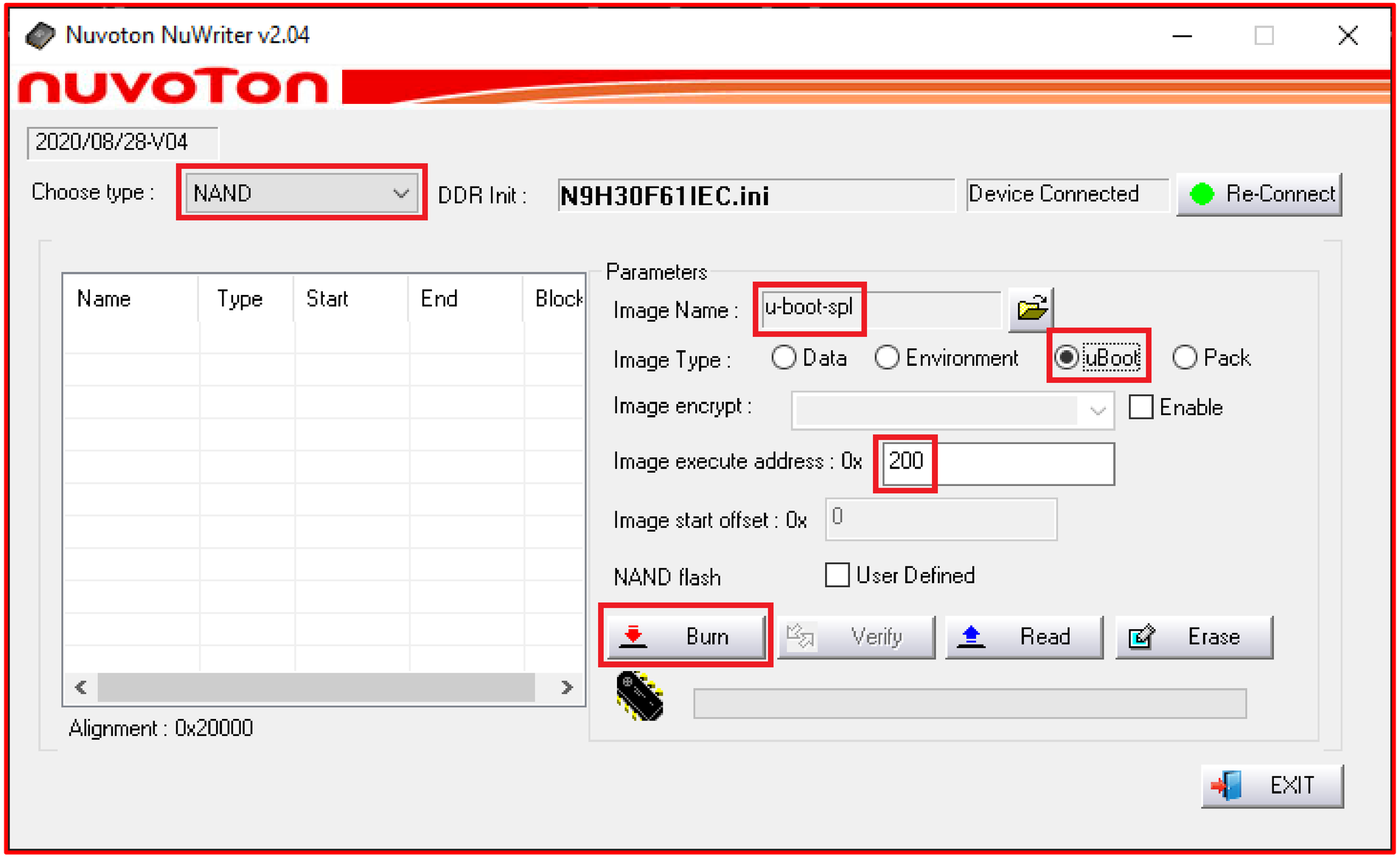
Q&A

- **How to burn NAND?**
- **NuWriter fails?**
  - Check steps again
  - Close / terminate NuWriter and run NuWriter again
  - Only allow one device in the USB connection

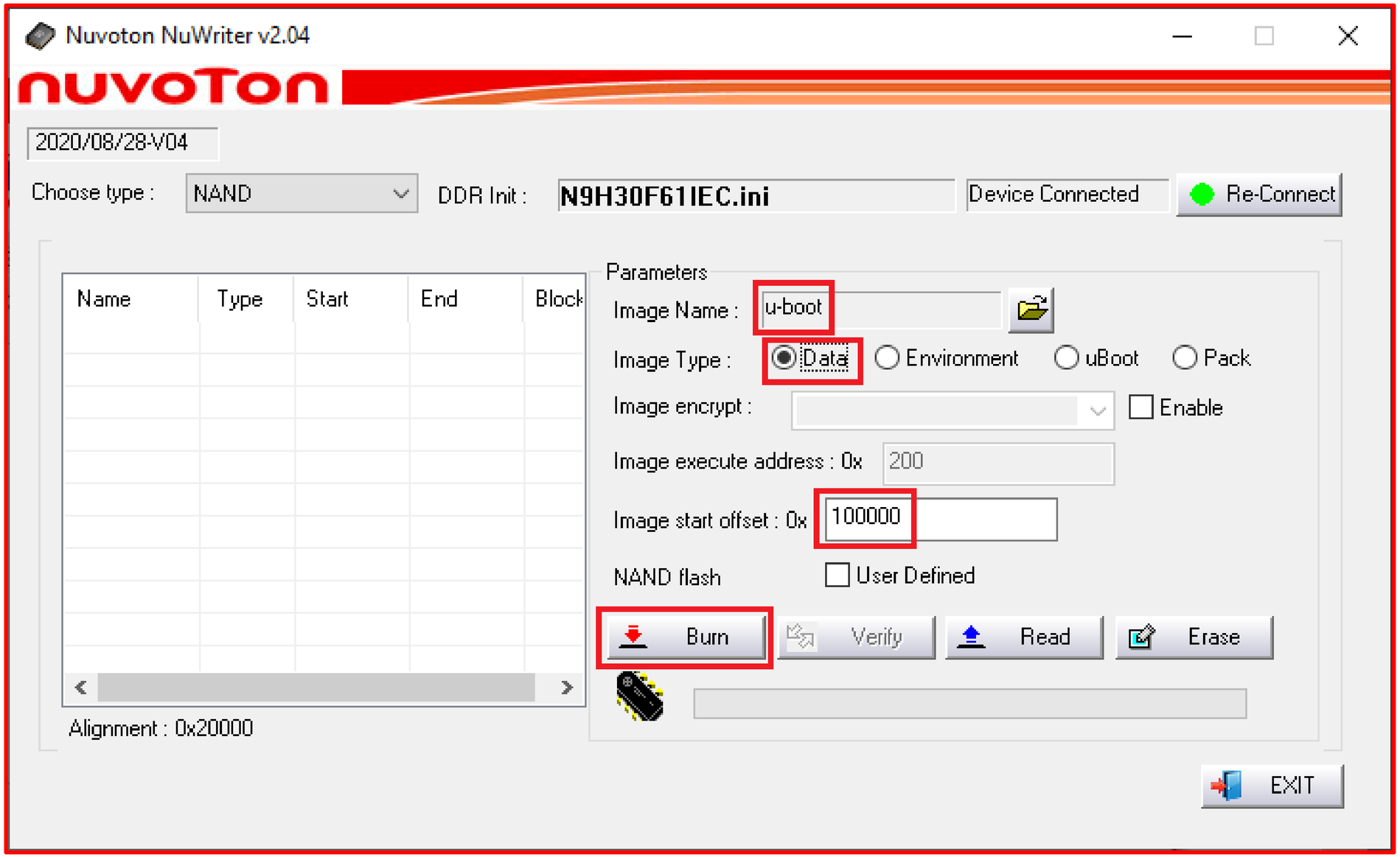
N9H30: Burn NAND flash

- **N9H30: Burn NAND flash**
- **Needs four files**
  - u-boot-spl.bin (C:\N9H30_emWin_Non-OS_BSP_v1.04.000\Loader\NAND)
  - u-boot.bin(C:\N9H30_emWin_Non-OS_BSP_v1.04.000\Loader\NAND)
  - app.bin
  - env.txt

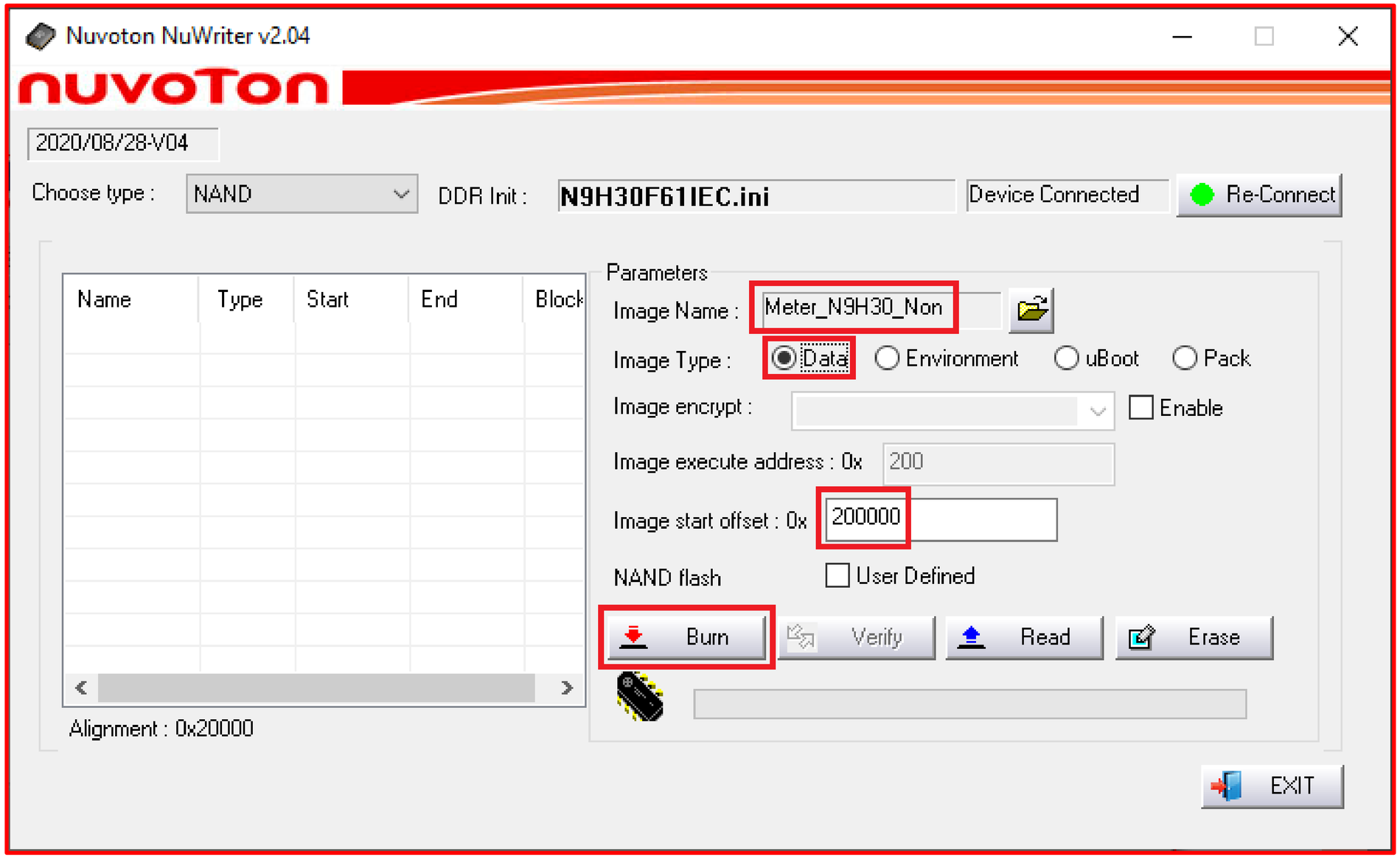
N9H30: Burn u-boot-spl.bin



N9H30: Burn u-boot.bin

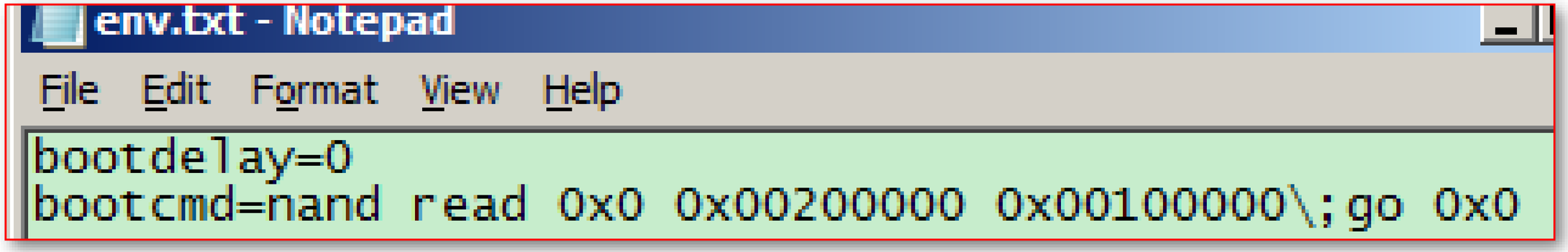


N9H30: Burn Meter_N9H30_NonOS.bin



Before burn env.txt

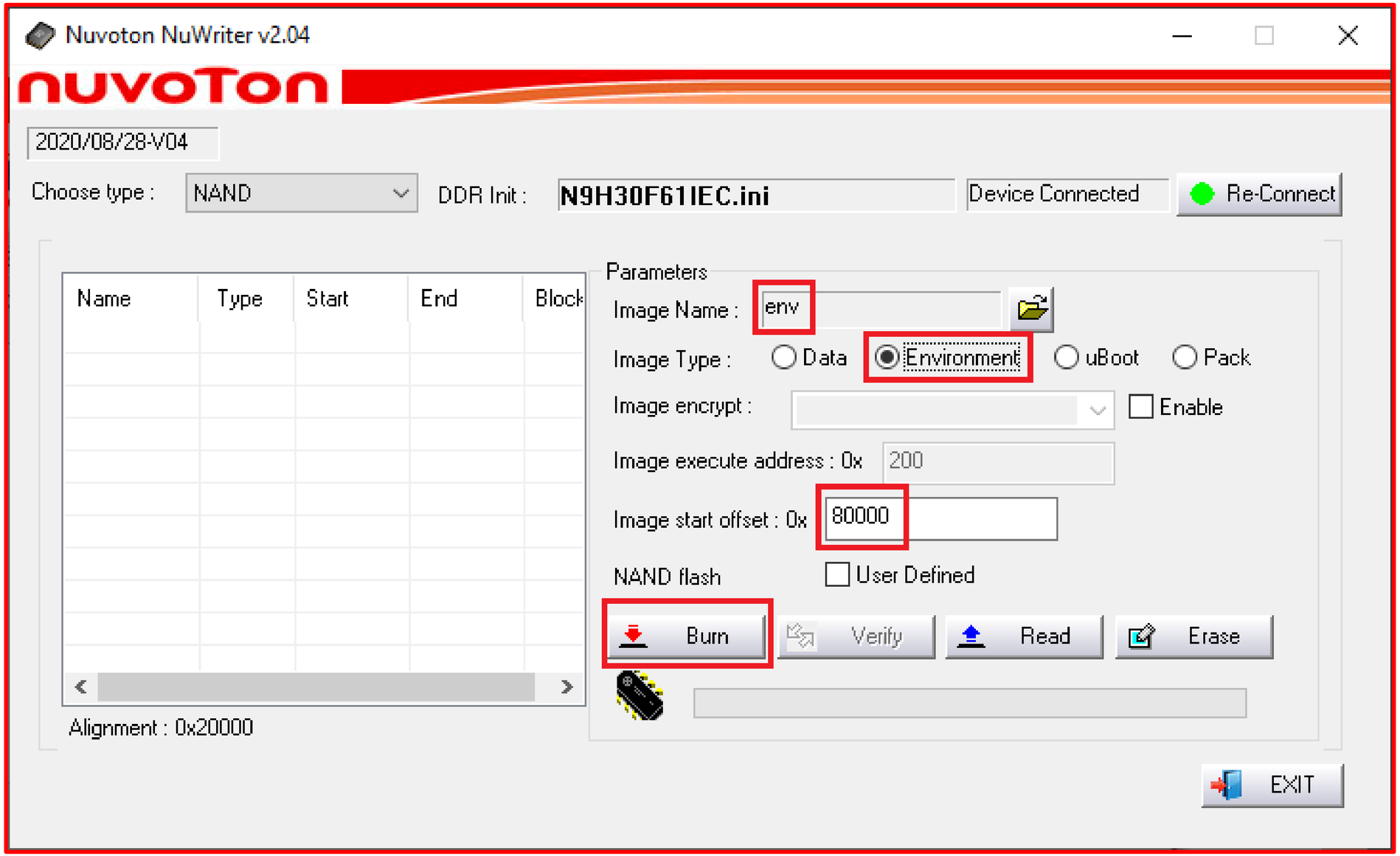
- **Create a env.txt**
- **The content as below**
- **Details descripted at**
  - NUC970 N9H30 NuWriter User Manual EN.pdf
  - NUC970 N9H30 U-Boot v2016_11 User Manual EN.pdf



env.txt

```
bootdelay=0
bootcmd=nand read 0x0 0x00200000 0x00200000\;go 0x0
```

N9H30: Burn env.txt



N9H30: Switch to NAND booting

- Please switch to NAND booting after burning successfully

- Reboot device

For More Information Visit

Official Website **www.nuvoton.com**

Forum

NuForum English
http://forum.nuvoton.com/

牛卧堂 Simplified Chinese
http://www.nuvoton-MCU.com

21ic 中国电子网 .com Simplified Chinese
http://bbs.21ic.com/iclist-187-1.htr

BSP Updates

GitHub
https://github.com/OpenNuvoton

Social Media

facebook
https://www.facebook.com/NuvotonNuMicro/

WeChat
ID: nuvoton_mcu

Online Store

NUVOTON DIRECT Global
https://direct.nuvoton.com/

天猫 TMALL.COM China
http://nuvoton.tmall.com/

Joy of innovation
nuvoTon

Thank you

www.nuvoton.com