




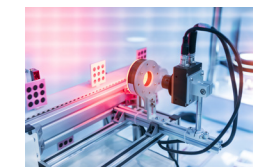


Wireless Connectivity

Product Leaflet

| | Bluetooth® Low Energy | Bluetooth® LE & IEEE® 802.15.4 | | | |
|-----------------------------|---|---|--|--|--|
| |  |  |  |  COMING SOON |  NEW |
| SERIES | PAN1740A | PAN1780 | PAN1781 | PAN1782 | PAN1770 |
| STATUS | Mass Production | Mass Production | Mass Production | In Development | Mass Production |
| PART NUMBER | ENW89852A1KF | ENW89854A1KF ENW89854A3KF (PAN1780AT) | ENW89857A1KF | ENW89858A1KF | ENW89854C1KF (Standard) ENW89854C2KF (APPROTECT) |
| RF CATEGORY | Bluetooth®5.0 | Bluetooth® 5.1, IEEE® 802.15.4 & NFC-A | Bluetooth® 5.1, IEEE® 802.15.4 | Bluetooth® 5.x, IEEE® 802.15.4 | Bluetooth® 5.1, IEEE® 802.15.4 & NFC-A |
| SOFTWARE & DRIVERS | SDK by Dialog | nRF5 SDK by Nordic nRF Connect SDK | nRF5 SDK by Nordic nRF Connect SDK | nRF5 SDK by Nordic Nordic Connect SDK | nRF5 SDK by Nordic nRF Connect SDK |
| INTEGRATED CIRCUIT | DA14585 | nRF52840 | nRF52820 | nRF52833 | nRF52840 |
| SIZE [MM] | 9.0 x 9.5 x 1.8 | 15.6 x 8.7 x 2.0 | 15.6 x 8.7 x 2.0 | 15.6 x 8.7 x 2.0 | 15.6 x 8.7 x 2.0 |
| RX SENSITIVITY [DBM] | -93 @ 1Mb/s | -95 @ 1Mb/s -103 @ 125kb/s | -95 @ 1Mb/s -103 @ 125kb/s | -96 @ 1Mb/s -103 @ 125kb/s | -95 @ 1Mb/s -103 @ 125kb/s |
| TX POWER (MAX.) [DBM] | +0 | +8 | +8 | +8 | +8 |
| POWER SUPPLY [V] | 2.2 to 3.3 | 1.7 to 5.5 | 1.7 to 5.5 | 1.7 to 5.5 | 1.7 to 5.5 |
| CURRENT CONSUMPTION | Tx: 4.9mA, 3V @ 0dBm Rx: 4.9mA, 3V | Tx: 4.8mA, 3.3V @ 0dBm Rx: 4.8mA, 3.3V | Tx: 4.9mA @ 0dBm Rx: 4.7mA | Tx: 4.9mA @ 0dBm Rx: 4.7mA | Tx: 4.8mA, 3.3V @ 0dBm Rx: 4.8mA, 3.3V |
| SLEEP MODE CURRENT | Sleep Mode (Full RAM Retention): 4µA Deep Sleep Mode: 520nA | Wake-on-RTC: 1.5µA Off Mode: 0.4µA | Wake-on-RTC: 1.2µA Off Mode: 0.3µA | Wake-on-RTC: 1.5µA Off Mode: 0.6µA | Wake-on-RTC: 1.5µA Off Mode: 0.4µA |
| INTERFACES | GPIO, UART, SPI+, I2C, ADC, 3-axis QD | GPIO, UART, QSPI, I2C, I2S, ADC, PDM, PWM, NFC-A, USB2.0 | GPIO, UART, SPI, I2C, USB2.0, QDEC | GPIO, UART, QSPI, I2C, I2S, ADC, PDM, PWM, COMP, USB2.0 | GPIO, UART, QSPI, I2C, I2S, ADC, PDM, PWM, NFC-A, USB2.0 |
| MICROCONTROLLERS AND MEMORY | ARM® Cortex®-M0 96kB SRAM, 64kB OTP | ARM® Cortex®-M4F 256kB RAM, 1MB Flash | ARM® Cortex®-M4 32kB RAM, 256kB Flash | ARM® Cortex®-M4 128kB RAM, 512kB Flash | ARM® Cortex®-M4F 256kB RAM, 1MB Flash |
| OPERATING TEMP. [°C] | -40 to +85 | -40 to +85 | -40 to +85 | -40 to +85 | -40 to +85 |
| EVALUATION KIT | ENW89852AXKF (Dongle) ENW89852AWKF (Dongle Kit) | ENW89854AUKF (Board) ENW89854AVKF (AT Board) | ENW89857AXKF (Board) | ENW89858AXKF (Board) | ENW89854CXKF (Standard) ENW89854CZKF (APPROTECT) |

Applications



Industrial IoT



Smart Home/Building



Beacons



Medical Devices





Status of engineering sample (ES) are expected as of the time of leaflet production.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth® SIG, Inc. and any use of such marks by Panasonic is under license. Other trademarks and trade names are those of their respective owners.

Panasonic Industry Europe GmbH
wireless.connectivity@eu.panasonic.com
<https://industry.panasonic.eu>

Wireless Connectivity

Product Leaflet


| | Bluetooth® Dual Mode | Wi-Fi® & Bluetooth® LE | | Wi-Fi® |
|------------------------------------|---|--|---|---|
| |  |  |  |  |
| SERIES | PAN13x6C/2 | PAN9026 | PAN9028 | PAN9520 |
| STATUS | Mass Production | Mass Production | Mass Production | Mass Production |
| PART NUMBER | ENW89823A5KF (Chip Antenna) ENW89823C4KF (bottom Pad) | ENWF9202A1EF (EU) ENWF9201A1EF (US) ENWF9203A1EF (CA) ENWF9208A1EF (Multi-region) | ENWF9408A1EF (with PMIC) ENWF9408A2EF (without PMIC) | ENW49D01A1KF (4 MB Flash / 2 MB RAM) ENW49D02A1KF (1 MB Flash / No RAM) |
| RF CATEGORY | Bluetooth® 5.1 Dual Mode (BR, EDR, Bluetooth® LE) | Wi-Fi® Radio 2.4 GHz & 5.0 GHz 802.11 a/b/g/n & Bluetooth® 5.0 (BR, EDR, LE) | Wi-Fi® Radio 2.4 GHz & 5.0 GHz 802.11 a/b/g/n/ac & Bluetooth® 5.2 (BR, EDR, LE) | Wi-Fi® Embedded 802.11 b/g/n |
| SOFTWARE & DRIVERS | HCI Bluetooth Stack for MSP432 or STM32 Bluetooth Service Pack with Init Script | HCI Linux & i.MX RT Support MCUXpresso | HCI Linux & i.MX RT Support MCUXpresso | ESP-IDF by Espressif Arduino IDE |
| INTEGRATED CIRCUIT | CC2564C | 88W8977 | 88W8987 | ESP32-S2 |
| SIZE [MM] | 9.0 x 9.5 x 1.8 (with Antenna) 9.0 x 6.5 x 1.8 (no Antenna) | 17.5 x 10.0 x 2.6 | 24.0 x 12.0 x 2.8 | 24.0 x 13.0 x 3.1 |
| RX SENSITIVITY [DBM] | -90 | -98 @ 1M-DSSS | -98 @ 1M-DSSS | -97 @ IEEE 802.11b |
| TX POWER (MAX.) [DBM] | +10 (Chip Antenna) +11.5 (no Antenna) | +17 @ IEEE 802.11b | +16 @ IEEE 802.11b | +19.8 @ IEEE 802.11b |
| POWER SUPPLY [V] | 1.7 to 4.8 | 1.8 to 3.3 | 3.3 with PMIC 1.1, 1.8, 2.2, 3.3 without PMIC | 3.0 to 3.6 |
| CURRENT CONSUMPTION | Tx: 40mA, 3.3V @ 8dBm Rx: 20mA, 3.3V | Tx: 400mA @ 11Mb/s Rx: 70mA @ 11Mb/s | Tx: 320mA @ 11Mb/s Rx: 60mA @ 11Mb/s | Tx: 190mA, 3.3V @ 19.5 dBm Rx: 63mA, 3.3V @ 1Mb/s |
| SLEEP MODE CURRENT | Deep Sleep Mode: 105 µA | Power Down Mode: 150µA | Power Down Mode: 150µA | Deep sleep mode <100 µA |
| INTERFACES | GPIO, UART, PCM | SDIO 3.0, HS UART, PCM | GPIO, SDIO 3.0, HS UART, PCM | GPIO, UART, SPI, I2C, I2S, RMT, PWM, USB, LCD, ADC & DAC |
| MICROCONTROLLERS AND MEMORY | | | 88PG823 Power Management IC (PMIC) | Xtensa® 32-bit LX7 320 kB SRAM, 128 kB ROM internal memory Integrated QSPI Flash and PSRAM (size depending on version) |
| OPERATING TEMP. [°C] | -40 to +85 | -30 to +85 | -30 to +85 | -40 to +85 |
| EVALUATION KIT | ENW89819AYKF (EMK without Antenna) | ENWF9201AWEF (mSDIO Dongle) ENWF9201AYEF (SDIO Dongle Kit) ENWF9201AXEF (i.MX Kit) | ENWF9408AVEF (mSD Adapter) ENWF9408AZEUF (i.MX Kit) | ENW49D01AZKF (Board with 4 MB Flash, 2 MB RAM) |


Panasonic Wireless Connectivity solutions encompass a wide range of technologies, with a focus on helping design engineers increase their product's speed-to-market.

The product portfolio covers all of today's latest communication protocols with ready-to-use modules for Bluetooth® Low Energy and Classic. Panasonic offers Bluetooth® Low Energy in combination with all important short range RF technologies: Wi-Fi® (2.4GHz & 5GHz), IEEE® 802.15.4 and NFC-A.

Engineered with design simplicity in mind, Panasonic's Wireless Solutions allow design engineers to quickly extend wireless communication into their feature set.

Connected
by Panasonic Industry






PAN1762
Bluetooth® 5.1

The PAN1762 is a Panasonic Bluetooth® 5.1 Low Energy module based on the Renesas 32-bit i.MX RT1000 microcontroller.

NOW AVAILABLE!

Download on the App Store

GET IT ON Google play



Design and specification are subject to change without notice.

- > Ask Panasonic for technical specification before purchase and/or use.
- > If there is any doubt regarding the safety of this product, kindly inform Panasonic immediately for technical consultation.
- > Qualification of all products: CE, FCC, IC, Bluetooth® QDID if applicable.
- > Different software/profile options available.

Panasonic Industry Europe GmbH
wireless.connectivity@eu.panasonic.com
<https://industry.panasonic.eu>