**ARM® Cortex®- M**

**32-bit Microcontroller**

**NuMicro® Family**

**ISP Programming Tool**

**Revision History**

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# Revision History

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| **Version** | **Release Date** | **Description** |
| **4.XX** | **2021/04/06** | * Added supported microcontroller: * NuMicro M0 Family: M031G series, N32F030 series and NM18407Y. * NuMicro M23 Family: NUC1262 series. * Added supported new Nu-Link2 USB product ID “0x5203” |
| **4.03** | **2020/12/03** | * Added supported microcontroller: * NuMicro M0 Family: NM1240, M030G, M0A21 and M071 series. * NuMicro M23 Family: M253, M258 and M2354 series. * NuMicro M4 Family: M487KMCAN, M471 and M479 series. * NuMicro 8051 Family: ML56 series. * Added SPI programming options. * Added command line function for HID and UART interfaces. |
| **3.05** | **2019/10/16** | * Supported TF5100 for Motor MCU. * Supported M480LD for NuMicro M4 series. * Supported M252 for NuMicro M23 series. * Supported NUC1311 for NuMicro M0 series. * Supported M031G&I for NuMicro M0 series. * Modified DialogConfiguration\_I94000 CONFIG1 reserved bit to 0. * Added lost NUC029NAN flash information in FlashInfo.cpp. * Supported M261 for NuMicro M23 series. * Supported Nu-Link2 ISP-Bridge functionality. * Updated chip database version from V1.0.0.9 to V1.0.0.35 for NuVoice series. * Removed Visual Studio 2008 ISP project file.   The ISPTool samples repository is available on GitLab.  <https://gitlab.com/OpenNuvoton/nuvoton-tools/ISPTool> |
| **2.06** | **2019/03/13** | * Added support for NM1230 series. * Added support for NUC029xGE series. * Added support for M031 series. * Added support for ML51 series. * Added support for NUC1261 series. * Added support for MS51 series. * Added 8051-1T series ISP sample codes. |
| **2.05** | **2018/09/05** | * Added support for M4521 series. * Added M480 USBD High-Speed ISP Sample. * Added support for NUC2201 series. * Added support for NUC029xDE series. * Added support for NUC029xEE series. * Removed entry pin restriction for ISP\_USCI\_UART samples. (NM1120 and Mini57) * Added support for M2351 series. |
| **2.04** | **2018/03/29** | * Added support for M480 series. * Fixed NUC123 external clock bring up issue. * Fixed Mini58 reset failed issue caused by external clock stable bit. * Supplied Visual Studio 2008 ISP project. * Updated User Configuration Options for Nano100AN, Nano103, NUC123 and M051 series. * Added an option to reset and run code in APROM. * Updated NUC100BSP and NUC200BSP to fix USBD driver Zero Flag issue. * Added support for NuVoice chips include I91000, I91200, I94100, ISD9100 and N575 series. * Added support for NM1200\_NM1100 series.   The ISPTool samples repository is available on GitHub and GITEE.  Please check the following link to get the latest update.  <https://github.com/OpenNuvoton/ISPTool>  <https://gitee.com/OpenNuvoton/ISPTool> |
| **2.03** | **2017/06/21** | * Updated Mini51BSP, Mini55BSP, Mini58BSP, Nano100A\_BSP, Nano100B\_BSP, Nano103BSP and NUC472\_442BSP drivers to fix known issues. * Added support for M0564, NUC126 and NUC121 series. * Added backward capability for legacy ISP firmware. * Added support for NUC505 IAP function in MTP mode. * Added an option to specify Data Flash address for 8051 1T series. * Fixed the USB surprise removal issue. * Added support for Mini57 and Nano102\_112 series. |
| **2.00** | **2016/09/01** | * Updated all BSP versions to fix known issue. * Fixed bug in Data Flash programming error for all series. * Fixed bug in CONFIG programming for NUC472\_442 series. * Changed USB PID to 0x3F00. * Supported all M0, M4 and 8051-1T series in ISP Tool. |
| **1.47** | **2015/07/28** | * Supported PC tool and Firmware source code in “(1) Application Program” and “(2) Nuvoton Standard ISP Code” folder. * Supported M0519, NM1500, NM1200, Mini58 and NUC123AE series. * Supported NUC505 IAP function (non-FMC type of ISP). * Updated NUC029xAN firmware to use internal clock. * Fixed the firmware bug “jumping to APROM failed when ISP time-out happened” in NUC472 and ISD9100 series. * Fixed the bug in ISP PC tool for incorrect NUC120LC1DN flash size. * Supported NUC505 I2C Master and I2C Slave ISP firmware. * Supported NUC029xAN UART Master ISP firmware. |
| **1.46** | **2014/11/28** | * Supported NUC472 ISP connected via Ethernet interface. * Supported Mini51X, ISD9100, M45xD and M45xC series. |
| **1.45.1** | **2014/07/31** | * Supported NUC131 and M0518 series. |
| **1.45** | **2014/06/10** | * Added M451 Series and NUC029 support. * Added the form of the hardware connection for COM port or USB interface. * Modified description for Hardware Connection for ‘ISP through COM Port or USB’. |
| **1.44** | **2014/01/20** | * Added Mini51BN, MINI51DE, M051CN, M051DE, NUC200, and Nano112 support. * Added the User Configuration form for M051AN/BN, M051CN/DE, MINI51AN, MINI51BN, MINI51DE, Nano100, Nano112, NUC100, NUC122, NUC123, and NUC200 series. * Updated the project file format to include APROM and Data Flash images file body, not only file path. * Removed “Erase Flag”, which causes Data Flash be erased. Also, updated all ISP firmware to version 2.4. * Provided Nano112 ISP firmware. |
| **1.42.1** | **2012/08/28** | * Added NUC123 support. |
| **1.41.3** | **2011/11/17** | * Modified Data Flash base address error for Nano100 and Mini51 series. |
| **1.41.2** | **2011/08/29** | * Supported Nano100 and Mini51 series. |
| **1.41** | **2011/04/29** | * Supported ISP project file. |
| **1.40** | **2011/03/21** | * Updated Nuvoton Standard ISP Code to v2.3, which Integrated the ‘ISP through COM port’ and ‘ISP through USB’ function for NUC120/140/101, and improved the operation stability. * Added ‘Erase Flag’ for erasing control of Data Flash during ISP operation. * Fixed some application program bugs. |
| **1.32** | **2010/12/08** | * Preliminary version. |

# Supported Microcontroller - NuMicro® Family

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| **Product Line** | **Series** | **Part Number** |
| **NuMicro® 8051 Family** | **MS51** | MS51BA9AE, MS51DA9AE, MS51XB9AE, MS51XB9BE, MS51FB9AE, MS51FC0AE, MS51XC0BE, MS51EC0AE, MS51TC0AE, MS51PC0AE, MS51EB0AE |
| **ML51** | ML51BB9AE, ML51DB9AE, ML51FB9AE, ML51OB9AE, ML51XB9AE, ML51EB9AE, ML51UB9AE, ML51PB9AE, ML51TB9AE, ML51EC0AE, ML51UC0AE, ML51PC0AE, ML51TC0AE, ML51TD1AE, ML51LD1AE, ML51SD1AE, ML54MD1AE, ML54LD1AE, ML54SD1AE, ML56MD1AE, ML56LD1AE, ML56SD1AE |
| **N76E003** | N76E003AT20, N76E003AS20, N76E003AQ20, N76E003BQ20, N76E003CQ20 |
| **N76E616** | N76E616AL48, N76E616AF44, N76E616AM44 |
| **N76E885** | N76E885AT28, N76E885AT20, N76E885AQ20, N76E885AS28 |
| **NuMicro® M0 Family** | **Mini51** | MINI51LAN, MINI51ZAN, MINI51TAN, MINI52LAN, MINI52ZAN, MINI52TAN, MINI54LAN, MINI54ZAN, MINI54TAN, MINI51LDE, MINI51QDE, MINI51ZDE, MINI51TDE, MINI51FDE, MINI52LDE, MINI52QDE, MINI52ZDE, MINI52TDE, MINI52FDE, MINI54LDE, MINI54QDE, MINI54ZDE, MINI54TDE, MINI54FDE, MINI54FHC |
| **Mini55** | MINI55LDE, MINI55ZDE, MINI55TDE |
| **Mini57** | MINI57EDE, MINI57FDE, MINI57XDE, MINI57TDE |
| **Mini58** | MINI58FDE, MINI58LDE, MINI58QDE, MINI58TDE, MINI58ZDE |
| **M030G** | M030GGD1AE, M030GTD1AE, M030GGC1AE, M030GTC1AE M030GGC0AE, M030GTC0AE |
| **M031G** | M031GGD2AE, M031GTD2AE, M031GGC2AE, M031GTC2AE M031GGC1AE, M031GTC1AE |
| **M030** | M030TD2AE, M030LD2AE, M030FD2AE |
| **M031** | M031BTYD2AN, M031BTYE3AN, M031BTY, M031LE3AE, M031SE3AE, M031TE3AE, M031TD2AE, M031LD2AE, M031LC2AE, M031SD2AE, M031SC2AE, M031FC1AE, M031EC1AE, M031TC1AE, M031FB0AE, M031EB0AE, M031TB0AE, M031SIAAE, M031KIAAE, M031LG8AE, M031SG8AE, M031KG8AE, M031LG6AE, M031SG6AE, M031KG6AE |
| **M032** | M032LE3AE, M032SE3AE, M032SIAAE, M032KIAAE, M032LG8AE, M032SG8AE, M032KG8AE, M032LG6AE, M032SG6AE, M032KG6AE, M032TD2AE, M032LD2AE, M032LC2AE, M032FC1AE, M032EC1AE, M032TC1AE |
| **M051** | M052LAN, M052ZAN, M054LAN, M054ZAN, M058LAN, M058ZAN, M0516LAN, M0516ZAN, M052LBN, M052ZBN, M054LBN, M054ZBN, M058LBN, M058ZBN, M0516LBN, M0516ZBN, M052LDN, M052ZDN, M054LDN, M054ZDN, M058LDN, M058ZDN, M0516LDN, M0516ZDN, M052LDE, M052ZDE, M054LDE, M054ZDE, M058LDE, M058ZDE, M058MDE, M0516LDE, M0516ZDE |
| **M0515** | M0515LDE |
| **M0518** | M0518LD2AE, M0518LC2AE, M0518SD2AE, M0518SC2AE |
| **M0519** | M0519LD3AE, M0519LE3AE, M0519SD3AE, M0519SE3AE, M0519VE3AE |
| **M0564** | M0564LE4AE, M0564LG4AE, M0564SE4AE, M0564SG4AE, M0564VG4AE |
| **M058S** | M058SLAN, M058SZAN, M058SSAN, M058SFAN |
| **M071** | M071MC2AE, M071MD2AE, M071R1D3AE, M071R1E3AE, M071SD3AE, M071SE3AE, M071QE4AE, M071QG4AE, M071VG4AE |
| **M0A21** | M0A21OB1AC, M0A21OC1AC, M0A21EB1AC, M0A21EC1AC, M0A23OC1AC, M0A23EC1AC |
| **NUC029** | NUC029NAN, NUC029LAN, NUC029TAN, NUC029CIG1, NUC029ZAN, NUC029TAE, NUC029FAE, NUC029LDE, NUC029SDE, NUC029MDE, NUC029LEE, NUC029SEE, NUC029LGE, NUC029SGE, NUC029KGE |
| **NUC100** | NUC100LE3AN, NUC100LD3AN, NUC100RE3AN, NUC100RD3AN, NUC100VE3AN, NUC100VD3AN, NUC100VD2AN, NUC100LE3DN, NUC100LD3DN, NUC100LD2DN, NUC100LD1DN, NUC100LC1DN, NUC100RE3DN, NUC100RD3DN, NUC100RD2DN, NUC100RD1DN, NUC100RC1DN, NUC100VE3DN, NUC100VD3DN, NUC100VD2DN, NUC100VE3DE, NUC120LE3AN, NUC120LD3AN, NUC120RE3AN, NUC120RD3AN, NUC120LE3AN, NUC120VE3AN, NUC120VD3AN, NUC120VD2AN, NUC120LE3DN, NUC120LD3DN, NUC120LD2DN, NUC120LD1DN, NUC120LC1DN, NUC120VE3DN, NUC120VD3DN, NUC120VD2DN, NUC120RE3DN, NUC120RD3DN, NUC120RD2DN, NUC120RD1DN, NUC120RC1DN, NUC120LD2DE |
| **NUC121** | NUC121ZC2AE, NUC121LC2AE, NUC121SC2AE, NUC121WC2AE, NUC121Y25CN |
| **NUC122** | NUC122LD2AN, NUC122LC1AN, NUC122SD2AN, NUC122SC1AN, NUC122ZD2AN, NUC122ZC1AN, NUC122ZD2DN, NUC122LD2DN, NUC122SD2DN, NUC122ZC1DN, NUC122LC1DN, NUC122SC1DN |
| **NUC123** | NUC123SC2AN1, NUC123SD4AN0, NUC123LC2AN1, NUC123LD4AN0, NUC123ZC2AN1, NUC123ZD4AN0, NUC123SC2AE1, NUC123SD4AE0, NUC123LC2AE1, NUC123LD4AE0, NUC123ZC2AE1, NUC123ZD4AE0 |
| **NUC125** | NUC125ZC2AE, NUC125LC2AE, NUC125SC2AE |
| **NUC126** | NUC126LE4AE, NUC126LG4AE, NUC126SE4AE, NUC126SG4AE, NUC126VG4AE, NUC126NE4AE |
| **NUC1261** | NUC1261LE4AE, NUC1261LG4AE, NUC1261SE4AE, NUC1261SG4AE |
| **NUC130** | NUC130LE3CN, NUC130LD2CN, NUC130LC1CN, NUC130RE3CN, NUC130RD2CN, NUC130RC1CN, NUC130VE3CN |
| **NUC131** | NUC131LD2AE, NUC131LC2AE, NUC131SD2AE, NUC131SC2AE, NUC131LD2AEU, NUC131LC2AEU, NUC131SD2AEU, NUC131SC2AEU |
| **NUC1311** | NUC1311LD2AE, NUC1311LC2AE |
| **NUC140** | NUC140LE3CN, NUC140LD2CN, NUC140LC1CN, NUC140RE3CN, NUC140RD2CN, NUC140RC1CN, NUC140VE3CN |
| **NUC200** | NUC200LE3AN, NUC200LD2AN, NUC200LC2AN, NUC200VE3AN, NUC200SE3AN, NUC200SD2AN, NUC200SC2AN, NUC220LE3AN, NUC220LD2AN, NUC220LC2AN, NUC220VE3AN, NUC220SE3AN, NUC220SD2AN, NUC220SC2AN |
| **NUC2201** | NUC2201LE3AE, NUC2201SE3AE |
| **NUC230** | NUC230LC2AE, NUC230LD2AE, NUC230LE3AE, NUC230SC2AE, NUC230SD2AE, NUC230SE3AE, NUC230VE3AE |
| **NUC240** | NUC240LC2AE, NUC240LD2AE, NUC240LE3AE, NUC220LE3AE, NUC240SC2AE, NUC240SD2AE, NUC240SE3AE, NUC240VE3AE |
| **Nano100** | Nano100ZD3AN, Nano100ZD2AN, Nano100VD3AN, Nano100VD2AN, Nano100SD3AN, Nano100SD2AN, Nano100LD3AN, Nano100LD2AN, Nano100ZC2AN, Nano100SC2AN, Nano100LC2AN, Nano100KE3BN, Nano100SE3BN, Nano100LE3BN, Nano100KD3BN, Nano100SD3BN, Nano100SD2BN, Nano100LD3BN, Nano100LD2BN, Nano100SC2BN, Nano100LC2BN, Nano100NE3BN, Nano100ND3BN, Nano100ND2BN, Nano100WE3BN |
| **Nano102** | Nano102ZB1AN, Nano102ZC2AN, Nano102LB1AN, Nano102LC2AN, Nano102SC2AN |
| **Nano103** | Nano103ZD3AE, Nano103LD3AE, Nano103SD3AE |
| **Nano110** | Nano110KE3BN, Nano110SE3BN, Nano110KD3BN, Nano110KD2BN, Nano110SD3BN, Nano110SD2BN, Nano110KC2BN, Nano110SC2BN, Nano110RC2BN, Nano110RD2BN, Nano110RD3BN |
| **Nano112** | Nano112LB1AN, Nano112LC2AN, Nano112SB1AN, Nano112SC2AN, Nano112RB1AN, Nano112RC2AN, Nano112VC2AN |
| **Nano120** | Nano120VD3AN, Nano120VD2AN, Nano120SD3AN, Nano120SD2AN, Nano120LD3AN, Nano120LD2AN, Nano120SC2AN, Nano120LC2AN, Nano120ZD3AN, Nano120ZD2AN, Nano120ZC2AN, Nano120KE3BN, Nano120SE3BN, Nano120LE3BN, Nano120KD3BN, Nano120SD3BN, Nano120SD2BN, Nano120LD3BN, Nano120LD2BN, Nano120SC2BN, Nano120LC2BN |
| **Nano130** | Nano130VD3AN, Nano130KE3BN, Nano130SE3BN, Nano130KD3BN, Nano130KD2BN, Nano130SD3BN, Nano130SD2BN, Nano130KC2BN, Nano130SC2BN |
| **NuMicro® M23 Family** | **M251** | M251FC2AE, M251EC2AE, M251ZC2AE, M251SC2AE, M251LC2AE, M251SD2AE, M251LD2AE, M251ZD2AE, M251KE3AE, M251SE3AE, M251LE3AE, M251KG6AE, M251SG6AE, M251LG6AE, M252FC2AE, M252EC2AE, M252ZC2AE, M252SC2AE, M252LC2AE, M252SD2AE, M252LD2AE, M252ZD2AE, M252KE3AE, M252SE3AE, M252LE3AE, M252KG6AE, M252SG6AE, M252LG6AE, M254SD3AE, M254SE3AE, M254QD3AE, M254QE3AE, M254KD3AE, M254KE3AE, M256SD3AE, M256SE3AE, M256QD3AE, M256QE3AE, M256KD3AE, M256KE3AE, M258SD3AE, M258SE3AE, M258QD3AE, M258QE3AE, M258KD3AE, M258KE3AE, M253ZE3AE, M253LE3AE, M253LD3AE |
| **NUC1262** | NUC1262NE4AE, NUC1262LE4AE, NUC1262SE4AE |
| **NDA102** | NDA102SD2 |
| **M261** | M261KIAAE, M261SIAAE, M261ZIAAE, M262KIAAE, M262SIAAE, M262ZIAAE, M263KIAAE, M263SIAAE, M263ZIAAE |
| **M2351** | M2351KIAAE, M2351SIAAE, M2351ZIAAE, M2351SFSIAAP |
| **M2354** | M2354ES, M2354KJFAE, M2354SJFAE, M2354LJFAE |
| **NuMicro® M4 Family** | **M451** | M451VG6AE, M451VE6AE, M451RG6AE, M451RE6AE, M451LG6AE, M451LE6AE, M451RD3AE, M451RC3AE, M451LD3AE, M451LC3AE, M452VG6AE, M452VE6AE, M452RG6AE, M452RE6AE, M452LG6AE, M452LE6AE, M452RD3AE, M452LD3AE, M452LC3AE, M453VG6AE, M453VE6AE, M453RG6AE, M453RE6AE, M453LG6AE, M453LE6AE, M453VD3AE, M453RD3AE, M453LD3AE, M453LC3AE, M451MLG6AE, M451MLE6AE, M451MSD3AE, M451MSC3AE, M451MLD3AE, M451MLC3AE, M4LEDRG6AE, M4LEDRE6AE, M4LEDLG6AE, M4LEDLE6AE, M4TKVG6AE, M4TKVE6AE, M4TKRG6AE, M4TKRE6AE, M4TKLG6AE, M4TKLE6AE |
| **M4521** | M4521SE6AE, M4521LE6AE |
| **M471** | M471KI8AE, M471VI8AE, M471VG7AE, M471QI8AE, M471QG7AE, M471R1E6AE, M471R1D6AE, M471SE6AE, M471SD6AE, M471MD6AE |
| **M479** | M479SG8AEE, M479LG8AEE, M479NG8AEE |
| **M480** | M481SIDAE, M481LIDAE, M481ZIDAE, M482KIDAE, M482SIDAE, M482LIDAE, M482ZIDAE, M483KIDAE, M483SIDAE, M485KIDAE, M485SIDAE, M485LIDAE, M487JIDAE, M487KIDAE, M487SIDAE, M487KMCAN, M481SGCAE, M481SGCAE2A, M481LGCAE, M481LE8AE, M481ZGCAE, M481ZE8AE, M482KGCAE, M482SGCAE, M482SE8AE, M482LGCAE, M482LE8AE, M482ZGCAE, M482ZE8AE, M483KGCAE, M483SGCAE, M483SE8AE, M483KGCAE2A, M483SGCAE2A |
| **NUC400** | NUC472HI8AE, NUC472HG8AE, NUC472JI8AE, NUC472JG8AE, NUC472KI8AE, NUC472KG8AE, NUC472VI8AE, NUC472VG8AE, NUC442JI8AE, NUC442JG8AE, NUC442KI8AE, NUC442KG8AE, NUC442VI8AE, NUC442VG8AE, NUC442RI8AE, NUC442RG8AE |
| **NUC505** | NUC505DLA, NUC505YLA, NUC505YLA2Y, NUC505DSA, NUC505DL13Y, NUC505DS13Y, NUC505YO13Y |
| **Motor Control** | **NM1100** | NM1100XBAE, NM1100FBAE |
| **NM1120** | NM1120FC1AE, NM1120EC1AE, NM1120XC1AE, NM1120ZC1AE |
| **NM1200** | NM1200LBAE, NM1200TBAE, NM1200ZBAE |
| **NM1230** | NM1234D, NM1232D, NM1220EBK0, NM1234Y, NM1232Y, NM1233D, NM1233Y |
| **NM1240** | NM1243D48, NM1243Y48, NM1243Y NM1244D48, NM1244Y48, NM1244Y, NM18407Y |
| **NM1320** | NM1320LC2AE |
| **NM1330** | NM1330LC1AE, NM1330LD2AE |
| **NM1500** | NM1510LC1AE, NM1520LC2AE, NM1520LD2AE, NM1520RC2AE, NM1520RD2AE, NM1530VD3AE, NM1530VE3AE, NM1530LE3AE |
| **NM1810** | NM18100Y, NM18101Y, NM18105Y, NM18107Y, NM1817NT |
| **NM1820** | NM18200S, NM18201S, NM18202S, NM1820ZB0AE, NM18200D, NM18200Y, NM18201Y, NM18202Y |
| **NM1830** | NM18307Y |
| **TF5100** | TF5103D, TF5103Y, TF5102Y |
|  | **N32F030** | N32F030D, N32F030Y, N32F030X |

# Supported Microcontroller - NuVoice® Family

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| **Product Line** | **Series** |
| **Audio Control** | **I91000, I91200, I94100, ISD9100 and N575** |

# Resources

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| **Website** | **Details** |
| [**ISPTool**](https://www.nuvoton.com/tool-and-software/software-development-tool/) **on** [**nuvoton.com**](https://www.nuvoton.com/) | <https://www.nuvoton.com/tool-and-software/software-development-tool/programmer/> |
| * Download the latest NuMicro ISP programming Tool. * View the ISPTool revision history. |
| **ISPTool git repositories** | <https://github.com/OpenNuvoton/ISPTool>  <https://gitee.com/OpenNuvoton/ISPTool>  <https://gitlab.com/OpenNuvoton/nuvoton-tools/ISPTool> |
| * Check the source code of ISPTool. |

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