

PAN1780-AT

Bluetooth® Low Energy Module with AT Command Set



[OVERVIEW]

The PAN1780-AT is a Bluetooth 5 Low Energy (LE) module based on the Nordic nRF52840 single-chip controller with integrated BlueRadios nBlue™ Bluetooth AT.s LE Command Set.

For information on the BlueRadios nBlue Bluetooth AT.s LE Command Set please contact your local Panasonic Sales representative.

Bluetooth 5 features additionally a higher symbol rate of 2 Mbps using the high-speed LE 2M PHY or a significantly longer range using the LE Coded PHY at 500 kb/s or 125 kb/s. The new channel selection algorithm (CSA#2) improves the performance in high interference environments. Furthermore, the new LE advertising extensions allow for much larger amounts of data to be broadcasted in connectionless scenarios.

An output power of up to 8 dBm and the high sensitivity of the nRF52840 in combination with the LE Coded PHY make the module very attractive in applications, where a long range is required.

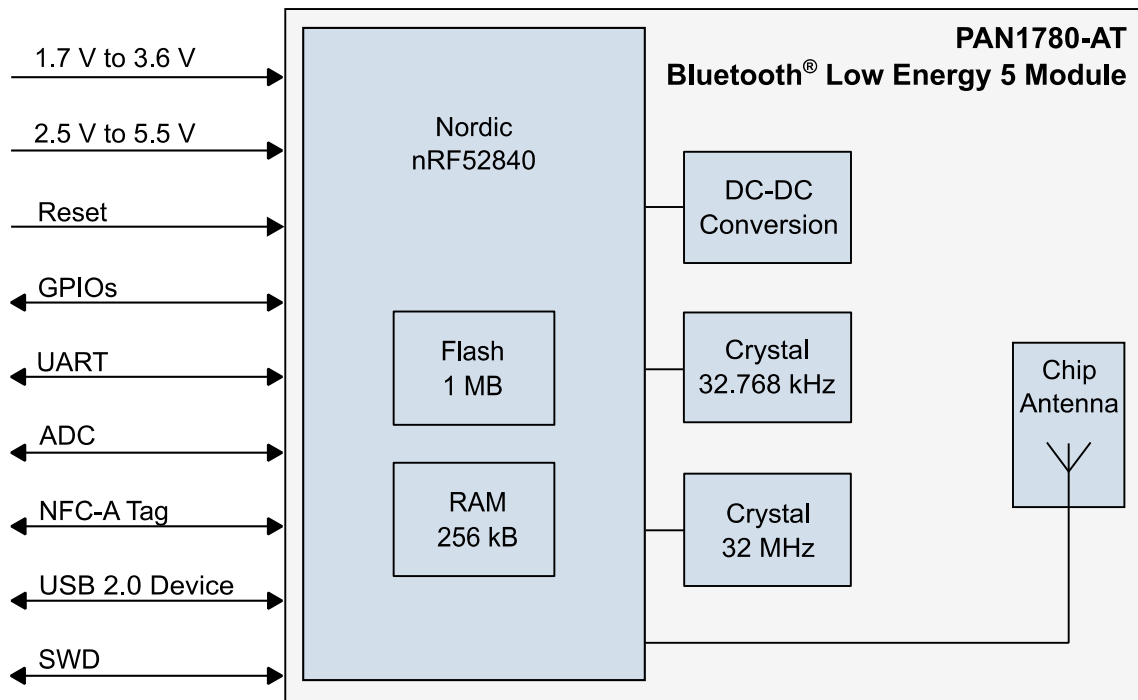
In addition the ultra-low current consumption of the PAN1780-AT make the module an ideal choice for battery powered devices.

The PAN1780-AT also supports Type 2 Near Field Communication (NFC-A) for use in simplified pairing and payment solutions (external antenna required).

[FEATURES]

- Surface mount type dimensions: 15.6 mm x 8.7 mm x 2 mm
- Same footprint as PAN1780
- Nordic nRF52840 featuring ARM® Cortex®-M4F with 64 MHz
- Bluetooth 5 LE including LE 2M and LE Coded PHY
- Embedded 1 MB flash memory and 256 kB internal RAM
- Up to 46 General Purpose I/Os (GPIO), which are shared with 1 UART, 8 ADC's, 1 NFC-A, and nRESET input
- USB 2.0 full-speed device interface
- Built in temperature sensor

[BLOCK DIAGRAM]



[BLUETOOTH]

- LE 2 Mbps high speed PHY, LE long range Coded PHY
- LE advertising extensions (advertising on 40 channels total)
- Channel selection algorithm #2
- LE secure connections
- Over-the-air update of AT Command Set

[TECHNICAL CHARACTERISTICS]

- Typical sensitivity: -95 dBm at 1 Mb/s and -103 dBm at 125 kb/s
- Typical max. output power: 8 dBm, configurable from -20 dBm in 4 dB steps and -40 dBm in whisper mode
- Typical current consumption: 4.8 mA in Tx (at 0 dBm) and 4.8 mA in Rx mode
- Typical current consumption: 0.4 μ A in System OFF mode
- On-module DC-DC and LDO regulators with automated low current modes
- Voltage range: 1.7 V to 5.5 V
- Temperature range: -40 °C to 85 °C