Here are some good PIC microcontroller options to consider for driving a MIPI TFT LCD display:

PIC24FJ256GA710 - This is a 16-bit PIC24 with plenty of RAM (64KB), flash memory (256KB), up to 80 GPIO, hardware SPI, I2C and parallel ports. It has good processing power with its 16-bit core.

PIC32MX570F512L - A powerful 32-bit MCU with 512KB flash, 128KB RAM, USB, Ethernet, CAN and many other features. Lots of I/O pins and peripherals. The 32-bit performance helps for graphics.

PIC32MK0512GPD064 - A lower cost but good performing 32-bit PIC32MK with 64KB RAM and 512KB flash. Good balance of features and I/O for an LCD driver.

dsPIC33EP256MU806 - A 16-bit dsPIC with 70 GPIO, hardware SPI, I2C, 256KB flash, 52KB RAM. Good for high resolution or TFT displays.

dsPIC33EV32GM106 - Lower cost 16-bit dsPIC, 64KB Flash, 16KB RAM. Can handle smaller TFTs and OLED displays.

The ideal choice depends on your display resolution, interface, memory needs, and other requirements. I'd recommend starting with a PIC32 like PIC32MX570F512L or PIC32MK0512GPD064 since they have good processing power for graphics and plenty of peripherals.

Make sure to check the LCD interfacing signals against the PIC's hardware peripherals and I/O pins. Also factor in development tools and compiler support.

what is 32-bit MIPS MCU

MIPS (Microprocessor without Interlocked Pipeline Stages) is a RISC (Reduced Instruction Set Computer) CPU architecture developed by MIPS Technologies.

A 32-bit MIPS MCU refers to a microcontroller that uses a 32-bit MIPS processor core as its CPU. Some key features of 32-bit MIPS MCUs:

32-bit MIPS instruction set architecture provides high performance and efficiency.

Capable of running at high clock speeds due to RISC architecture.

Supports 32-bit address space allowing access to large memory.

32-bit registers and data paths improve computational throughput.

MIPS has fixed length 32-bit instructions suitable for pipelining.

MIPS has a load-store architecture with a large number of general purpose registers.

MIPS architecture has straightforward instruction decoding, facilitating high frequency operation.

Embedded MIPS cores are popular in consumer electronics, networking, automotive and industrial applications.

Leading MIPS MCU families include Microchip PIC32, MIPS MicroAptiv, AndesCore, Ingenic T-Series, etc.

MIPS MCUs offer high performance complemented by low power modes for power sensitive designs.

MIPS offers an open architecture available under license to semiconductor companies.

In summary, 32-bit MIPS MCUs provide a high performance, power efficient architecture well suited for data-intensive embedded applications requiring a full 32-bit address space and high throughput.

Certainly! Microchip offers a wide range of PIC microcontrollers that can be used to drive custom MIPI TFT LCD displays. Here are a few examples:

1. PIC32MZ DA: This is a high-performance microcontroller that features a 200 MHz MIPS M-class core and a dedicated graphics processing unit (GPU). It also includes a MIPI DSI host controller that can drive MIPI TFT LCD displays. 20$
2. PIC32MZ EF: This is another high-performance microcontroller that features a 200 MHz MIPS M-class core and a dedicated hardware acceleration for graphics and audio. It also includes a MIPI DSI host controller that can drive MIPI TFT LCD displays.
3. PIC32MX274: This is a low-power microcontroller that features a 48 MHz MIPS M4K core and a graphics accelerator module (GAX). It also includes a MIPI DSI host controller that can drive MIPI TFT LCD displays.
4. PIC32MX470: This is another low-power microcontroller that features a 120 MHz MIPS M4K core and a graphics accelerator module (GAX). It also includes a MIPI DSI host controller that can drive MIPI TFT LCD displays.

There are several other PIC microcontrollers available from Microchip that can be used to drive custom MIPI TFT LCD displays. The specific microcontroller that would be required depends on the specific requirements of your application, such as the performance, power consumption, and interface requirements. It's recommended to consult with Microchip's technical support team to determine the best microcontroller for your application.