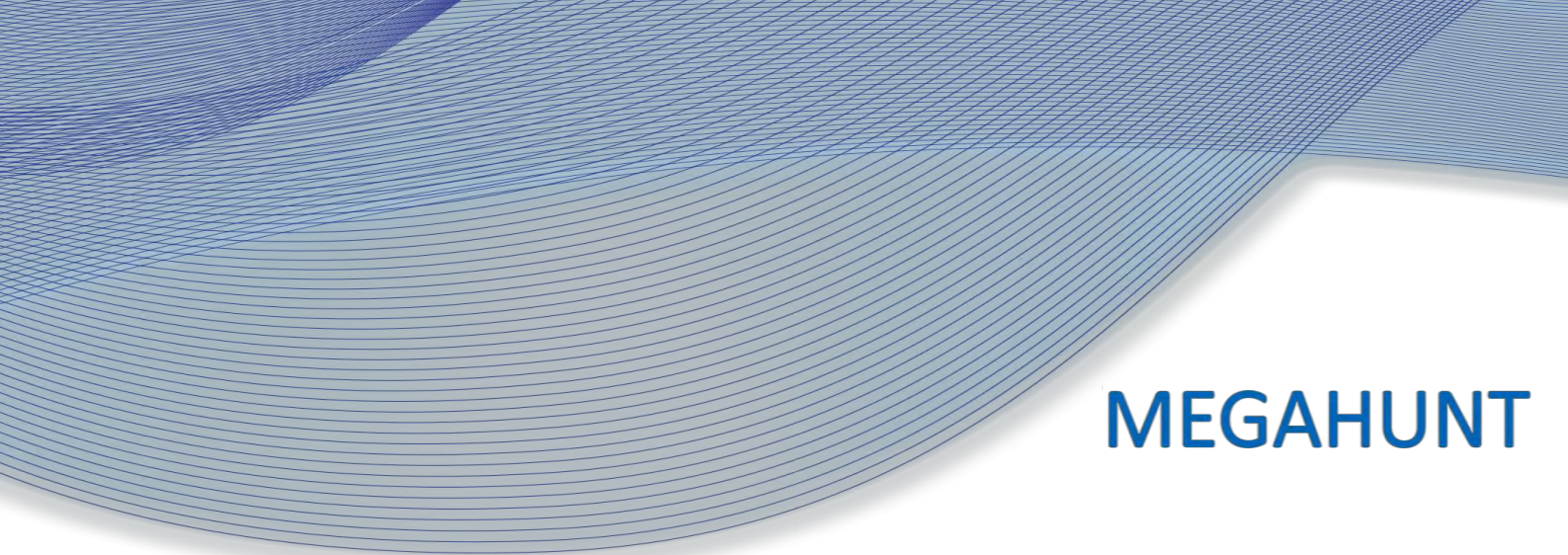




MEGAHUNT

MH1905 (Apollo) Brief Introduction

Highly Integrated Secure SOC

Version: 1.10

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Megahunt Tehnologies Inc.

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1 Introduction

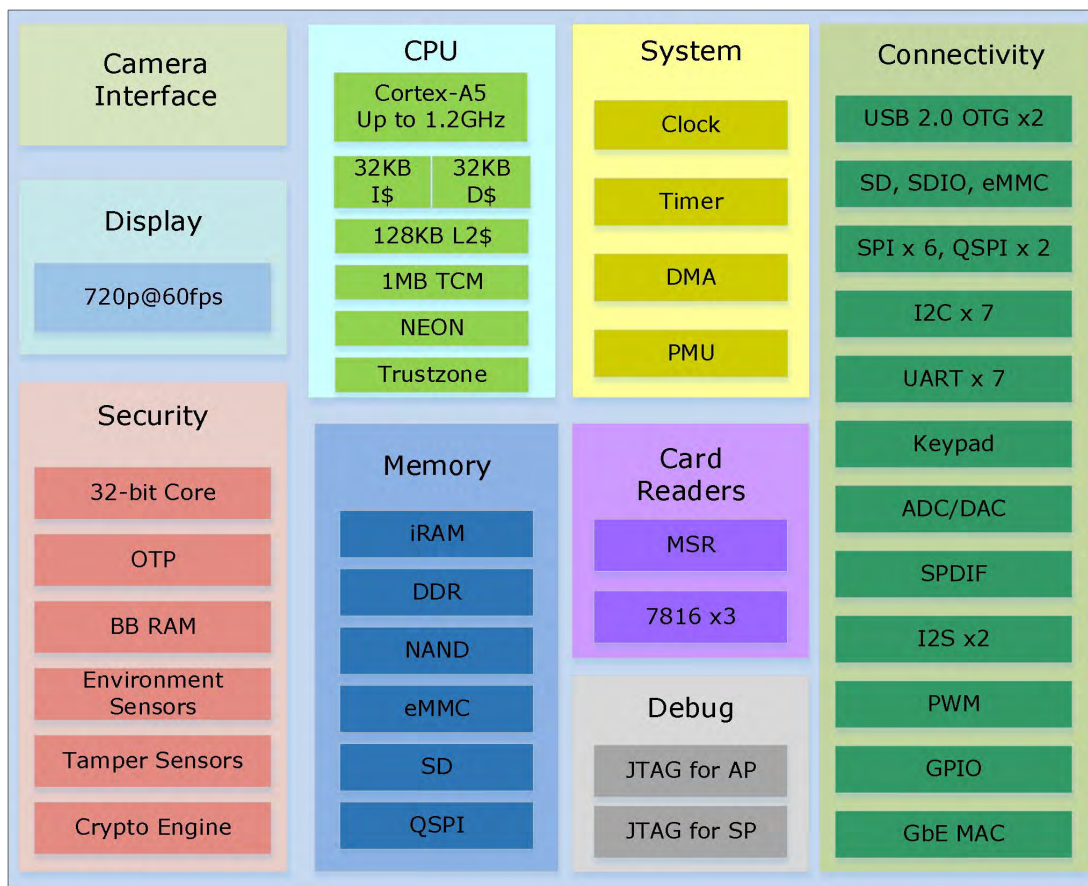
The MH1905 (Apollo) is an asymmetric multicore processor consisting of two processing subsystems: an application subsystem built around an ARM® Cortex®-A5 core with an ARM NEON™ SIMD engine and floating-point unit (FPU) and optimized for rich OS based applications; a real-time subsystem built around a 32-bit processor with enhanced security features and optimized for low power applications.

2 Features

Features	AP	SP
CPU core	Cortex-A5	32-bit Core
	VFPU/NEON	
Frequency	Up to 1.2GHz	Up to 200MHz
Cache	32KB L1 I-cache + 32KB L1 D-cache	32KB w/ on-the-fly AES128 CBC decryption for C-bus
	128KB L2 cache	
TCM	1MB	
SRAM	128KB	64KB
ROM	128KB	96KB
Memory	16-bit DDR3/DDR3L/LPDDR3 @533MHz	
Flash	Supports 2 x SD 3.0	N/A
	Support 1 x eMMC 5.0	
	Supports MLC/SLC NAND flash with 80-bit ECC/1KB	
	QSPI (XIP)	QSPI (XIP)
LCD	24bit RGB, 720p@60fps	N/A
	MIPI DSI 2-lane, 720p@60fps	N/A
	8080/High-speed SPI LCD interface, QVGA	N/A
Camera	1 x DVP (8-bit), up to 2M Pixel	N/A
	MIPI CSI 2-lane, up to 5M Pixel	
Keypad	N/A	Yes (4 x 5)

Features	AP	SP
Audio	2 x I2S interface	N/A
	1 x SPDIF	
Security	RestrictZone	PCI 6 Level Security
	scrambling for DDR	Decryption for C-bus and Encryption/Decryption for S-bus
Tamper Pin	N/A	10 (Dynamic & Static)
BBK Area	N/A	512B
Hardware Cryptography Acceleration	N/A	AES128/192/256 DES/TDES SHA160/224/256/384/512 RSA2048/4096 SM1/SM3/SM4/SM7 ECC/SM2
Timer	2 x 3 APB Timer 3 PMU Timer	6
Watchdog	1	1
RTC	1	1
DMA	32 channels	4 channels
AD	1 x 12-bit (6-channel)	N/A
DA	1 x DAC	N/A
USB	2 x USB 2.0 OTG with analog PHY	N/A
10/100/1000 MAC	1 x RGMII/RMII	N/A
GPIO	125 GPIOs + 6 SP_GPIOs + 2个GPIO (VBat domain)	
SPI	4 (3 master/slave, 1 high-speed SPI Master)	2
QSPI	1	1
UART	4 (up to 3.6Mbps)	3
I2C	5 (100K, 400K, 3.4M)	2
PWM	8	4
MSR	N/A	3 Groups
7816	N/A	3
Package	FCCSP	
	13 x 13mm, 361-ball, 0.65mm pitch	

3 Block Diagram



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