

# QB66xx SOC Series

## Product Brief



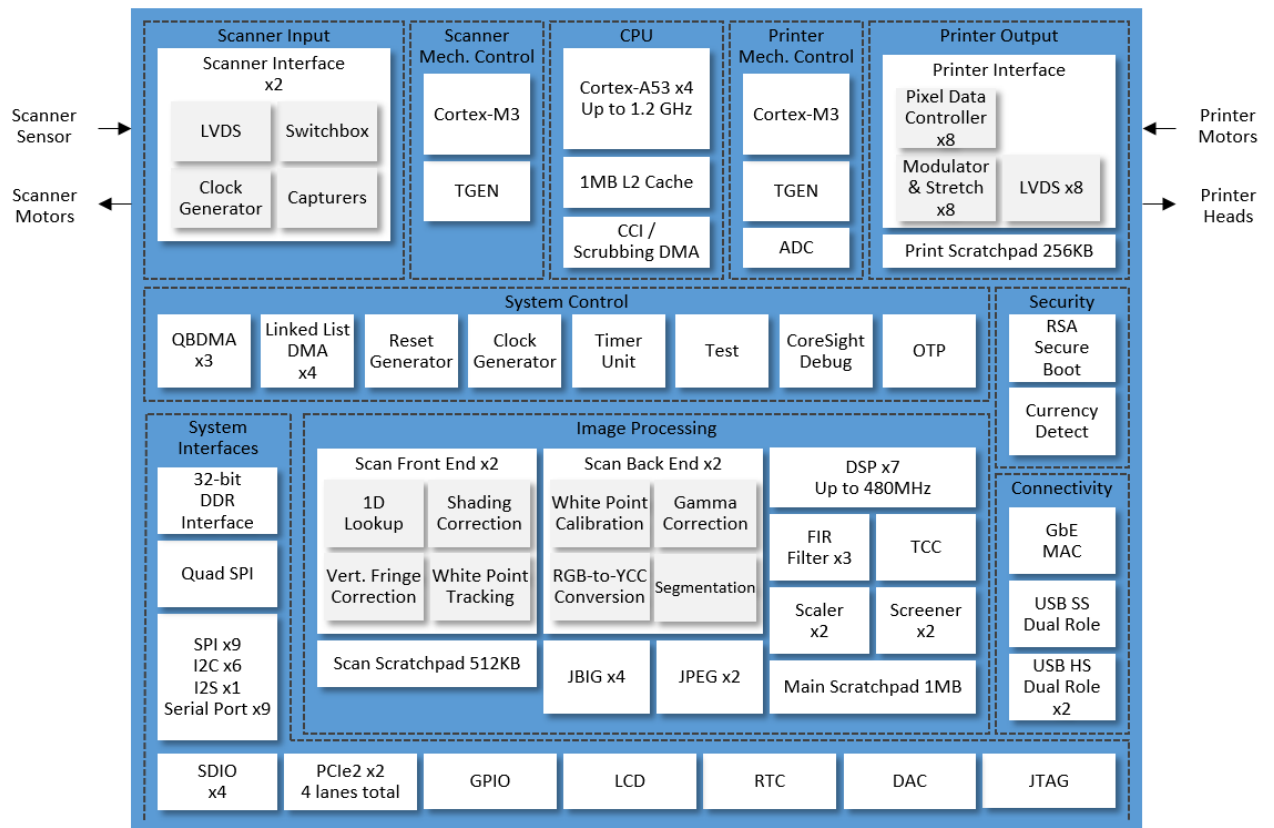
### Overview

QBit has expanded the QB6 family with its new QB66xx SOC series for multi-function printers. This new offering builds on the success of the QB63xx, providing a performance upgrade while maintaining power efficiency .

### Applications

Laser/LED single- and multi-function printers	Document scanners	3D printers
Robotic arm	Medical equipment	Check scanners
POS clients	Kiosk	Drones

### Block Diagram



### Key Features

- Same architecture and firmware code base as QB63xx
- 28nm silicon process for high performance and low power consumption
- Powerful CPU cores for running multiple applications concurrently
- Enhanced image processing hardware cores for outstanding image quality
- Same low-power standby operation as QB63xx to achieve remarkable power consumption
- Secure boot
- Rich interfaces including PCIe, USB, SDIO, SPI and I2C

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Category	Feature	Specification	Units
CPU	Processor	Cortex-A53 up to 1.2 GHz	4
	L1 I/D Caches	32KB/32KB	4
	L2 Cache	1MB	1
	Cache Coherency	CCI-400 Scrubbing DMA	1 1
	Floating Point	VFPv4	4
	SIMD Extensions	NEON	4
Image Processing	Scan Front End	Shading Correction / 1D Lookup Vertical Fringe Correction / White Point Tracking	2
	Scan Back End	White Point Calibration / Gamma Correction RGB-to-YCC Color Conversion / Segmentation	2
	Other Image Processing Units	FIR Filter Tetrahedral Color Converter Scaler Screener	3 1 1 2
	Currency Detector		1
	Imaging DSP	Up to 480 MHz	7
	JBIG		4
	JPEG		2
Memory	DDR	32-bit DDR3L-1600 1GBx4 or DDR4-1600 2GBx4	1
	On-Chip SRAM	1MB main scratchpad 512KB scan scratchpad 256KB print scratchpad	1 1 1
	Serial Flash (Boot Option)	1/2/4-bit SPI NOR/NAND	1
	eMMC Flash (Boot Option)	1/4-bit, up to HS200 200 MHz 1/4/8-bit, up to HS200 125 MHz 1/4-bit, up to HS200 125 MHz 1/4/8-bit, up to HS200 200 MHz (ports shared with SDIO)	1 1 1 1
Display	LCD Interface	18/24-bit LCD LVDS 3/4 ch, Vx1 1 ch, 8-bit SRGB	1
Printer Output & Control	Processor	Cortex-M3 up to 400 MHz	1
	Processor L1 I/D Caches	16KB/16KB caches with locking	1
	Output Channels	LVDS 1 ch, LVCMOS 1/2/4/8 pins (32 pins total)	8
	Subpixel PLL	Up to 2.56 GHz	1
	VSYNC Synchronization		1
	HSYNC Synchronization		8
	Laser Modulation	8 to 32 bits	8
	Laser Angle Compensation	0-7 stretch subpixels per pixel at 1200 dpi	8
	Laser Dot Counter		8
Scanner Input & Control	Processor	Cortex-M3 up to 400 MHz	1
	Processor L1 I/D Caches	16KB/16KB caches with locking	1
	External AFE Interface	LVDS 3/4/5 ch, LVCMOS 4/5/6/7/8/10 pins	2
	DataPort Interface	LVCMOS 4/5/6/7/8/10 pins	2
	Data Rearrangement	Multi-segment deinterleaving, up to 9 segments	2
Timing Generators	Signal Inputs & Generators	Multi-purpose TGEN units PWM outputs: timer, clock, PWM, modulated PWM I/Os with buffer: ring buffer, FIFO Event inputs: single input, dual input, speed monitor, phase comparator	96
USB	USB Dual Role	USB 3.2 Gen 1x1 SS (5 Gbps) Dual Role	1
	USB Host	USB 2.0 HS Dual Role	2
Ethernet	Ethernet MAC	10/100/1000	1
PCIe	PCIe	Gen 2, dual mode 4 lanes total that may be assigned as: Ctrl0 2 lanes, Ctrl1 2 lanes Ctrl0 2 lanes, Ctrl1 1 lane Ctrl0 4 lanes	2
Serial Interfaces	SPI		9
	Serial Port (UART)		9
	I2C		6
	I2S		1
ADC/DAC	SDIO/eMMC	SDSC/SDHC/SDXC, 1/4/8-bit, DS/HS/UHS-I	3
	ADC	15 ch, 12 bits, A0: 6.65 MSPS, B0: 13.3 MSPS, 3.6V	1
	DAC	4 ch, 8 bits, 0.5 MSPS, 3.3V	1
Real Time Clock	RTC	32.768 kHz, <=2uA standby current	1
GPIO	GPIO	Pins selectable as GPIO (including TGEN IO)	168
Boot	OTP	2 kbits	1
	Boot ROM	Secure boot: RSA, AES	1
Debug	Debug Trace	CoreSight with ETM	1
Power	Max Power	See QB66xx Power Modes Table document	
	Sleep Power	75 mW with Ethernet connection	
Package	Package Options	HSBGA 634 23x23 0.8	