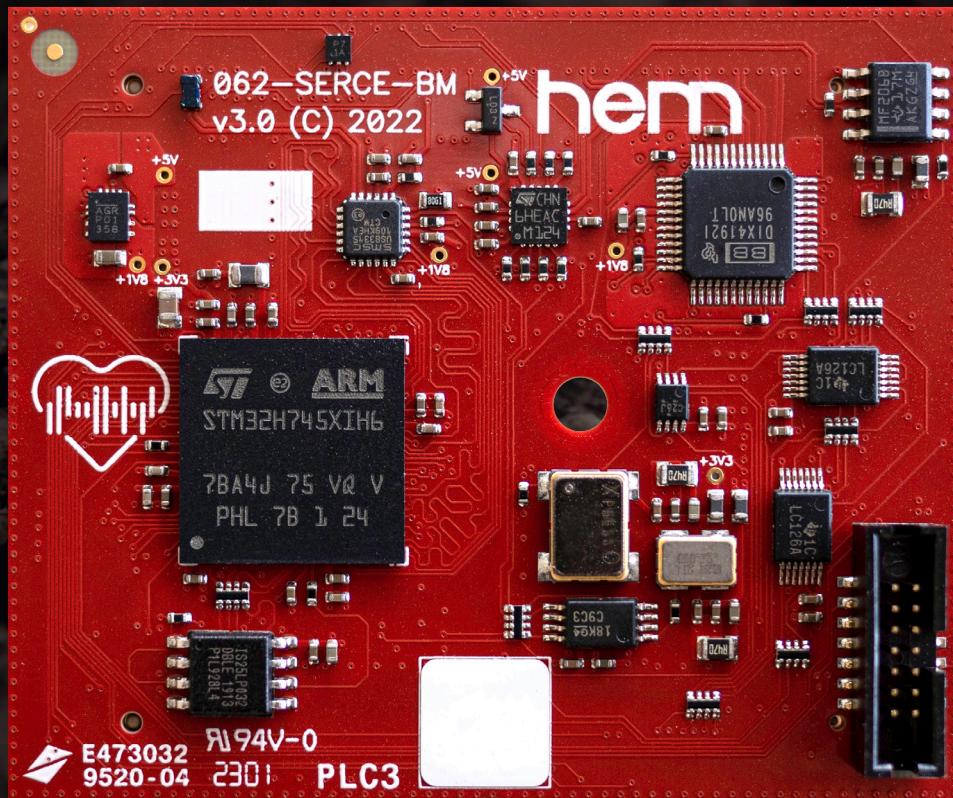# hem

SERCE by HEM

Digital audio system on a module

SERCE, all digital processes condensed into a single board

HEM proudly introduces **SERCE**. The name SERCE (pronounced: ˈsɛrt͡sɛ) is Polish for heart. With SERCE you can focus on designing your product with everything digital already in place, programmed into one single chip. SERCE is a compact module with a complete, advanced digital system built right into it. It offers a complete solution for quality audio playback from a digital input to any DAC chip. SERCE will offer the easiest way to design a wide range of hi-fi products of very high quality in a very cost effective way.

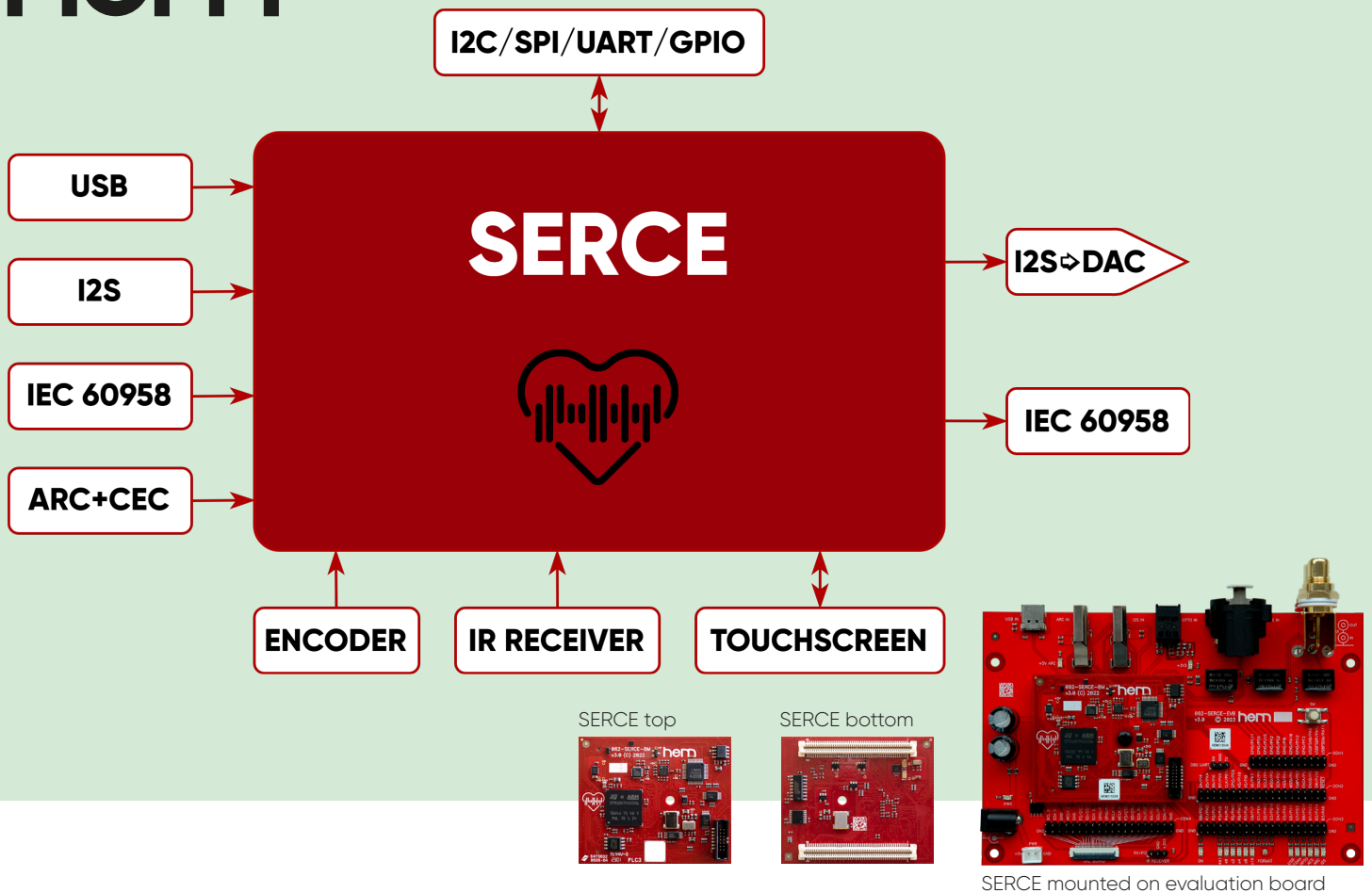|	
Optimised for audio	all digital inputs are optimised for audio, including USB, I2S and IEC 60958 (AES3, S/PDIF).
Made for ARM	all digital signals are optimised to work with the ARM Cortex M7 Core processor, including MQA (needs license from MQA Ltd.) No extra programming needed.
Digital done well	twenty years' worth of experience in digital audio found its way into SERCE. And yes, no extra programming needed.
One for all	SERCE brings high end quality to a wide range of audio equipment.
Compact form factor	full functionality on just 50 mm x 60 mm PCB real estate.

hem


```
                    I2C/SPI/UART/GPIO
                            ↕
  USB  →                              
  I2S  →           SERCE            →  I2S⇨DAC
  IEC 60958 →                          
  ARC+CEC →         ♥               →  IEC 60958
                    ↑    ↑    ↕
              ENCODER IR RECEIVER TOUCHSCREEN
```

SERCE top   SERCE bottom

SERCE mounted on evaluation board

Working in **perfect unison**

SERCE offers a set of audio-optimised digital inputs that work in unison with a custom programmed ARM Cortex processor. The module measures 50 mm x 60 mm with all signals connected to board-to-board connectors. It supports PCM up to 32-bit / 768 kHz, DSD up to x512 (44.1 kHz and 48 kHz), DoP up to x256, and MQA* with full decoder and renderer capability, USB HID, DoP decoding, and signal level calculation. The SERCE module features USB Audio Class 2.0 input, up to 3x IEC 60958 (i.e. S/PDIF, AES3), 1x External I2S (differential, PSAudio/DSD/SerceI2S), 1x TV ARC with CEC controlling, IR decoder, and internal I2S input and output for any extension. The Cortex M7 ARM processor is dedicated for audio processing and USB including DFU secure updater and custom USB HID port. The system is highly configurable including formats, inputs, USB identifiers and names, MQA mode and renderer blobs. Please feel free to inform about specific applications.

Try out SERCE

Evaluation board comes with AES3 (XLR), S/PDIF coaxial (RCA), S/PDIF optical (TOSLINK), TV ARC (HDMI socket), I2S (HDMI socket), USB-C, DAC/mainboard socket (FFC/FPC) and GPIO (2.54 mm pins) connectors. This board can be used in end products too.

Price **SERCE** evaluation kit (module + board): 295 EUR/USD.
Price **SERCE** module: depends on quantity, please call us or send an e-mail for more information.

*MQA is copyright of MQA Ltd. It is necessary to partner with MQA Ltd. to be able to use MQA functions.