MIKROE-2276

OVERVIEW

Summary

A smart display solution, **mikromedia HMI 3.5" Res** has a **320x240px** color display with a resistive touch panel on the front, and a powerful **FT900Q** 32-bit MCU with additional essential circuitry on the back - making it a standalone but cost-effective solution suitable for industrial applications.

MCU

mikromedia HMI boards are driven by FTDI Chip's FT900Q with their proprietary **32-bit RISC core** with industry-leading performance. With execution from shadow memory, the MCU can achieve speeds of **3.1 DMIPS/MHz at 100 MHz**. FT900Q has 256KB of Flash memory, a small part of which is taken by the **built-in bootloader**.

Additional circuitry

The concept of mikromedia HMI is to keep only the essential components that simplify its integration into a final product, whilst keeping overall costs down.

The board integrates a **microSD card** for expanding storage capacity, a **haptic feedback motor**, small **audio speaker**, and a **micro USB connector**. A connector for interfacing the MCU with external electronics, along with a separate connector for FT900Q's **parallel camera interface**.

Display

mikromedia for HMI 3.5" Res has a high-quality **Riverdi display** with **16.7M color depth** and **550 NIT brigtness**. The display is driven by a FT812 graphic controller. A **mounting frame** surrounding the screen simplifies integration.

KEY FEATURES

- **Size:** 3.5”
- **Resolution:** 240x320
- **Brightness:** 450
- **MCU:** FT900Q
  - **Speed:** 100MHz; 310 DMIPS
  - **Memory:** 256 KB Flash
  - **Peripherals include:** 2xCAN, 2xSPI, 2xI2C, I2S, UART
- **Graphic controller:** FT812
- **Touchscreen:** Resistive
- **Interface:** Main connector, Camera connector, Micro USB
- **Storage:** 8MB Flash + MicroSD card slot
- **Audio speaker**
- **Mounting frame**

MIKROE-2276

COMPARISON CHART

See how **mikromedia HMI 3.5" Res** compares with the rest of the product line.

Product Name	Size	Resolution	Touch Panel	Luminosity	Active Area	Graphics Controller	Haptic Feedback	Dot Pitch (mm2)
mikromedia HMI 3.5"	3.5"	320 x 240	None	540	70.08 x 52.56	FT812	No	0.73 x 0.219
mikromedia HMI 3.5" Res	3.5"	320 x 240	Resistive	450	70.08 x 52.56	FT812	No	0.73 x 0.219
mikromedia HMI 3.5" Cap	3.5"	320 x 240	Capacitive	480	70.08 x 52.56	FT813	No	0.73 x 0.219
mikromedia HMI 4.3"	4.3"	480 x 272	None	550	95.04 x 53.86	FT812	Yes	0.066 x 0.198
mikromedia HMI 4.3" Res	4.3"	480 x 272	Resistive	440	95.04 x 53.86	FT812	Yes	0.066 x 0.198
mikromedia HMI 4.3" Cap	4.3"	480 x 272	Capacitive	500	95.04 x,53.86	FT813	Yes	0.066 x 0.198
mikromedia HMI 4.3" UXB	4.3"	480 x 272	Capacitive, UX Black	500	95.04 x 53.86	FT813	Yes	0.066 x 0.198
mikromedia HMI 4.3" UXW	4.3"	480 x 272	Capacitive, UX White	500	95.04 x 53.86	FT813	Yes	0.066 x 0.198
mikromedia HMI 5"	5.0"	800 x 480	None	600	118.00 x 64.80	FT812	Yes	0.045 x 0.135
mikromedia HMI 5" Res	5.0"	800 x 480	Resistive	480	118.00 x 64.80	FT812	Yes	0.045 x 0.135
mikromedia HMI 5" Cap	5.0"	800 x 480	Capacitive	510	118.00 x 64.80	FT813	Yes	0.045 x 0.135
mikromedia HMI 5" UXB	5.0"	800 x 480	Capacitive, UX Black	510	118.00 x 64.80	FT813	Yes	0.045 x 0.135
mikromedia HMI 5" UXW	5.0"	800 x 480	Capacitive, UX White	510	118.00 x 64.80	FT813	Yes	0.045 x 0.135
mikromedia HMI 7"	7.0"	800 x 480	None	400	154.08 x 85.92	FT812	Yes	0.045 x 0.135
mikromedia HMI 7" Res	7.0"	800 x 480	Resistive	320	154.08 x 85.92	FT812	Yes	0.045 x 0.135
mikromedia HMI 7" Cap	7.0"	800 x 480	Capacitive	350	154.08 x 85.92	FT813	Yes	0.045 x 0.135

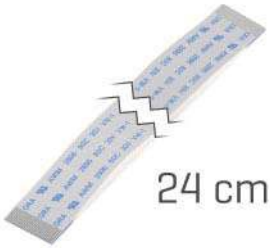
mikromedia HMI 7" UXB	7.0"	800 x 480	Capacitive UX Black	350	154.08 x 85.92	FT813	Yes	0.045 x 0.135
mikromedia HMI 7" UXW	7.0"	800 x 480	Capacitive UX White	350	154.08 x 85.92	FT813	Yes	0.045 x 0.135

TOOLS AND ACCESSORIES

- There's no use for a fast chip if it slows you down as a developer and mikroC, mikroBasic and mikroPascal for FT90x do just the opposite — they make you more productive. Out of the box, the compilers have more than **500 functions** and more than **150 examples**. Currently, these are the only dedicated FT90x compilers on the market. mikromedia HMI developers should look no further.

- Visual TFT is a drag-and-drop GUI design tool that generates code compatible with mikroC, mikroBasic and mikroPascal for FT90x. It dramatically simplifies the process of designing and programming graphical user interfaces. With full support for both FT812 and FT813 graphic controllers, Visual TFT is the final part of the mikromedia HMI development equation.

- The mikromedia HMI breakout board is a simple accessory that conveniently enables developers to access pins from the onboard FT900Q MCU. This simplifies development in the prototyping phase. This board also contains a microUSB port, an RJ-45 ethernet connector, as well as an external programmer connector (ideally used with mikroProg for FT90x).



- The mikromedia HMI board connects to external electronics via standard 24-pin flat cable connectors. **A single cable is included in the mikromedia box**. With the breakout board you get two. Replacement cables are also available if the original cables wear out after prolonged use.