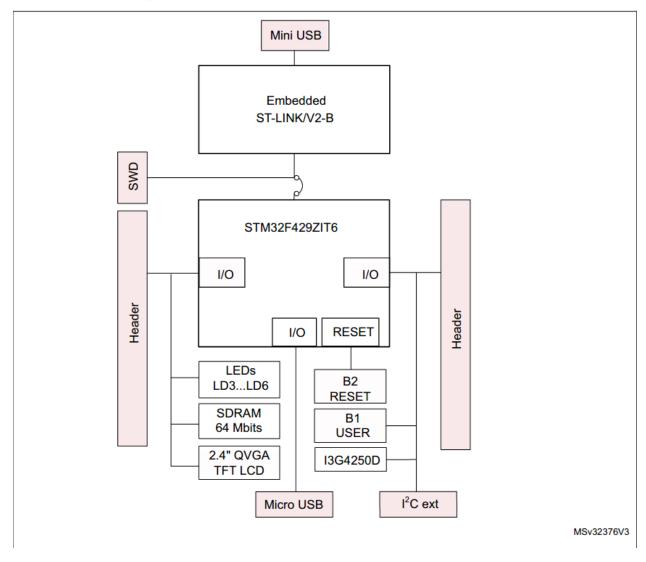
# **Project Board Comparison**

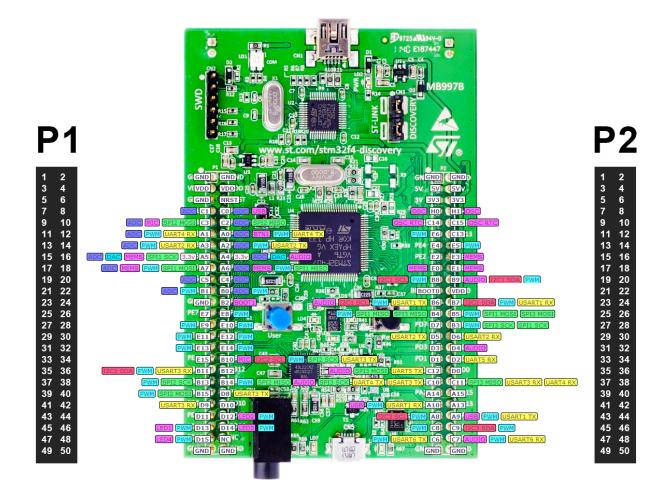
	Final Project	Assignment
Eval Board	32F429IDISCOVERY	MIMXRT1010-EVK
Processor	STM32F429ZIT6	MIMXRT1011DAE5A
Processor Family	ARM Cortex M4	ARM Cortex M7
Max Clock Frequency	180 MHz	500 MHz
Flash	2 MB	64 KB
Ram	256 KB	128 KB
Other memory	64 Mb SDRAM	128 Mb QSPI Flash
ADC	24x12b	15x12b
Peripherals	- 2.4" QVGA TFT LCD (SPI/RGB) - ST MEMS motion sensor (SPI) - Two push-buttons (GPIO)	<ul><li>- Audio codec (I2S)</li><li>- 4-pole audio headphone jack</li><li>- Microphone</li><li>- Optional Ecompass (I2C)</li></ul>
User Manual	<u>UM1670</u>	MIMXRT1010EVKHUG (login req)
Application Note	AN3990 Upgrading STM32F4DISCOVERY board firmware using a USB key	AN13206 : Modifying debug firmware on i.MX RT boards with LPC4322 debug probe
Board Cost	- <u>Digikey</u> : \$29.90 - <u>Mouser</u> : \$29.90	- <u>Digikey</u> : \$44.09 - <u>Mouser</u> : \$44.09
Board In Stock	- Digikey : 10 in stock - Mouser : 35 in stock	- <u>Digikey</u> : 76 in stock - <u>Mouser</u> : 331 in stock
Processor Cost	- <u>Digikey</u> : \$20.60 - <u>Mouser</u> : \$20.60	- <u>Digikey</u> : \$6.71 - <u>Mouser</u> : \$7.01
Processor In Stock	- Digikey: 0 - Mouser: 0 (53 weeks)	- <u>Digikey</u> : 0 - <u>Mouser</u> : 0 (112 weeks)

### 32F429IDISCOVERY

## **Board Block Diagram**



- The male headers P1 and P2 can connect the STM32F429 Discovery board to a standard prototyping/wrapping board. STM32F429ZIT6 GPIOs are available on these connectors. P1 and P2 can also be probed by an oscilloscope, a logic analyzer, or a voltmeter
- I2C External Interface



### Processor Block Diagram

10x 16-bit timers

2x 32-bit timers

#### System Chrom-ART Accelerator™ Power supply Connectivity ART Accelerator™ 1.2 V internal regulator POR/PDR/PVD TFT LCD controller Xtal oscillators 180 MHz 6x SPI, 2x I2S, 3x I2C Arm® Cortex®-M4 32 kHz + 4 ~26 MHz CPU Camera interface Internal RC oscillators 32 kHz + 16 MHz Ethernet MAC 10/100 Floating Point Unit with IEEE 1588 3 PLLs (FPU) 2x CAN 2.0B Clock control **Nested Vector** Interrupt 1x USB 2.0 OTG FS/HS RTC/AWU Controller (NVIC) 1x SysTick timer 1x USB 2.0 OTG FS JTAG/SW debug 2x watchdogs 1x SDMMC **Embedded Trace** (independent and window) Macrocell (ETM) 4x USART + 4 UART 82/114/140/168 I/Os LIN, smartcard, IrDA. **Memory Protection Unit** modem control (MPU) Cyclic Redundancy Check (CRC) 1x SAI (Serial audio interface) 96-bit unique ID Mutli-AHB bus matrix Voltage scaling 16-channel DMA True random number generator (RNG) **Analog** Control Up to 2-Mbyte dual-bank Flash memory 2x 16-bit 2-channel motor-control 256-Kbyte SRAM 2x 12-bit DAC **PWM**

FMC/SRAM/NOR/NAND/

CF/SDRAM

80-byte + 4-Kbyte backup

SRAM

512 OTP bytes

3x 12-bit ADC/2.4 MSPS

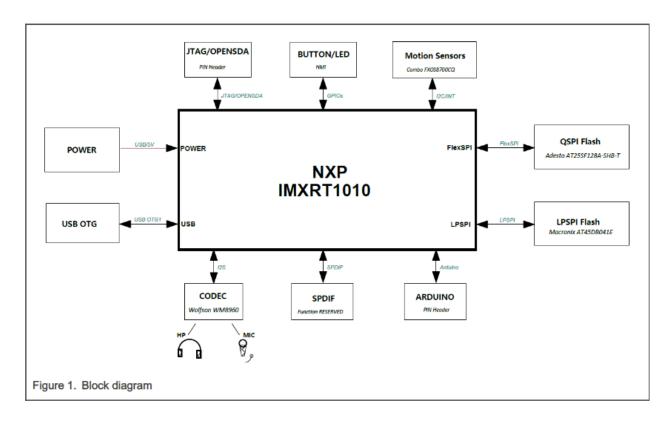
Up to 24 channels

/7.2 MSPS

Temperature sensor

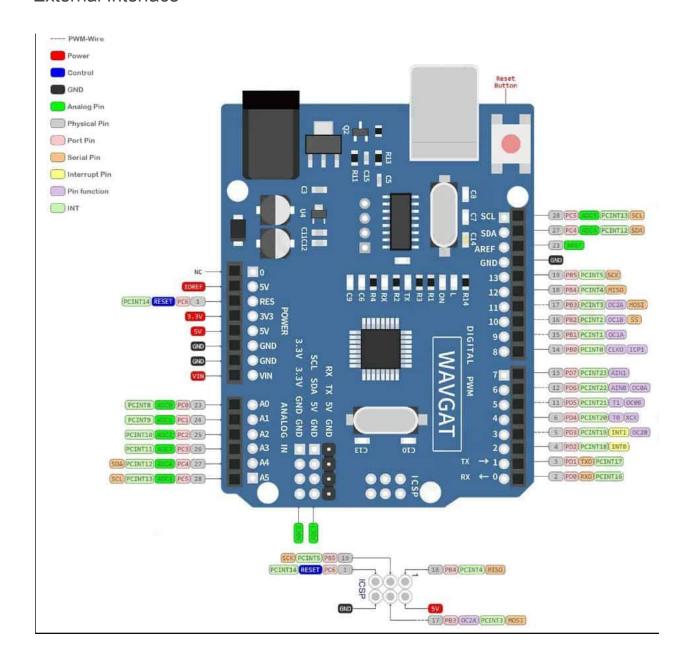
## MIMXRT1010-EVK

## **Board Block Diagram**



• Arduino Interface for expansion

### **External Interface**



## Processor Block Diagram

