## Audio streaming at the lowest power

## General description

The icyTRX-DM ultra-low-power RF transceiver IP is designed to meet 2.4 GHz standards like Bluetooth Classic (BR/EDR), Bluetooth Low Energy, 802.15.4 PHY Layer (e.g. ZigBee), and proprietary standards.

icyTRX-DM IP targets by far the lowest power consumption together with state-of-the-art performances (sensitivity, interferers rejection) and with minimal cost.

Thanks to its built-in LDOs, its fully programmable modem and its interface compatible with leading BT baseband controllers, the icyTRX-DM IP is optimized for easy integration into ASICs and SoCs.

## Key features

- Bluetooth 5.2 Dual-Mode radio, including EDR and LE 2 Mbps to support both BT Classic audio and LE Audio
- Long Range and Direction Finding (DF) BLE options
- Flexible modem compatible with 802.15.4-2015 and other modulations (programmable pulse shape, data rate and modulation index)
- Programmable packet handler, supporting several packet structures, including Link Layer functionalities thanks to hardware accelerators (CCM-AES, CRC,...)

## Key specifications

- 22 nm CMOS
- Industrial temperature range: -40°C to +85°C
- Average power consumption for stereo audio streaming: 1.1 mW (Bluetooth EDR) / 0.6 mW (BLE)
- Best-in-class sensitivity: BLE -98 dBm; EDR -94 dBm
- Configurable output power: -20 dBm to +10 dBm

## Benefits

- Game changing autonomy on a cell battery
- Industry leading budget link for reliable audio streaming
- Resilience to interferers for crowded RF environment
- Backward compatibility thanks to Classic Audio
- Lowest possible system cost
- Hassle-free integration

## Typical applications

- Hearing Aids, earbuds & headsets
- Wearables, connected sports equipment
- Indoor positioning, asset tracking, beacons
- Wireless sensor networks
- Alarms and security systems

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