

# Product Overview 2020

## Embedded Modules



### armStone™

100x72mm, PicoITX SBC  
 Single Voltage 5V, 24V PSU optional  
 RGB, LVDS, DVI up to 4k  
 Feature Connector 2,54mm  
 Cortex A5/ Cortex A9/ CortexA53  
 WLAN/BT Module optional

### efus™

47x62mm  
 Single Voltage 5V  
 RGB, LVDS, DVI  
 MXM2 Goldfinger Connector  
 230 Pins, 0,5mm  
 Camera, PCIe, SATA, WLAN/BT



### SMARC

82x50mm  
 Single Voltage 5V  
 WLAN on Board  
 MXM2 Goldfinger Connector  
 314 Pins, 0,5mm  
 SMARC Standard

## Overview

Product	armStone™A9r2	armStone™MX8M	efus™A7UL	efus™A9	efus™A9X	efus™MX8X	efus™G1C	SMARC
State	Mass Production	Samples	Mass Production	Mass Production	Mass Production	Samples	Samples	2020
Processing Power	++++	+++++	+	+++	++	+++++	++	+++++
Windows	Compact 7/2013/10IoT Core		Compact 2013	Compact 7/2013/10IoT Core	Compact 7/2013			
Linux	Buildroot/ Yocto	Buildroot/ Yocto/ FreeRTOS	Buildroot/Yocto	Buildroot/ Yocto	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto/ FreeRTOS	Yocto	Buildroot/ Yocto
CPU	NXP i.MX 6 Solo/DualLite/Quad	NXP i.MX 8M Dual/Quad	NXP i.MX 6 UltraLite/ ULL	NXP i.MX 6 Solo/DualLite/ (Quad)	NXP i.MX 6SoloX	NXP i.MX 8 DualXPlus/QuadXPlus	Renesas RZ/G1C Dual	NXP i.MX 8M Dual/Quad
	Cortex-A9 – 1GHz	Cortex-A53 – 1,5GHz Cortex-M4	Cortex-A7 – 900MHz	Cortex-A9 – 1GHz	Cortex-A9 – 1GHz Cortex-M4 – 200MHz	Cortex-A35 – 1,2GHz Cortex-M4	Cortex-A7 – 1GHz	Cortex-A53 – 1,5GHz Cortex-M4
Special	2D, 3D, VPU	Vulkan	NEON	2D, 3D, VPU	2D, 3D	Integrated Security Engine (SEC)		Vulkan
Flash (up to)	512MB SLC NAND [32GB eMMC] [I2C EEPROM]	1GB SLC NAND [32GB eMMC] [I2C EEPROM]	512MB SLC NAND [32GB eMMC] [I2C EEPROM]	512MB SLC [32GB eMMC], [SPI NOR], [I2C EEPROM]	512MB SLC [32GB eMMC]	512MB SLC NAND [64GB eMMC] [I2C EEPROM]	1MB QSPI 4GB eMMC	512MB SLC NAND [32GB eMMC] [I2C EEPROM]
RAM (up to)	4GB DDR3L	8GB LPDDR4	1GB DDR3L	2GB DDR3L	2GB DDR3L	2GB LPDDR4	1GB	8GB LPDDR4
Ethernet	1 (1000Mbit)	1 (1000Mbit)	2	1 (1000Mbit)	2 (1000Mbit)	2 (1000Mbit)	1 (1000Mbit)	1 (1000Mbit)
WLAN/BT	[x/x]	[x/x]	[x/x]	[x/x]	[x/x]	[x/x]	[x/x]	[x/x]
RS232/ Serial	5	3	6	4	4	4	4	3
USB Host	4	4 (2.0/ 3.1)	1	1	1	1 (USB 3.0)	1	4 (2.0/ 3.1)
USB Device	1	1 (3.1)	1	1	1	1	1	1 (3.1)
SD-Card	1	1**	2*	2*	2*	1*	1*	1**
SATA/mPCIe	[1]/1	-/1		1/1	-/1			-/1
Audio	IN/ OUT/ MIC	IN/ OUT/ MIC	I2S	I2S	I2S	I2S	I2S	I2S
CAN	2	1	2	2	2	2	1	1
I <sup>2</sup> C	1	4**	4	2	2	4	2	4
SPI	2	2	4	2	2	2	2	1
Digital I/O	66**	32**	x	x	x	x	x	x
Analog In	4**	4**			x	4**		x*
Touch Panel	x*	x*	x*	x*	x*	x*	x*	2x 18/24bit
LVDS	2x 24bit	2x 24bit	[18bit]	2x 24bit	24bit	2x 24bit	24bit	
RGB			18bit [24bit]	18bit	18bit [24bit]			DVI UHD
CRT/DVI/HDMI	DVI 1080p	DVI UHD		DVI 1080p				
MIPI-DSI						2x		MIPI-CSI
Camera/Video-IN	MIPI-CSI	MIPI-CSI	Parallel 8bit	MIPI-CSI or Parallel 8bit	Parallel 8bit	MIPI-CSI	analog IN	

x available [ ] optional \* external \*\* with restrictions



# Product Overview 2020

## Embedded Modules



### PicoCOM

40x50mm  
Single Voltage 3,3V  
ARM9 to Cortex-A9  
Small, Compact  
Robust Connector  
80 Pins, 0,8 Pitch



### PicoCore™

35x40mm  
Single Voltage 3,8V – 5,5V  
2x 80/100 Pins Connector  
WLAN/ BT



### Qseven/QBliss

70x70mm  
Single Voltage 5V  
LVDS-TFT, DVI-D  
WLAN on Board  
MXM2 Goldfinger Connector  
230 Pins, 0,5mm  
Qseven Standard

## Overview

Product	PicoCOMA7	PicoCOMA9X	PicoCore™MX7ULP	PicoCore™MX6UL	PicoCore™MX6SX	PicoCore™MX8MM	PicoCore™MX8MN	QBlissA9r2
State	Mass Production	Mass Production	Mass Production	Mass Production	Mass Production	Mass Production	Samples	Mass Production
Processing Power	+	++	+	+	++	++++	++++	++++
Windows CE	Compact 7/ 2013	Compact 7/ 2013						Compact 7/2013
Linux	Buildroot/Yocto	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto/ FreeRTOS	Buildroot/Yocto
CPU	NXP i.MX6 ULL	NXP i.MX 6 SoloX	NXP i.MX 7ULP	NXP i.MX 6ULL	NXP i.MX 6 SoloX	NXP i.MX 8M Mini Solo/ Dual/ Quad	NXP i.MX 8M Nano Solo/ Dual/ Quad	NXP i.MX 6 Solo/DualLite/Quad
	Cortex-A7 – 900MHz	Cortex-A9 – 1GHz Cortex-M4 – 200MHz	Cortex-A7 – 720MHz Cortex-M4	Cortex-A7 – 900MHz	Cortex-A9 – 1GHz Cortex-M4 – 200MHz	Cortex-A53 – 1,8GHz Cortex-M4 – 400MHz	Cortex-A53 – 1,5GHz Cortex-M7 – 650MHz	Cortex-A9 – 1GHz
Special	NEON	2D, 3D	2D/3D	NEON	2D, 3D	2D, 3D, VPU	3D	2D, 3D, VPU
Flash (up to)	512MB SLC NAND	512MB SLC NAND [32GB eMMC], [SPI NOR]	64MB QSPI 32GB eMMC	512MB SLC NAND or 32GB eMMC [I2C EEPROM]	512MB SLC NAND or 32GB eMMC [I2C EEPROM]	512MB SLC NAND [32GB eMMC] [I2C EEPROM]	512MB SLC NAND [32GB eMMC] [I2C EEPROM]	512MB SLC NAND [32GB eMMC] [I2C EEPROM]
RAM (up to)	1GB DDR3L	512MB DDR3L	1GB LPDDR3	1GB DDR3L	1GB DDR3L	8GB DDR3L/ LPDDR4	8GB DDR3L	4GB DDR3L
Ethernet	1 [2]	1 [2] Gbit		1 [2]	2 (1000Mbit)	1-2 (1000Mbit)	1-2 (1000Mbit)	1 (1000Mbit)
WLAN/BT			[x/x]			[x/ x]		
RS232/Serial	3	3	5	6**	5**	4	4	1
USB Host	1	1		1	1	1		4
USB Device	1	1	1 OTG	1	1	1	1 OTG	1
SD-Card	1*	1*	[1**]	1*	1*	2*	2**	1+1*
SATA/mPCIe								1/1
Audio	IN/OUT	IN/OUT	IN/OUT/MIC/HP/I2S	IN/OUT/MIC/HP/I2S SPDIF** 3x SAI**	IN/OUT/MIC/HP/I2S SPDIF/SAI/ESAI/SSI**	IN/OUT/MIC/HP/I2S SPDIF/SAI/ESAI/SSI**	[IN/OUT/MIC/HP] I2S SPDIF/SAI/ESAI/SSI**	AC97/I2S
CAN	2**	2**		2x	2**	CAN-FD**	CAN-FD**	1
I <sup>2</sup> C	2**	2**	4	4**	3**	4	4	2
SPI	1	1	1	4**	2**	2	2 [3]	1
Digital I/O	x	x	33	x	x	x	x	x
Touch Panel	4 wire/I2C*	4 wire/I2C*	x*	x*	x*	I2C*	I2C*	
LVDS						[1-2x 24bit]	[1-2x 24bit]	x*
RGB	18bit	18bit	x*	24bit	24bit			2x 24bit
CRT/DVI/HDMI								DVI
MIPI-DSI			1x 2 lane			1x 4 lanes 1080p60	1x 4 lanes	
Camera/Video-IN						MIPI-CSI	MIPI-CSI	2x MIPI-CSI

x available [ ] optional \* external \*\* with restrictions

