Tabellen voor Keuze Microcontrollers

# Specificaties

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Naam** | **Fabrikant** | **Processor** | **Frequentie (MHz)** | **ROM (KB)** | **RAM (KB)** | **Wifi** | **BT** | **Prijs** |
| Bluno Nano | Arduino | Atmega328 | 16 | 1 | 32 |  | X | €30,- |
| ESP32 | Espressif | Tensilica Xtensa LX6 | 80 | 448 | 520 | X | X | €7,- |
| ESP8285 | Espressif | Tensilica Xtensa L106 | 26 | X | 50 | X |  | €2,- |
| ESP8266 | Espressif | Tensilica Xtensa L106 | 80 | 64 | 32 | X |  | €7,- |
| MT7681 | MediaTek | Andes N9 | 40 | 1024 | 48 | X |  | €4,- |
| nRF51822 | Nordic | Cortex-M0 | 150 | 256 | 32 |  | X | €32,- |
| nRF52832 | Nordic | Cortex-M4 | 64 | 512 | 64 |  | X | €26,- |
| NL6621 | NuFront | Cortex-M3 | 40 | 64 | 192 | X |  | €3,- |
| RTL8710 | RealTek | Cortex-M3 | 2412 | 1024 | 48 | X |  | €5,- |
| RTL8135 | RealTek | Cortex-M3 | 166 | 1024 | 1024 | X |  | €40,- |
| CC3200 | Texas Instruments | Cortex-M4 | 80 | 1024 | 256 | X |  | €32,- |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bluno Nano | ESP32 | ESP8285 | ESP8266 | MT7681 | nRF51822 | nRF52832 | NL6621 | RTL8710 | RTL8195 | CC3200 |
| Fabrikant | Arduino | Espressif | Espressif | Espressif | MediaTek | Nordic | Nordic | NuFront | RealTek | RealTek | Texas Instruments |
| Processor | Atmega328 | Tensilica Xtensa LX6 | Tensilica Xtensa L106 | Tensilica Xtensa L106 | Andes N9 | ARM Cortex-M0 | ARM Cortex-M4 | Arm Cortex-M3 | ARM Cortex-M3 | ARM Cortex-M3 | ARM Cortex-M4 |
| Frequentie (MHz) | 20 | 80 | 26 | 80 | 40 | 150 | 64 | 40 |  | 166 | 80 |
| ROM (KB) | 1 | 448 | n.p. | 64 | 1024 | 256 | 512 | 64 | 1024 | 1024 | 1024 |
| RAM (KB) | 32 | 520 | 50 | 32 | 48 | 32 | 64 | 192 | 48 | 1024 | 256 |
| Wifi |  | X | X | X | X |  |  | X | X | X | X |
| Bluetooth | X | X |  |  |  | X | X |  |  |  |  |
| Prijs\* | €30,- | €7,00 | €2,00 | €7,00 | €3,50 | €32,00 | €26,00 | €3,00 | €5,00 | €40,00 | €32,00 |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Prijs tabel

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bluno Nano | ESP32 | ESP8285 | ESP8266 | MT7681 | nRF51822 | nRF52832 | NL6621 | RTL8710 | RTL8195 | CC3200 |
| Prijs\* | €30,- | €7,00 | €2,00 | €7,00 | €3,50 | €32,00 | €26,00 | €3,00 | €5,00 | €40,00 | €32,00 |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Frequentie / ROM / RAM tabel

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bluno Nano | ESP32 | ESP8285 | ESP8266 | MT7681 | nRF51822 | nRF52832 | NL6621 | RTL8710 | RTL8195 | CC3200 |
| Frequentie (MHz) | 20 | 80 | 26 | 80 | 40 | 150 | 64 | 40 |  | 166 | 80 |
| ROM (KB) | 1 | 448 | n.p. | 64 | 1024 | 256 | 512 | 64 | 1024 | 1024 | 1024 |
| RAM (KB) | 32 | 520 | 50 | 32 | 48 | 32 | 64 | 192 | 48 | 1024 | 256 |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Wifi / Bluetooth tabel

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bluno Nano | ESP32 | ESP8285 | ESP8266 | MT7681 | nRF51822 | nRF52832 | NL6621 | RTL8710 | RTL8195 | CC3200 |
| Wifi |  | X | X | X | X |  |  | X | X | X | X |
| Bluetooth | X | X |  |  |  | X | X |  |  |  |  |
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| **Naam** | **Fabrikant** | **Processor** | **Prijs** | **Appendix** |
| Bluno Nano | Arduino | Atmega328 | €21,00 - €41,00 | §B.1 |
| Esp32 | Espressif | Tensilica Xtensa LX6 | €5,00 - €11,00 | §B.2 |
| nRF52832 | Nordic | ARM Cortex-M0 | €19,00 - €34,00 | §B.4 |
| nRF51822 | Nordic | ARM Cortex-M4 | €30,00 - €34,00 | §B.4 |

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| **Naam** | **Fabrikant** | **Processor** | **Prijs** | **Appendix** |
| Esp8266 | Espressif | Tensilica Xtensa L106 | €2,00 - €12,00 | §B.2 |
| Esp8285 | Espressif | Tensilica Xtensa L106 | €2,00 | §B.2 |
| Esp32 | Espressif | Tensilica Xtensa LX6 | €5,00 - €11,00 | §B.2 |
| CC3200 | Texas Instruments | ARM Cortex-M4 | €26,00 - €39,00 | §B.7 |
| NL6621 | NuFront | ARM Cortex-M3 | €2,70 | §B.5 |
| MT7681 | MediaTek | Andes N9 | €3,50 | §B.3 |
| RTL8195 | RealTek | ARM Cortex-M3 | €40,00 | §B.6 |
| RTL8710 | RealTek | ARM Cortex-M3 | €5,00 | §B.6 |

# §B.1 - Arduino

|  |  |
| --- | --- |
| **Naam** | **Bluno Nano** |
| **Fabriekant** | Arduino |
| **Processor** | Atmega328 |
| **Frequentie** | 20 MHz |
| **ROM** | 1 KB |
| **RAM** | 32 KB |
| **Wifi** | Nee |
| **Bluetooth** | Ja  Bluetooth 4.0 |
| **Prijs** | €21,00 - €41,00 |
| **Verkrijgbaar bij AliExpress** | Ja |
| **Anders verkrijgbaar** | Ja |

# §B.2 - Espressif

|  |  |  |  |
| --- | --- | --- | --- |
| **Naam** | **Esp32** | **Esp8285** | **ESP8266** |
| **Fabriekant** | Espressif | Espressif | Espressif |
| **Processor** | Tensilica Xtensa LX6 | Tensilica Xtensa L106 | Tensilica Xtensa L106 |
| **Frequentie** | 80 – 240 MHz | 26 – 52 MHz | 80 MHz |
| **ROM** | 448 KB | Geen programmeerbare ROM | 64 KB (Niet programmeerbaar) |
| **RAM** | 520 KB | 50 KB | 32 KB instruction RAM  32 KB instruction Cache RAM  80 KB user-data RAM  16 KB ETS system-data RAM |
| **Wifi** | Ja  (2.4 – 2.5 GHz) IEEE802.11b/g/n | Ja | Ja |
| **Bluetooth** | Ja  Bluetooth 4.2 | Nee | Nee |
| **Prijs** | €5,00 - €11,00 | €2,00 | €2,00 - €12,00 |
| **Verkrijgbaar bij AliExpress** | Ja | Ja | Ja |
| **Anders verkrijgbaar** | Ja | Ja | Ja |

# §B.3 - MediaTek

|  |  |
| --- | --- |
| **Naam** | **MT7681** |
| **Fabriekant** | MediaTek |
| **Processor** | Andes N9 |
| **Frequentie** | 40 MHz |
| **ROM** | 1 MB |
| **RAM** | 48 KB |
| **Wifi** | Ja |
| **Bluetooth** | Nee |
| **Prijs** | €3,50 |
| **Verkrijgbaar bij AliExpress** | Ja |
| **Anders verkrijgbaar** | Ja  Mouser |

# §B.4 - Nordic

|  |  |  |
| --- | --- | --- |
| **Naam** | **nRF51822** | **nRF52832** |
| **Fabriekant** | Nordic | Nordic |
| **Processor** | ARM Cortex-M0 | ARM Cortex-M4 |
| **Frequentie** | 150 - 275 MHz | 64 MHz |
| **ROM** | 256 KB | 512 KB |
| **RAM** | 32 KB | 64KB |
| **Wifi** | Nee | Nee |
| **Bluetooth** | JA | Ja  Bluetooth 4.0 |
| **Prijs** | €30,00 - €34,00 | €19,00 - €34,00 |
| **Verkrijgbaar bij AliExpress** | Ja | Ja |
| **Anders verkrijgbaar** | Ja | Ja |

# §B.5 - NuFront

|  |  |
| --- | --- |
| **Naam** | **NL6621** |
| **Fabriekant** | NuFront |
| **Processor** | Arm Cortex-M3 |
| **Frequentie** | 40 MHz |
| **ROM** | 64 KB |
| **RAM** | 192 KB |
| **Wifi** | Ja |
| **Bluetooth** | Nee |
| **Prijs** | €3,00 |
| **Verkrijgbaar bij AliExpress** | Ja |
| **Anders verkrijgbaar** | Ja, Niet in Nederland |

# §B.6 - RealTek

|  |  |  |
| --- | --- | --- |
| **Naam** | **RTL8710** | **RTL8195** |
| **Fabriekant** | RealTek | RealTek |
| **Processor** | ARM Cortex-M3 | ARM Cortex-M3 |
| **Frequentie** |  | 166MHz |
| **ROM** | 1 MB | 1MB |
| **RAM** | 48 KB | 1 MB |
| **Wifi** | Ja  802.11b/g/n | Ja |
| **Bluetooth** | Nee | Nee |
| **Prijs** | €5,00 | €40,00 |
| **Verkrijgbaar bij AliExpress** | Ja | Ja |
| **Anders verkrijgbaar** | Ja  Mouser | Ja  Mouser |

# §B.7 - Texas Instruments

|  |  |
| --- | --- |
| **Naam** | **CC3200** |
| **Fabriekant** | Texas Instruments |
| **Processor** | ARM Cortex-M4 |
| **Frequentie** | 80 MHz |
| **ROM** | 1 MB |
| **RAM** | 256 KB |
| **Wifi** | Ja  802.11b/g/n |
| **Bluetooth** | Nee |
| **Prijs** | €26,00 - €39,00 |
| **Verkrijgbaar bij AliExpress** | Ja |
| **Anders verkrijgbaar** | Ja |