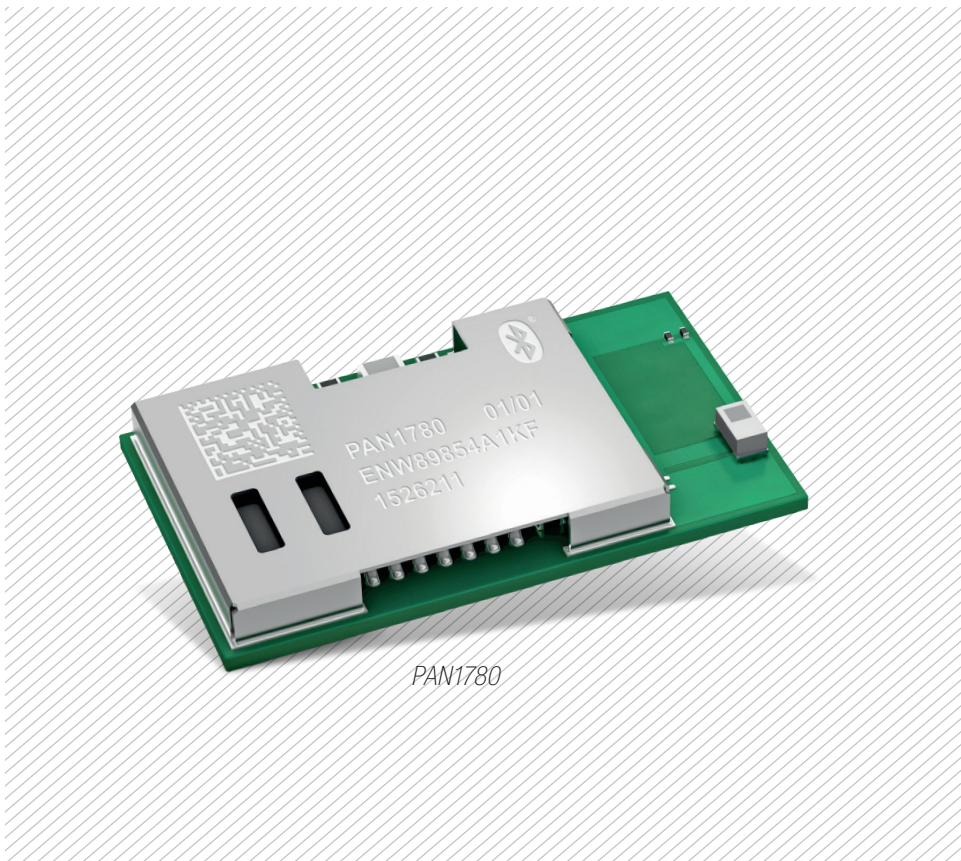# endrichnews

OUR PRODUCT OF THE MONTH:

PAN1780 – NORDIC IC BASED BLUETOOTH LE V5.0 MODULE
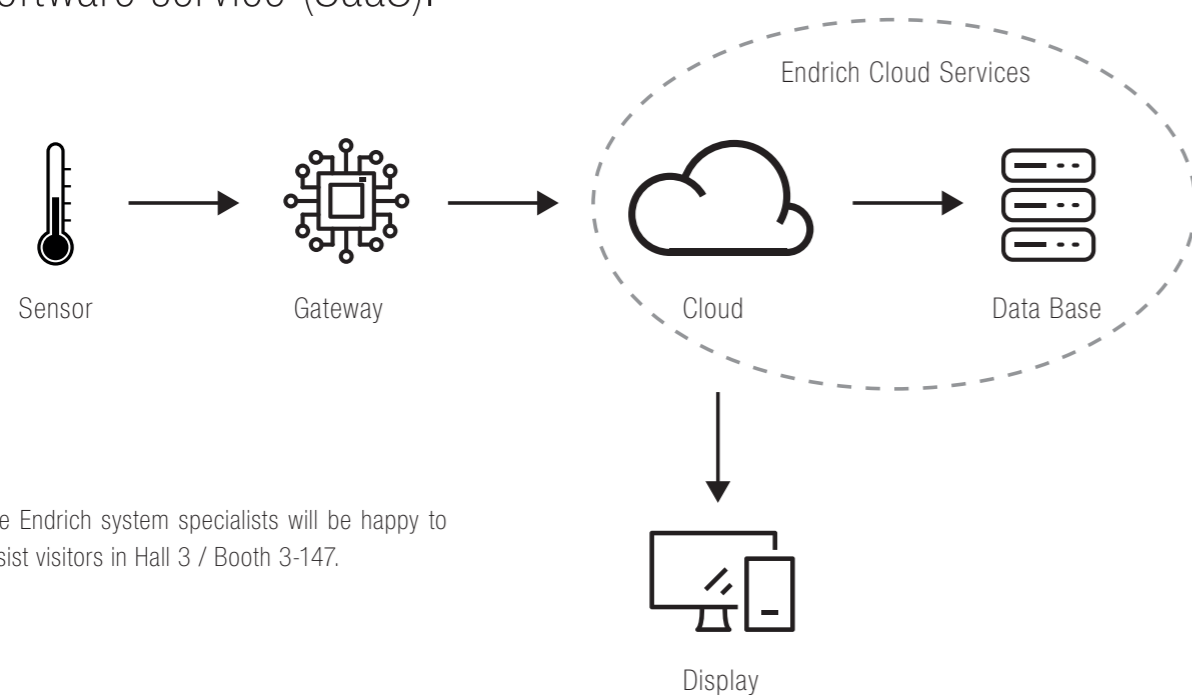

PAN1780

FEATURES

- Surface mount type dimensions: 15.6 x 8.7 x 2.1 mm
- Nordic nRF52840 featuring ARM Cortex-M4F with 64 MHz
- Embedded 1 MB flash memory and 256 kB internal RAM
- LE 2 Mbps high-speed PHY, LE long range coded PHY
- Qualified Bluetooth mesh profile stack
- Chip antenna on board
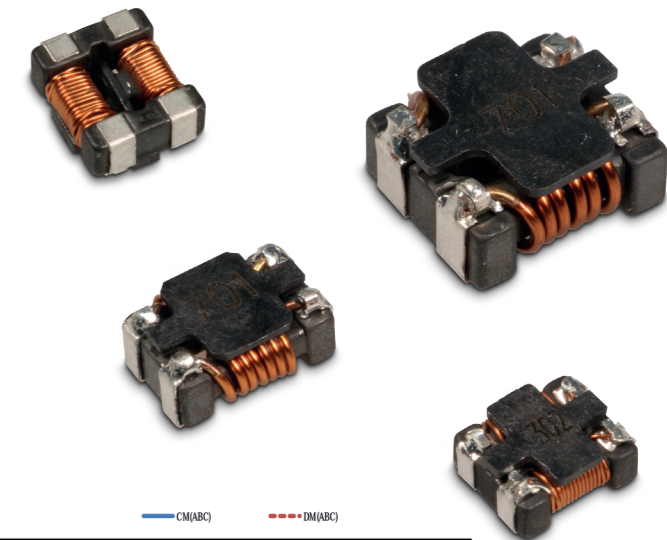
Hall 3 / Booth 3-147

This year everything at Endrich revolves around the topic IoT. Main topics are "Intelligent Connected Sensors", "Data Visualization Gateway" and "Endrich Cloud Services".

In the "Intelligent Connected Sensors" area, live demonstrations will show how the latest LPWA technologies Cat-NB1, Cat-NB2, Cat-M1 and Cat-M2, as well as Bluetooth BT5.0, can be used to quickly and securely transfer data to the cloud. The brand new Core i5 Touch PCs, i.MX8 Embedded Boards, as well as the whitest and fastest e-paper displays are only a small selection of products in the area of "Data Visualization Gateway". With the "Endrich Cloud Services", Endrich provides the embedded developer a multi-layer cloud based solution from the infrastructure (IaaS) to the platform (PaaS) to the software service (SaaS).

Sensor → Gateway → Cloud → Data Base

Endrich Cloud Services

Display

The Endrich system specialists will be happy to assist visitors in Hall 3 / Booth 3-147.

ABC-ATEC introduces their new series of large-current SMD common-mode filters that have higher common-mode impedance compared with previous types and can significantly reduce noise. Due to the low height and small size of these products, it is possible to adapt to the trend towards higher density of portable devices that are becoming smaller and lighter and help to reduce noise for adapter lines and battery lines in many applications. Thanks to the completed AECQ200 qualification, these products are suitable for use in automotive applications.
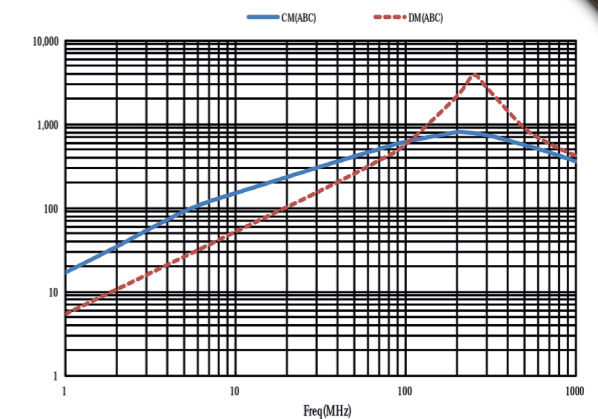

FEATURES

- Large-current SMD common-mode filters
- High common-mode impedance
- Best noise reduction
- AECQ200 qualified

APPLICATIONS

- DC common mode reduction circuit
- Head light (automotive)
- Automation equipment (industrial)
- Audio / visual systems (consumer & IT)

Typical performance curve – impedance vs frequency – on the example of AQF9045701YSB

SERIES	ITEMS	IMPEDANCE		DCR MAX.	IDC MAX.
		TYP.	MIN.		
AQF9045	701	700 Ω	500 Ω	10.00 mΩ	5.00 A
AQF1260	701	700 Ω	500 Ω	6.00 mΩ	8.00 A
AQF1260	102	1000 Ω	750 Ω	14.00 mΩ	6.00 A
AQF7035	301	300 Ω	225 Ω	10.00 mΩ	5.00 A
AQF7035	701	700 Ω	500 Ω	15.00 mΩ	4.00 A

HAVE A LOOK

SQ808 SOC SMART MODULE – PERFECT WIRELESS EXPERIENCE

The SQ808 series is an intelligent LTE Cat.4 module designed with the Qualcomm QCM2150 platform as the basis with a smart and open Android operating.

The module, LCC+LGA packaged for easy patching, integrates core components such as baseband, EMCP, PMU, transceiver and PA, and supports long-distance communication modes such as FDD-LTE / TDD-LTE, WCDMA, TDS-CDMA, CDMA, CDMA2000-EVDO and GSM, as well as short-distance 2.4GHz+5GHz wireless transmission technologies like WiFi / Bluetooth. With built-in LNA, it support the wireless positioning technology. In addition, the module has rich extension interfaces such as UART / SPI / I²C / USB to be connected to an HD+touchscreen, and it supports front and rear cameras.
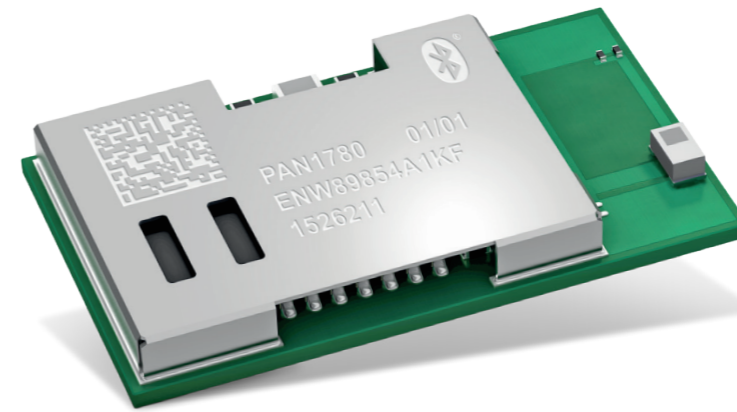
FEATURES

- LTE Cat.4
- Bluetooth v4.2
- WiFi 802.11 a / b / g / n / ac
- GPS / GLONASS / BEIDOU
- Dimensions: 41.0 x 41.0 x 2.8 mm
- Package: 152 LCC + 80 LGA pin
- CPU: Qualcomm® QCM2150 Quad-core ARM® Cortex®-A53 processor up to 1.3 GHz 64-bit CPU
- Memory: 1 GB LPDDR3 + 8 GB eMMC
- Operating temperature: -30 °C to +70 °C
- Operating voltage: 3.3 ~ 4.5 V
- Weight: about 9.3 g
- GPU: Adreno™ 308 GPU
- Display: 1440 x 720 px
- Video Dec: 1080p 30 fps (H.264, HEVC, VP8)
- Video Enc: 1080p 30 fps (H.264)
- Camera: up to 13 Mpx
- Audio: analog audio

APPLICATIONS

- Embedded M2M applications
- IoT gateway
- Smart devices
- POS
- Cash registers
- Intelligent robots
- UAVs
- Smart home
- Security monitoring
- Multimedia terminals
- Smart city

PAN1780 BLUETOOTH® 5.0 LOW ENERGY MODULE

PAN1780 is a Bluetooth 5.0 Low Energy (LE) module, based on the Nordic Single-Chip-Controller nRF52840.

The extremely low power consumption of the PAN1780 makes the module an ideal choice for battery-powered devices.

A higher data rate of 2 Mbps with the high-speed LE 2M PHY or a significantly higher range with the LE-coded PHY at 500 kb/s or 125 kb/s are important Bluetooth 5.0 features of the module. The new channel selection algorithm (CSA#2) improves performance in environments with high interference. The new LE advertising extensions also enable the transmission of much larger amounts of data in connectionless scenarios.

High sensitivity and an output power of up to 8 dBm of the nRF52840 in combination with the LE-coded PHY make the module very attractive for applications where a long range is required.

A Cortex®-M4F processor with 256 kB RAM and 1 MB flash memory easily makes the PAN1780 module a standalone module, eliminating the need for an external processor and saving complexity, space, and cost.

FCC, IC and CE approvals are in preparation.

FEATURES

- Surface mount type dimensions: 15.6 x 8.7 x 2.1 mm
- Same form factor as PAN1026A and PAN1762
- Nordic nRF52840 featuring ARM® Cortex®-M4F with 64 MHz
- Bluetooth 5.0 LE including LE 2M and LE Coded PHY
- Embedded 1 MB flash memory and 256 kB internal RAM
- Includes ARM® TrustZone® CryptoCell 310 and supports secure boot including Root of Trust (RoT)
- Up to 48 general purpose I/Os, which are shared by up to 4 SPI, 2 I²C, 2 UART, 4 PWM, 8 ADC, 1 USB 2.0, 1 NFC-A
- Built-in temperature sensor
- Typical sensitivity:
  - -95 dBm @ 1 Mb/s and -103 dBm @ 125 kb/s
- Typical max. output power:
  - 8 dBm, configurable from -20 dBm in 4 dB steps
- Typical current consumption:
  - 4.8 mA in TX (@ 0 dBm), 4.6 mA in RX mode
  - 0.4 µA in System OFF mode, 1.5 µA with RTC wake up
- On-module DC/DC and LDO regulators with automated low current modes
- Over-the-air update of application software
- Qualified Bluetooth mesh profile stack
- Voltage range: 1.7 V to 5.5 V
- Temperature range: -40 °C to +85 °C

APPLICATIONS

- Industrial IoT
  - Connected sensors
  - Human interface devices
- Smart home / building
  - Smart lighting systems
  - Metering
  - Smart home nodes
- Beacons
  - Proximity tags
  - Tracker
  - Remote controls

Audax Electronics, in partnership with LEDiL and Endrich launches a family of Light Engines compatible with the Daisy lense.
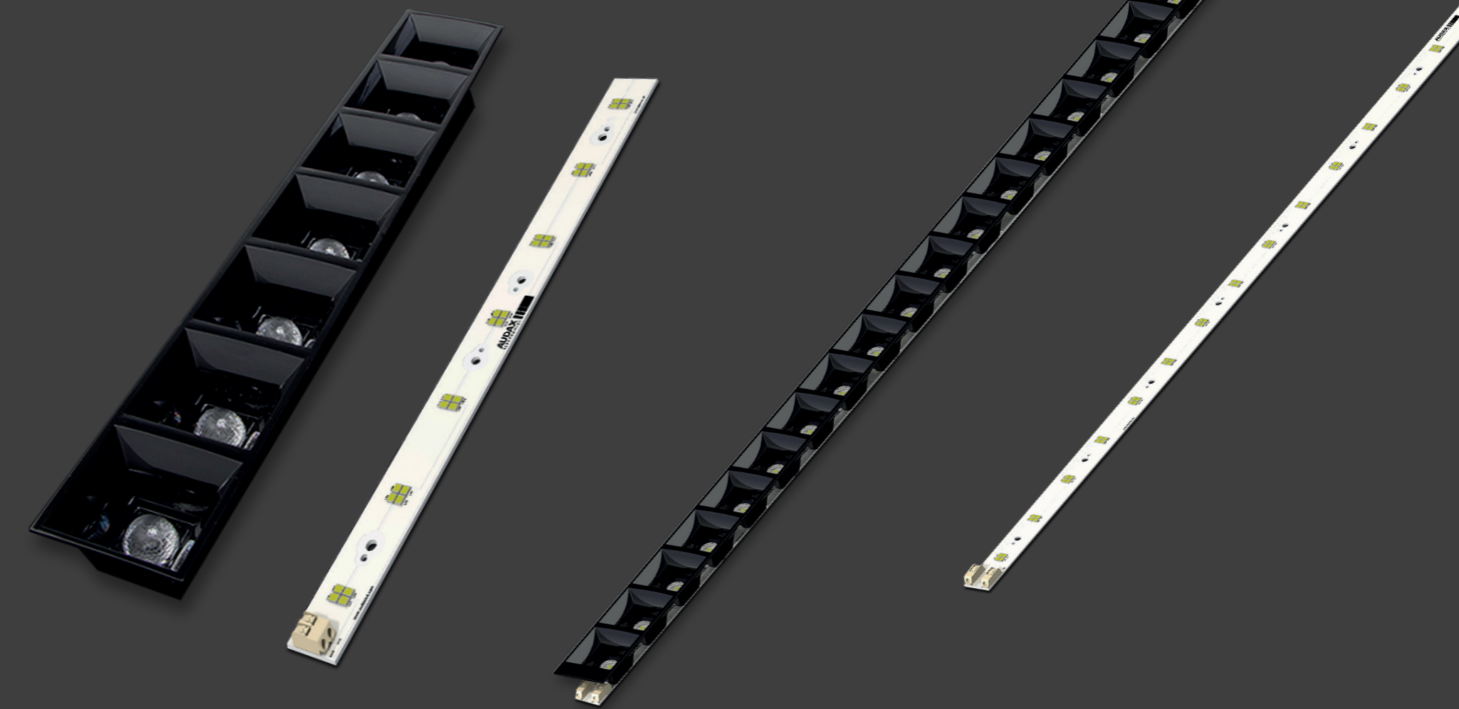
Combined together (Light Engines + Lenses) you can bring a beautiful brilliance without glare, increasing the wellbeing in the workspace. This is the concept of the Dark Light (a light that is so discrete you can barely see the light source). The range of products covers all available models: 4 x 1, 2 x 2, 7 x 1 and 28 x 1. The Light Engines are available in White or Tunable White.

DAISY-4x1 LENSES	LIGHT ENGINE WITH 16 LEDs 156.0 x 20.0 mm
CN16604_DAISY-4X1-WW ~ 80° Black	80210700100 CCT 3000 K CRI 80
CN16606_DAISY-4X1-W ~ 50° Black	80211000100 CCT 3500 K CRI 80
CN16785_DAISY-4X1-WW-WHT ~ 80° White	80210800100 CCT 4000 K CRI 80
CN16788_DAISY-4X1-W-WHT ~ 50° White	80255000100 CCT Tunable White CRI 80

DAISY-2x2 LENSES	LIGHT ENGINE WITH 16 LEDs 62.0 x 62.0 x 1.6 mm
CN16868_DAISY-2X2-WW ~ 80° Black	80244900100 CCT 3000 K CRI 80
CN16869_DAISY-2X2-W ~ 50° Black	80250600100 CCT 3500 K CRI 80
CN16877_DAISY-2X2-WW-WHT ~ 80° White	80250700100 CCT 4000 K CRI 80
CN16878_DAISY-2X2-W-WHT ~ 50° White	80254900100 CCT Tunable White CRI 80

DAISY-7x1 LENSES	LIGHT ENGINE WITH 28 LEDs 277.5 x 20.0 mm
CN16873_DAISY-7X1-WW ~ 80°, Black	80242700100 CCT 3000 K CRI 80
CN16874_DAISY-7X1-W ~ 50°, Black	80242800100 CCT 3500 K CRI 80
CN16879_DAISY-7X1-WW-WHT ~ 80°, White	80242900100 CCT 4000 K CRI 80
CN16880_DAISY-7X1-W-WHT ~ 50°, White	80255100100 CCT Tunable White CRI 80
CN17052_DAISY-7X1-WW-MATT ~ 80°, Black	
CN17053_DAISY-7X1-W-MATT ~ 50°, Black	
CN17226_DAISY-7X1-WW-WHT-MATT, ~ 80°, White	
CN17227_DAISY-7X1-W-WHT-MATT, ~ 50°, White	

DAISY-28x1 LENSES	LIGHT ENGINE WITH 112 LEDs 1140.0 x 20.0 mm
CN16586_DAISY-28X1-WW ~ 80° Black	80210500100 CCT 3000 K CRI 80
CN16605_DAISY-28X1-W ~ 50° Black	80210600100 CCT 3500 K CRI 80
CN16786_DAISY-28X1-WW-WHT ~ 80° White	80210900100 CCT 4000 K CRI 80
CN16787_DAISY-28X1-W-WHT ~ 50° White	80255200100 CCT Tunable White CRI 80

RAYSTAR 2.08 INCH 256 x 64 OLED DISPLAY

REX025664A and REA02566A are COG graphic OLED displays which support a resolution of 256 x 64 pixels. Both OLED displays offer a diagonal size of 2.08 inches and are built in with SSD1362 driver IC. REX025664A can be controlled via 6800/8080 8-bit parallel, I²C, 3-wire and 4-wire SPI interface. The supply voltage for logic of REX025664A is 3 V and the typical power consumption is 15 mA @ 12 Vcc. In difference to REX025664A, the PCBA version REA02566A supports a single voltage module which can be used with 3 V or 5 V Vcc (I/O level 5 V to 3 V, with conversion circuit) and 4-wire SPI interface. The power consumption is 90 mA @ 3 Vcc (typical value). Both displays support 16 gray scale levels and feature an operating temperature from -40 °C to +80 °C.

APPLICATIONS

- Smart home
- Meter devices
- Personal care appliances
- Health devices

HAVE A LOOK

HAVE A LOOK

FEATURES REX025664A

- Module dimension: 60.5 x 19.9 x 1.61 mm
- Active area: 51.18 x 12.78 mm
- Dot matrix: 256 x 64 Dots
- Pixel size: 0.18 x 0.18 mm
- Pixel pitch: 0.20 x 0.20 mm
- Display mode: passive matrix
- Duty: 1/64 duty
- Gray scale: 4 bits
- Display color: white / yellow
- IC: SSD1362
- Interface: 3-wire and 4-wire SPI, I²C, 6800, 8080
- Size: 2.08 inch

FEATURES REA025664A

- Module dimension: 70.0 x 22.0 x 1.71 mm
- Active area: 51.18 x 12.78 mm
- Dot matrix: 256 x 64 Dots
- Pixel size: 0.18 x 0.18 mm
- Pixel pitch: 0.20 x 0.20 mm
- Display mode: passive matrix
- Duty: 1/64 duty
- Gray scale: 4 bits
- Display color: white / yellow
- IC: SSD1362
- Interface: SPI
- Size: 2.08 inch

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