TABLE I

System of Smartwatches

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Screen*** | ***Weight (g)*** | ***Width (mm)*** | ***Height (mm)*** | ***Thickness (mm)*** | ***Operating System*** | ***System Compatibility*** | ***Battery Capicity*** | ***Battery Lifetime*** |
| Watch Series 8 | Apple | 578 | Sep, 2022 | 1.9 inch Retina LTPO OLED | 51.5 | 38 | 45 | 10.7 | WatchOS | iOS | 308 | 36 |
| Watch Series 5 | Apple | 499 | Sep, 2019 | 1.57 inch LTPO OLED | 39.8 | 34 | 40 | 10.7 | WatchOS | iOS | 245 | 18 |
| Vantage V2 | Polar | 360 | Oct,2020 | 1.2 inch MIP | 52 | 47 | 47 | 13 | Proprietary | Android, iOS | 346 | 168 |
| 7 | Suunto | 342 | Jan, 2020 | 1.39 inch AMOLED | 70 | 24 | 50 | 15.3 | WearOS | Android, iOS | N.S. | 48 |
| Pixel | Google | 334 | Oct, 2022 | 1.2 inch AMOLED | 36 | 41 | 41 | 12.3 | ColorOS | Android, iOS | 294 | N.S. |
| Watch 3 Pro | Oppo | 288 | Aug, 2022 | 1.91 inch LTPO full-curve screen | 37.5 | 38.5 | 50.4 | 12.75 | ColorOS | Android, iOS | 550 | 336 |
| Sense | FitBit | 226 | Sep, 2020 | 1.58 inch AMOLED | N.S. | 40.4 | 40.4 | 12.4 | FitBit | Android, iOS | 266 | 168 |
| LEM15 | LEMFO | 222 | N.S., 2021 | 1.6 inch HD Round Screen | 73.5 | 50.7 | 50.7 | 16 | N.S. | Android, iOS | 900 | N.S. |
| Pace 2 | Coros | 220 | Aug, 2020 | 1.2 inch Memroy LCD | 29 | 42 | 42 | 11.7 | Proprietary | Android, iOS | N.S. | 480 |
| Watch 3 GS | Honor | 204 | Jan, 2022 | 1.43 inch AMOLED | 44 | 45.9 | 35.9 | 10.5 | Proprietary Lite | Android | 451 | 336 |
| GTS 4 | Amazfit | 199 | Oct, 2022 | 1.75 inch AMOLED | 27 | 36.5 | 42.7 | 9.9 | N.S. | Android, iOS | 300 | 384 |
| Forerunner 55 | Garmin | 199 | Jun, 2021 | 1.04 inch LCD MIP | 37 | 42 | 42 | 11.6 | Proprietary | Android, iOS | N.S. | 336 |
| Galaxy Watch Active 2 | Samsung | 195 | Sep,  2019 | 1.35 inch Super AMOLED | 42 | 44 | 44 | 10.9 | TizenOS | Android, iOS | 340 | 48 |
| Magic Watch 2 | Honor | 192 | Nov, 2019 | 1.39 inch OLED | 41 | 45.9 | 45.9 | 10.7 | Proprietary | Android | 455 | 336 |
| GT3 | Huawei | 190 | Oct, 2021 | 1.43 inch AMOLED | 42.6 | 45.9 | 45.9 | 11 | HarmonyOS | Android, iOS | 455 | 336 |
| Gen 6 | Fossil | 189 | Sep, 2021 | 1.28 inch AMOLED | 72.6 | 44 | 44 | 11.5 | WearOS | Android, iOS | 300 | N.S. |
| Gen 5 | Fossil | 189 | Aug, 2019 | 1.28 inch AMOLED | N.S. | 44 | 44 | 12 | WearOS | Android, iOS | 310 | N.S. |
| Galaxy Watch 5 | Samsung | 183 | Aug, 2022 | 1.4 inch Super AMOLED | 33.5 | 43.3 | 44.4 | 9.8 | WearOS | Android | 410 | 40 |

TABLE II

System of Smartwatches

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Screen*** | ***Weight (g)*** | ***Width (mm)*** | ***Height (mm)*** | ***Thickness (mm)*** | ***Operating System*** | ***System Compatibility*** | ***Battery Capicity*** | ***Battery Lifetime*** |
| Watch | OnePlus | 159 | Mar,2021 | 1.39 inch AMOLED | 45 | 46.4 | 46.4 | 10.9 | Proprietary | Android | 402 | 336 |
| GT2 | Huawei | 155 | Sep, 2019 | 1.39 inch OLED | 41 | 45.9 | 45.9 | 10.7 | Proprieatary | Android, iOS | 455 | 336 |
| E3 | TicWatch | 150 | Jun, 2021 | 1.3 inch display 2.5D glass | 32 | 44 | 47 | 12.6 | WearOS | Android, iOS | 380 | N.S. |
| Moto watch 100 | Motorola | 90 | Dec, 2021 | 1.3 inch Circular LCD | 35 | 35.8 | 41.2 | 10.9 | MotoWatch | Andorid, iOS | 355 | 336 |
| Tank M2 | Kospet | 90 | Dec, 2022 | 1.85 inch IPS | 60 | 43.7 | 54 | 14 | N.S. | Android, iOS | 380 | 360 |
| Cross Fit 2 | North Edge | 79 | N.S., 2021 | 1.3 inch IPS LCD | 65 | 49 | 49 | 15 | Proprietary | Android, iOS | 320 | 120 |
| Watch 2 | Realme | 64 | Apr, 2021 | 1.4 inch IPS LCD | 38 | 25.8 | 35.7 | 12.2 | Proprietary | Android, iOS | 315 | 288 |
| KW10 PRO | KingWear | 60 | Feb, 2021 | 1.09 inch Round Touch Screen | N.S. | 42 | 42 | 11 | N.S. | Android, iOS | 180 | N.S. |
| Mi Watch Lite | Xiaomi | 59 | Dec, 2020 | 1.4 inch LCD display | 35 | 35 | 41 | 11.9 | Proprietary | Android, iOS | 230 | 216 |
| Mi Watch 2 Lite | Xiaomi | 55 | Nov, 2021 | 1.55 inch TFT LCD | 35 | 35.8 | 41.2 | 10.9 | Proprietary | Android, iOS | 262 | 240 |
| C22 | Bozlun | 50 | N.S. | 1.6 inch LCD | 60 | 46 | 46 | 13 | N.S. | Android, iOS | 400 | N.S. |
| BoAT Blaze | boAT | 49 | Feb, 2022 | 1.75 inch AMOLED | 43.8 | 26 | 26 | 32 | N.S. | Android, iOS | 220 | 168 |
| Beyond 2 | Zeblaze | 49 | N.S., 2022 | 1.78 inch AMOLED | 42.4 | 37 | 45 | 10.5 | N.S. | Android, iOS | 180 | 336 |
| Watch Foom S | Aolon | 47 | N.S. | 1.8 inch IPS HD Color Screen | 57 | 37.9 | 46.4 | 11.8 | N.S. | Android, iOS | 260 | 168 |
| ZL02 | Bozlun | 46 | N.S., 2021 | 1.28 inch IPS | 45 | 45.5 | 45.5 | 10 | N.S. | Android, iOS | 220 | 168 |
| Amazfit ARC | Amazfit | 44 | Oct, 2016 | 0.42 inch OLED | 20 | 19 | 11 | 245 | Proprietary | Android, iOS | 70 | 480 |
| Watch 3 | Realme | 43 | Aug, 2022 | 1.8 inch IPS LCD | 40 | 37 | 45 | 11.5 | Proprietary | Android, iOS | 340 | 168 |
| P80S | Bozliun | 43 | N.S. | 1.6 inch IPS | 50 | 36 | 42 | 11 | N.S. | Android, iOS | 180 | 120 |
| CS2 | Doogee | 42 | May, 2021 | 1.69 inch LCD | 35 | 36.9 | 43.8 | 10.5 | N.S. | Android, iOS | 300 | 360 |
| S2 Pro | Lenovo | 40 | Apr, 2021 | 1.69 inch IPS Full Touch | 40.3 | 76 | 165.2 | 9.2 | N.S. | Android, iOS | 250 | 360 |
| P10 | Colmi | 40 | Feb, 2021 | 1.3 inch IPS | 33 | 41 | 46 | 11 | N.S. | Android, iOS | 170 | 168 |

TABLE III

System of Smartwatches

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Screen*** | ***Weight (g)*** | ***Width (mm)*** | ***Height (mm)*** | ***Thickness (mm)*** | ***Operating System*** | ***System Compatibility*** | ***Battery Capicity*** | ***Battery Lifetime*** |
| ADV S2 | Aolon | 37 | N.S. | 1.92 inch IPS HD Color | 45 | 36 | 44 | 12 | N.S. | Android, iOS | 260 | 120 |
| WT2105 | Maimo | 36 | N.S. | 1.69 inch TFT LCD Screen | 24 | 37 | 43.75 | 11 | N.S | Android, iOS | 300 | 504 |
| GST | Haylou | 32 | Dec, 2021 | 1.69 inch TFT display | 42 | 38.7 | 49.9 | 11.7 | N.S. | Android, iOS | N.S. | 216 |
| C21 | SKMEI | 32 | N.S., 2019 | 1.32 inch TFT | 60 | 46.5 | 46.5 | 13 | N.S. | Android, iOS | 300 | 120 |
| LS02 | Aukey | 32 | Aug, 2021 | 1.4 inch TFT LCD | 38 | 36 | 48 | 12 | N.S. | Android, iOS | 260 | 480 |
| C5 | Cubot | 32 | Aug, 2021 | 1.7 inch TFT LCD | 40 | 37.2 | 43 | 12 | N.S. | Android, iOS | 260 | 168 |
| KU1 S | Kumi | 30 | Oct, 2020 | 1.54 inch IPS Color Screen | 33 | 30 | 40 | 11.2 | N.S. | Android, iOS | 210 | 360 |
| H40 | SKMEI | 30 | N.S. | 1.3 inch Colorful LCD | N.S. | 45 | 45 | 11 | N.S. | Android, iOS | 290 | 168 |
| DT8 Ultra + | DT No.1 | 30 | Oct, 2022 | 2.1 inch TFT | 36 | 43 | 49 | 11.5 | N.S. | Android, iOS | 280 | 120 |
| P45 | Colmi | 30 | Apr, 2022 | 1.81 inch IPS | 50 | 38 | 43 | 13.52 | N.S. | Android, iOS | 260 | 144 |
| KU6 | Kumi | 30 | Nov, 2022 | 1.91 inch HD | 41 | 37 | 47 | 11.3 | N.S. | Android, iOS | 300 | 168 |
| 15 Ultra | iwo | 25 | Sep, 2022 | 2.02 inch IPS | N.S. | 40 | 45 | 10.2 | N.S. | Android, iOS | 200 | 168 |

TABLE IV

Board of Smartwatches

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Microntroller SoC*** | ***Bit*** | ***Off-Chip RAM*** | ***Off-Chip Storage*** | ***On-board Sensors*** | ***On-board RF*** |
| Watch Series 8 | Apple | 578 | Sep, 2022 | Apple S8 Dual Core | 64 | 1GB | 32GB | Accelerometer, Ambient Light, Gyroscope, ECG Heart Rate, Altimeter Magnetometer, Blood Oxygen, Barometer, Temperature | Bluetooth, NFC, Wi-Fi, GLONASS, Galileo, QZSS, BDS |
| Watch Series 5 | Apple | 499 | Sep, 2019 | Apple S5 Dual Core | 64 | 1GB | 32GB | Accelerometer, Gyroscope, Heart Rate, Magnetometer, Barometer, Altimeter, ECG | Bluetooth, GPS, GLONASS, Galileo, QZSS, Wi-Fi |
| Vantage V2 | Polar | 360 | Oct,2020 | N.S. | N.S. | 0.64MB | 32MB | Heart Rate, Barometer, Magnetometer, Accelerometer, Ambient Light | Bluetooth, GPS, Galileo, GLONASS, QZSS |
| 7 | Suunto | 342 | Jan, 2020 | Wear 3100 | N.S. | 1GB | 8GB | Accelerometer, Altimeter, Ambient Light, Barometer, Magnetometer, Gyroscope, Heart Rate | Bluetooth, BEIDOU, GLONASS, GPS, QZSS, Wi-Fi |

TABLE V

Board of Smartwatches

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Microntroller SoC*** | ***Bit*** | ***Off-Chip RAM*** | ***Off-Chip Storage*** | ***On-board Sensors*** | ***On-board RF*** |
| Pixel | Google | 334 | Oct, 2022 | Exynos 9110 SoC Cortex M33 co-processor | N.S. | 2GB | 32GB | Accelerometer, Gyrospcope, Heart Rate, Altimeter, Magnetometer, SP02 | 4G LTE, Bluetooth, Wi-Fi, NFC, GPS, GLONASS, BEIDOU, Galileo |
| Watch 3 Pro | Oppo | 288 | Aug, 2022 | Snapdragon W5+ Gen 1 & Apollo 4 Plus | N.S. | 1GB | 32GB | Accelerometer, Gyroscope, Geomagnetic Heart rate, SP02, ECG, Light, Barometric | Bluetooth, LTE, GPS, GLONASS, BDS, Galileoi, QZSS |
| Sense | FitBit | 226 | Sep, 2020 | FBT18SW | N.S. | N.S. | 4GB | Heart Rate, SPO2 Gyroscope, Altimeter, Accelerometer, Temperature, Ambient Light | Bluetooth, GPS, GLONASS |
| LEM15 | LEMFO | 222 | N.S., 2021 | MT6762 | N.S. | 4GB | 128GB | Heart Rate, Pedometer | Bluetooth, WiFi, GPS, Cellular Network |
| Pace 2 | Coros | 220 | Aug, 2020 | N.S. | N.S. | N.S. | N.S. | Heart Rate, Barometer, Altimeter, Accelerometer, Gyroscope, Magnetometer, Thermometer | Bluetooth, GPS, Galileo, GLONASS, BEIDOU |
| Watch 3 GS | Honor | 204 | Jan, 2022 | Apollo 4 | N.S. | 32MB | 4GB | Accelerometer, Gyroscope, Heart Rate, Barometer, Magnetometer, SPO2 | Bluetooth, GPS, GLONASS, BDS, Galileo, QZSS |
| GTS 4 | Amazfit | 199 | Oct, 2022 | Exynos 9000 | N.S. | 1GB | 3GB | Heart Rate, SP02, Accelerometer, Geomagnetic, Ambient light | Bluetooth, WLAN, NFC  GPS |
| Forerunner 55 | Garmin | 199 | Jun, 2021 | N.S. | N.S. | N.S. | N.S. | Accelerometer, Heart Rate | Bluetooth, ANT+, GPS, GLONASS, Galileo |
| Galaxy Watch Active 2 | Samsung | 195 | Sep,  2019 | Samsung Exynos 9110 | N.S. | 1.5GB | 4GB | Accelerometer, Gyroscope, Heart Rate, Vibration, Barometer, ECG | Bluetooth, NFC, Wi-Fi, GPS, GLONASS, Galileo, BDS |
| Magic Watch 2 | Honor | 192 | Nov, 2019 | Huawei Kirin A1 | N.S. | 32MB | 4GB | Accelerometer, Gyroscope, Heart Rate, Barometer, Magnetometer | Bluetooth, GPS, GLONASS, Galileo |
| GT3 | Huawei | 190 | Oct, 2021 | N.S. | N.S. | 32MB | 4GB | Accelerometer, Gyroscope, Geomagnetic, Optical Heart Rate, Barometric, Temperature | Bluetooth, GPS, GLONASS, Galileo, BDS, QZSS |
| Gen 6 | Fossil | 189 | Sep, 2021 | Qualcomm Snapdragon Wear 4100+ | N.S. | 1GB | 8GB | Accelerometer, Altimeter, Ambient Light, Compass, Gyroscope, Infra-Red, Heart Rate , SPO2 | Bluetooth 5.0, GPS, NFC, Wi-Fi |
| Gen 5 | Fossil | 189 | Aug, 2019 | Qualcomm Snapdragon Wear 3100 | N.S. | 1GB | 8GB | Accelerometer, Gyroscope, Heart Rate Light, Magnetometer Vibration, Infra-red | Bluetooth, GPS NFC, Wi-Fi |

TABLE VI

Board of Smartwatches

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Microntroller SoC*** | ***Bit*** | ***Off-Chip RAM*** | ***Off-Chip Storage*** | ***On-board Sensors*** | ***On-board RF*** |
| Galaxy Watch 5 | Samsung | 183 | Aug, 2022 | Exynos W920 | N.S. | 1.5GB | 16GB | Accelerometer, Barometer, Bioelectrical, Gyroscope, Geomagnetic, Light, Electrical, and Optical Heart Rate | Bluetooth, GPS, GLONASS, Galileo, BDS, NFC, Wi-Fi |
| Watch | OnePlus | 159 | Mar,2021 | ST32, Apollo 3 | N.S. | 1GB | 4GB | Accelerometer, Gyroscope Geomagnetic Optical heart rate, SPO2, Ambient light, Barometric, Capacitive | Bluetooth, GPS, GLONASS, Galileo, BEIDOU |
| GT2 | Huawei | 155 | Sep, 2019 | Huawei Kirin A1 | N.S. | 32MB | 4GB | Accelerometer, Gyroscope, Geomagnetic, Optical heart rate, Ambient light, Barometric, Capacitive | Bluetooth, GPS, GLONASS, Galileo |
| E3 | TicWatch | 150 | Jun, 2021 | Snapdragon 4100 Platform Mobvoi Dual Processor | N.S. | 1GB | 8GB | Accelerometer, Gyroscope, Heart Rate, SPO2 | Bluetooth, Wi-Fi, GPS, GLONASS BeiDou, NFC |
| Moto watch 100 | Motorola | 90 | Dec, 2021 | N.S. | N.S. | N.S. | N.S. | Accelerometer, Gyroscope, Heart Rate, SPO2, Ambient Light | Bluetooth, GPS, GLONASS |
| Tank M2 | Kospet | 90 | Dec, 2022 | RTL8763EW | 32 | 64kB | 128MB | Heart Rate, Pedometer, Accelerometer | Bluetooth |
| Cross Fit 2 | North Edge | 79 | N.S., 2021 | MTK2503 | N.S. | 32MB | 120MB | Heart Rate, Barometer, Altimeter, Magnetometer | Bluetooth, GPS |
| Watch 2 | Realme | 64 | Apr, 2021 | N.S. | N.S. | N.S. | N.S. | Heart Rate, SPO2, Accelerometer | Bluetooth |
| KW10 PRO | KingWear | 60 | Feb, 2021 | NRF52832 | 32 | 64kB | 512kB | Heart rate, SPO2, Accelerometer | Bluetooth |
| Mi Watch Lite | Xiaomi | 59 | Dec, 2020 | N.S. | N.S. | N.S. | N.S. | Accelerometer, Gyropscope, Heart Rate Magnetometer, Vibration Barometer | Bluetooth, GPS, GLONASS |
| Mi Watch 2 Lite | Xiaomi | 55 | Nov, 2021 | Ambiq Apollo 3.5 | 32 | N.S. | N.S. | Optical Heart Rate, Accelerometer,Gyroscope, Magnetometer | Bluetooth, GPS, GLONASS, Galileo, BDS |
| C22 | Bozlun | 50 | N.S. | ATS3085 | 32 | 1GB | 4GB | Heart Rate, SPO2 | Bluetooth |
| BoAT Blaze | boAT | 49 | Feb, 2022 | Apollo Blue Plus 3 | 32 | N.S. | N.S. | Accelerometer, Heart Rate, SP02 | Bluetooth |
| Beyond 2 | Zeblaze | 49 | N.S., 2022 | DA14695 | 32 | 128MB | N.S. | Heart Rate, SPO2 Accelerometer, Proximity | Bluetooth, GPS, GLONASS, Galileo, BeiDou |
| Watch Foom S | Aolon | 47 | N.S. | GR5515 Ultra-low Power AC6963A | 32 | 256kB | 64MB | Heart Rate, Accelerometer | Bluetooth |
| ZL02 | Bozlun | 46 | N.S., 2021 | DA14695 | 32 | N.S. | N.S. | Heart Rate, Accelerometer | Bluetooth |
| Amazfit ARC | Amazfit | 44 | Oct, 2016 | DA14681 | 32 | 128kB | N.S. | Accelerometer, Pedometer, Heart Rate | Bluetooth |
| Watch 3 | Realme | 43 | Aug, 2022 | N.S. | N.S. | N.S. | N.S. | Optical Heart Rate, SPO2, Accelerometer | Bluetooth |
| P80S | Bozliun | 43 | N.S. | HS6621 | 32 | N.S. | 64MB | Heart Rate, Accelerometer | Bluetooth |
| CS2 | Doogee | 42 | May, 2021 | RTL8762C | 32 | N.S. | 128MB | Accelerometer, Heart Rate | Bluetooth |
| S2 Pro | Lenovo | 40 | Apr, 2021 | N.S. | N.S. | N.S. | N.S. | Accelerometer, Heart Rate, Temperature | Bluetooth, GLONASS, BeiDou, Galileo |

TABLE VII

Board of Smartwatches

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Vendor*** | ***Price (USD)*** | ***Released Date*** | ***Microntroller SoC*** | ***Bit*** | ***Off-Chip RAM*** | ***Off-Chip Storage*** | ***On-board Sensors*** | ***On-board RF*** |
| P10 | Colmi | 40 | Feb, 2021 | RTL8762C | 32 | N.S. | N.S. | Accelerometer, Heart Rate, Gyroscope, Optical Heart, SP02 | Bluetooth |
| ADV S2 | Aolon | 37 | N.S. | AC6954 | 32 | N.S. | N.S. | Heart Rate, Accelerometer | Bluetooth, NFC |
| WT2105 | Maimo | 36 | N.S. | N.S. | N.S. | N.S. | N.S. | Accelerometer, Heart Rate | Bluetooth |
| GST | Haylou | 32 | Dec, 2021 | RTL8762C | 32 | N.S. | N.S. | Heart Rate, Motion, SPO2 | Bluetooth |
| C21 | SKMEI | 32 | N.S., 2019 | RTL8762DK | 32 | N.S. | N.S. | Heart Rate, Accelerometer | Blueetoh |
| LS02 | Aukey | 32 | Aug, 2021 | N.S. | N.S. | N.S. | N.S. | Heart Rate, Accelerometer | Bluetooth |
| C5 | Cubot | 32 | Aug, 2021 | RTL8752C | 32 | N.S. | N.S. | Heart Rate, Gyroscope Accelerometer | Bluetooth |
| KU1 S | Kumi | 30 | Oct, 2020 | RTL8762C | 32 | N.S. | N.S. | Heart Rate, Accelerometer | Bluetooth |
| H40 | SKMEI | 30 | N.S. | RTL8762CW | 32 | 128kB | N.S. | Heart Rate | Bluetooth |
| DT8 Ultra + | DT No.1 | 30 | Oct, 2022 | RTL8762D | 32 | N.S. | N.S. | Heart Rate Accelerometer, SPO2, Temperature | Bluetooth, GPS, NFC |
| P45 | Colmi | 30 | Apr, 2022 | GR5515 | 32 | 128MB | N.S. | Heart Rate, Accelerometer | Bluetooth |
| KU6 | Kumi | 30 | Nov, 2022 | RTL8763EW | 32 | 64MB | 128MB | Heart Rate, Accelerometer | Bluetooth, NFC |
| 15 Ultra | iwo | 25 | Sep, 2022 | HS6621 | 32 | N.S. | N.S. | Heart Rate, SPO2, Accelerometer | Bluetooth, NFC |

TABLE VIII

Specifications of Smartwatch SoCs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Price (USD)*** | ***Bits*** | ***Core*** | ***Core Clock (MHz)*** | ***RAM(kB)*** | ***ROM (kB)*** | ***Flash*** | ***Cache (kB)*** | ***Power (mW)*** |
| nrf52832 | 65 | 32 | 1 | 64 | 64 | N.S. | 512kB | N.S. | 6.3104 |
| DA14695 | 60 | 32 | N.S | 96 | 512 | 128 | N.S. | 16 | 10.54 |
| ATS3085 | 50 | 32 | 1 | 128 | 481 | N.S. | 2MB | N.S. | N.S. |
| Apollo 3 Blue Plus | 49 | 32 | 1 | 96 | 768 | N.S. | 2MB | 16 | 6.9077 |
| RTL8762C | 40 | 32 | 1 | 40 | 160 | N.S. | 8MB | 16 | 20.34 |
| DA14681 | 36 | 32 | 1 | 96 | 128 | 128 | N.S. | 16 | 10.54 |
| RTL8762D | 35 | 32 | 1 | 90 | 192 | 256 | 32MB | 16 | 25.074 |
| HS6621 | 35 | 32 | 1 | 128 | 256 | 256 | 8MB | N.S. | 10.8 |
| GR5515 | 30 | 32 | 1 | 64 | 256 | N.S. | 1MB | N.S. | 3.264 |

TABLE IX

Digital Peripherals of Smartwatch SoCs

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Name*** | ***Price (USD)*** | ***GPIO*** | ***I2C*** | ***I2S*** | ***UART*** | ***SPI*** | ***PWM*** | ***PDM*** | ***Watchdog Timer*** | ***Timer*** | ***ADC*** |
| nrf52832 | 65 | 32 | 2 | 1 | 1 | 3 | 3 | 1 | N.S. | 3 | N.S. |
| DA14695 | 60 | 55 | 2 | 1 | 3 | 2 | N.S. | 1 | 1 | 5 | N.S. |
| ATS3085 | 50 | N.S. | 4 | N.S. | 3 | 6 | 9 | N.S. | 1 | 1 | 1 |
| Apollo 3 Blue Plus | 49 | 74 | 7 | 1 | 2 | 7 | 8 | 1 | 1 | 3 | 1 |
| RTL8762C | 40 | 38 | 2 | 1 | 2 | 2 | 8 | N.S. | N.S. | 1 | 1 |
| DA14681 | 36 | 37 | 2 | 1 | 2 | 2 | N.S | 1 | 1 | 3 | 1 |
| RTL8762D | 35 | 40 | 2 | 1 | 2 | 2 | 8 | 2 | N.S. | 1 | 1 |
| HS6621 | 35 | 30 | 1 | 1 | 1 | 1 | 1 | N.S. | 1 | 1 | 1 |
| GR5515 | 30 | 39 | 2 | 2 | 2 | 2 | 1 | N.S. | 2 | 1 | 1 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Smartwatch | | |
|  | Min. | Avg. | Max. |
| Price (USD) | 25 | 130 | 578 |
| Bit | 32 | - | 64 |
| Off-Chip RAM (kB) | 64 | 695,760 | 4,000,000 |
| Off-Chip ROM (kB) | 32,000 | 12,600,000 | 128,000,000 |
| Battery Capacity (mAh) | 70 | 313.17 | 900 |
| Battery Lifetime (h) | 18 | 243.86 | 504 |
| Volume (mm3) | 11,236.93 | 23,868.60 | 115,507.84 |
| Weight (g) | 20 | 42.76 | 73.5 |