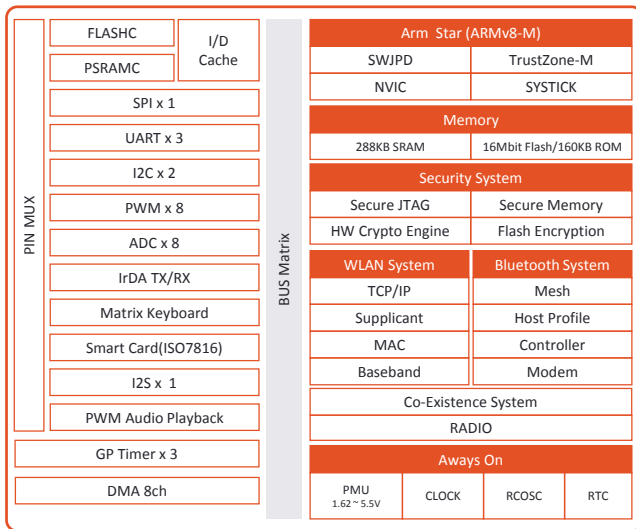




Wi-Fi + BLE 5.0 Combo MCU

for Internet of Things Applications

The XR806 is a highly integrated Wi-Fi and Bluetooth combo micro processor which features an ARMv8-M MCU, a 802.11b/g/n WLAN subsystem, a Bluetooth Low Energy (Version 5.0) subsystem and a Power Management Unit (PMU). It also integrates the highest level security system to provide comprehensive protection for software. It is designed for abundant smart devices in product categories such as Internet of Things (IoT), Machine-to-Machine (M2M), Smart Home, Cloud Connectivity applications.



Highlight

- Wi-Fi and Bluetooth combo technology makes network connection simple and high efficient.
- High level of integration effectively reduces rBOM cost and simplifies hardware design.
- Industry leading low power consumption and effective power management ensure excellent battery life.
- High level of security system provides comprehensive protection for applications.
- Various peripherals support allows customers to develop variety of different products.
- High performance and highly integrated MCU, which enables software to perform more complex tasks.

Features

Platform

- Arm-Star ARMv8-M MCU, up to 160MHz
- 288KB SRAM and 160KB Code ROM
- Supports SiP 16Mbit Flash and external Flash with QPI and XiP Mode
- 1024 bits eFuse

WLAN System

- Compatible with 802.11b/g/n standard
- Single-band 2.4G 1T1R WLAN
- WPA/WPA2.0 personal/WPA3.0 personal/ WPS2.0
- Integrated LNA PA and T/R switch
- STA, AP, STA/AP and Monitor mode
- Supports Wi-Fi and Bluetooth Co-existence

Bluetooth System

- Bluetooth specification v5.0, and compatible with v4.0/4.1/4.2 devices
- Bluetooth Low Energy 1Mbps, 2Mbps and long range
- -97dBm RX sensitivity in 1Mbps mode
- -103dBm RX sensitivity in 125kbps mode
- TX power: -20dBm ~ 20dBm

Security

- TEE: TrustZone-M
- Secure boot (ECC)
- Secure memory/eFuse
- JTAG/SWD protection
- Flash encryption/decryption
- HW crypto engine(AES/DES/3DES/MD5/SHA/SHA256/TRNG)

Power Management

- 1.62 ~ 5.5V single power supply integrated with DC-DC
- Shutdown: 0.5uA
- Hibernation: 5uA@RTC only
- Standby: 28uA@16KB SRAM retention
- WLAN DTIM interval with 32.768kHz XTAL:
580uA@DTIM1, 230uA@DTIM3, 90uA@DTIM10
- WLAN RX active: 20mA@11b 1M Beacon
- WLAN TX active: 180mA@16dBm, 85mA@10dBm

Package :

- QFN32 4mm x 4mm/QFN40 5mm x 5mm

Features	Description	XR806AF2L	XR806BM2I	
Package	Trays and tape-in-reel	4x4mm ²	5x5mm ²	
		QFN32	QFN40	
Supply voltage	Power supply from system	1.62 ~ 5.5V		
	5V IO	Yes	/	
PMU	Intergate DCDC	Yes		
	LDO for external device (EXT LDO)	Yes		
External Clock	Reference High frequency clock	24/26/32/40MHz		
MCU Core	Core Type	Arm-star(ARMv8-M)		
	Core clock maximum frequency	160MHz		
	TrustZone	TrustZone-M		
Memory	Internal ROM	160KB		
	Internal RAM	288KB	288KB	
	Internal Flash	16Mbit(105°C)	/	
	Internal PSRAM	/	16Mbit	
	External Flash with XIP	/	up to 128Mbit	
	Cache (can be config to system ram)	32KB	32KB	
Backup register	Backup register for power save	16B		
Security	Secure boot	Yes(ECC)		
	TRNG(Provide random number seed)	Yes		
	Flash Encryption/Decryption	Yes		
	AES/DES/3DES/SHA/MD5/CRC Crypto Engine	Yes		
	Secure Memory/eFuse	Yes		
	Secure JTAG	Yes		
Watchdog reset protection	Protect specified peripherals been reset by watchdog	Yes		
BOR	BOR Detection	Yes		
Wi-Fi	802.11 b/g/n	Yes		
Bluetooth	BLE5.0	Yes		
	SIG Mesh	Yes		
Peripherals	GPIO	General Purpose	18	26(4 Flash IO)
	Flash Controller	Quad XIP Flash Controller	1	1
	UART		3(3.3V/5V)	3(3.3V)
	SPI	Master and slave	1	1
	I2C	Max.400Kbps	1	2
	GPADC	VBAT	1	1
		Normal	3	7
	DMA	8Channel	1	1
	RTC		1	1
	Timer	Watchdog	1	1
		Normal	2	2
		Wakeup	1	1
	PWM	Output	8	8
		Input capture	8	8
	DAudio	I2S Master and Slave	1	1
		PWM DAC	1	1
	IrDA	Receiver	1	1
		Transmitter	1	1
	SIM Card	ISO7816	1	1
	KEYBOARD	Matrix Keyboard	-	8 x 16
	32K	Internal RCOSC	1	1
External XTAL		1	1	
WAKEUP IO	From RTC wakeup	8	14	