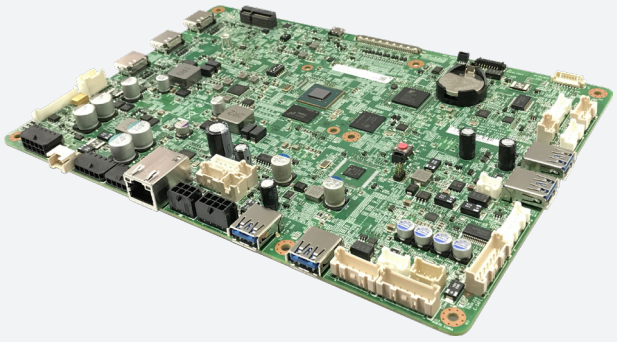
UFC 100

ARM Cortex®-A53 Quad Core Processor

Fitness Console Controller



Main Features

- ARM Cortex®-A53 Quad Core Processor with 1.5GHz frequency
- Console system integration ready for 15.6”/21.5”/23.8”/32” display & touchscreen
- Display interface: 1 x LVDS dual channel, 1 x HDMI
- 2 x HDMI-IN 1.4
- Program rich multimedia source AV decoder (HDMI-IN/IPTV/ TV Tuner)
- Android/Linux OS porting service and GUI design by request
- Support all SDK of Android/Linux BSP, optimizing and re-designing the drivers

Product Overview

The UFC 100 is designed specifically for use as a fitness console engine. It is powered by NXP i.MX8MQ Cortex®-A53 quad-core processor with a clock speed of 1.5GHz, providing exceptional processing power, audio & video decoding capabilities required for fitness applications to manage complex media sources and all connected devices.

Some of its key I/O features for connecting fitness peripherals included ten UART ports, safety key, several USB ports for OTG and USB 3.0 5VC/2.1A charging ready for MFI; dual-display support through HDMI-OUT 2.0 and LVDS, with resolutions up to 1920 x 1080; audio plug detect, two stereo output, and two HDMI-IN for media sources. It’s also enabled the expandable features by add-on modules such as Wi-Fi/BT connectivity, Qi wireless charging, NFC, ANT+, and TV tuner modules.

NEXCOM provides a comprehensive range of services, including mechanical design, final console system integration, pre-installed OS & GUI, and function validation for sheet metal frames that incorporate industrial-grade LCDs and touchscreens ranging in size from 16 to 32 inches. Customers can select the option of optical bonding, which increases durability, reduces glare, and eliminates condensation. Our streamlined stack-up mechanical design for the UFC 100 Console Controller simplifies the integration process, making it easier to package the panel touch computing system into a customer-defined enclosure. This design also reduces maintenance costs by providing easy access to each peripheral. The UFC 100 is custom-made for fitness equipment developers looking to build GUI and application software effectively.

Specifications

CPU

- NXP i.MX 8M Quad processor with 1.5 GHz frequency
- Quad Arm Cortex®-A53 core and Cortex-M4

Memory

- LPDDR4 3GB

Storage

- eMMC 32GB

Display Interface

- LVDS dual channel
- HDMI

Ethernet

- 1 x RJ45 Gigabit LAN with LED

Wireless

- Wi-Fi 802.11 a/b/g/n/ac
- Bluetooth 5.0

USB Port

- 1 x OTG USB 2.0 Micro USB (data only)
- 1 x USB 3.0 Type A (5VDC/2.1A)
- 3 x USB 3.0 Type A (5VDC/1A)
- 1 x USB 2.0 pin header

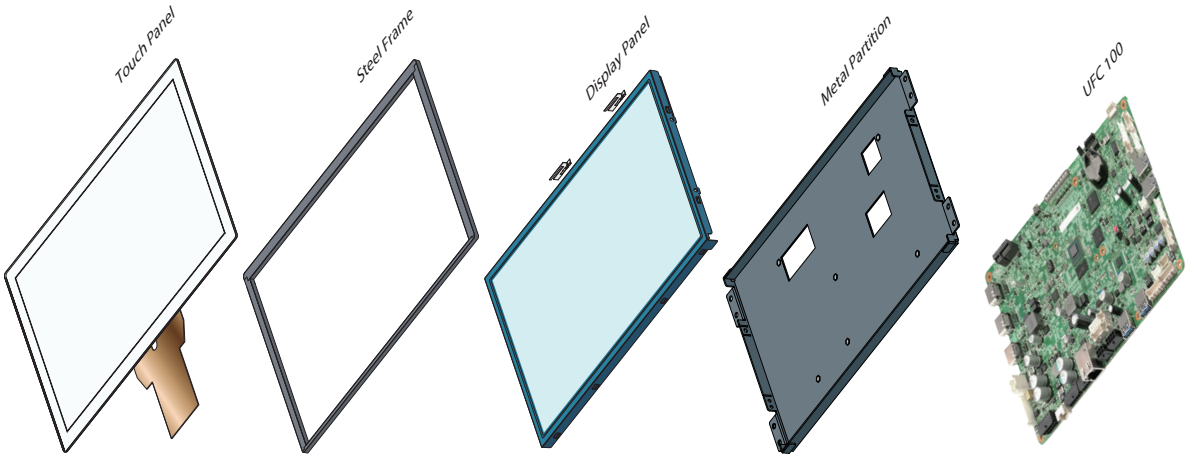
Audio

- 2 x Stereo outputs and plug detect
- 32Ohm, 40mw, 5V Max load

Other I/O Connector

- 1 x Micro SD slot
- 1 x Speaker connector

Stack-up Mechanical Design



- 1 x FAN connector (12V)
- 1 x Safety key connector
- 1 x Qi 12V connector
- 2 x HDMI-IN 1.4
- 1 x Recovery button
- 2 x I2C
- 10 x UART port
- 1 x Power connector
- 2 x Head phone connector
- 1 x M.2 2230 for Wi-Fi/BT (SDIO 3.0)

Environment

- Operating temperature: 0°C ~ 60°C
- Storage temperature: -20°C ~ 70°C
- Operating humidity: 10%~90% relative humidity, non-condensing

Power Requirement

- DC 12V Power input

Software Support

- Yocto 3.0, Ubuntu20.04,
- Android Version 9.1 or above

Display Size

- 15.6", 21.5", 23.8", 32" TFT LCD

Resolution

- 1366 x 768, up to 1920 x 1080

Ordering Information

- **UFC 100 (P/N: TBD)**
  Low power embedded board with i.MX 8M Quad processor, LPDDR4 3GB, eMMC 32G, 1 x LVDS dual channel, 1 x HDMI, 1 x RJ45 GbE LAN