

# LSI lineup for in-vehicle display systems

– support of integrated HMI solution –

## Advantage

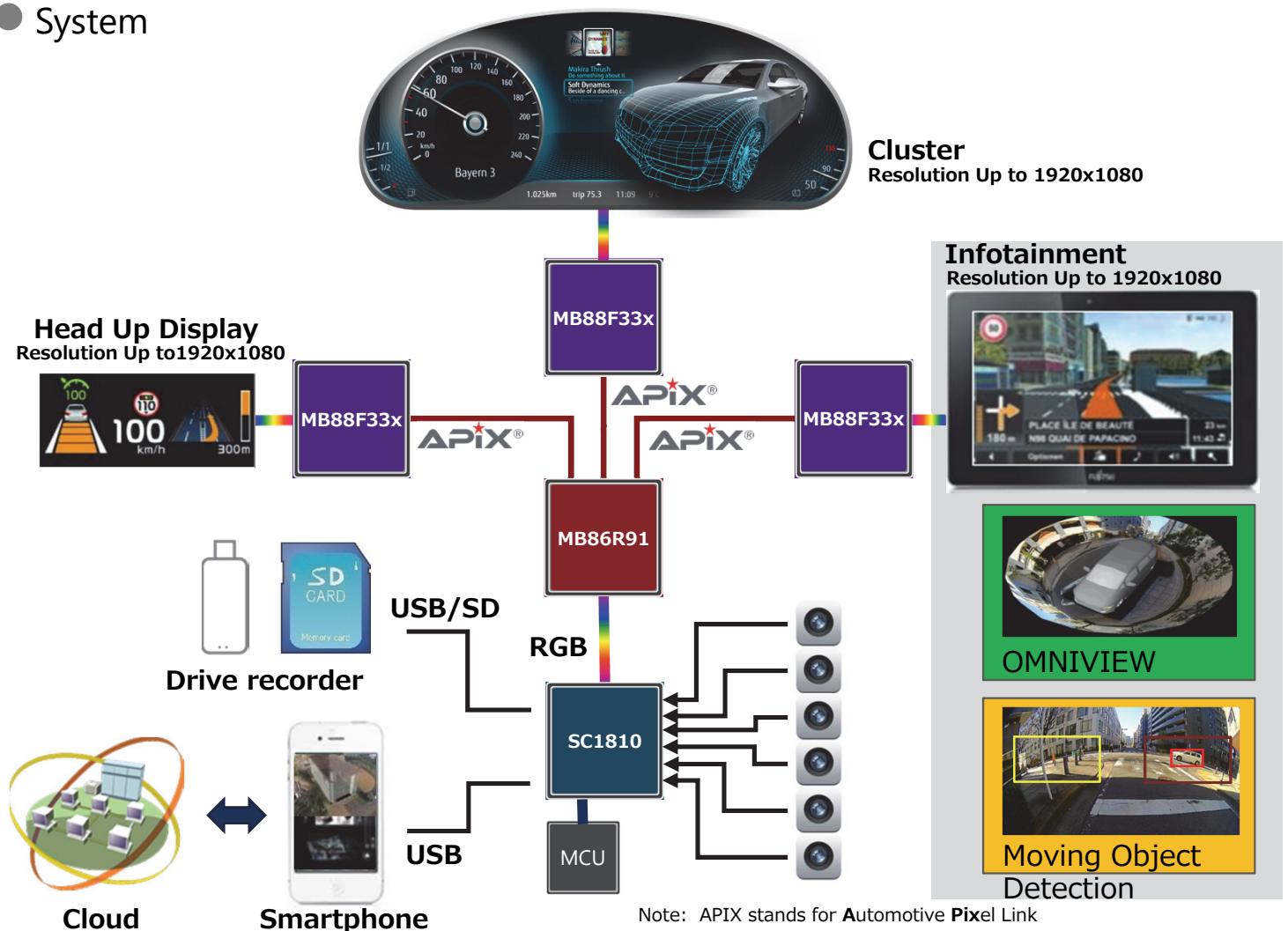
- Modularizing the display can reduce the BOM and enables a single SoC to control the content
- High-performance 2D, 3D engine creates a vivid and impressive display system
- Cooperation with the authoring tool enables cluster designs in reduced time

## Overview

Unlike traditional in-vehicle display systems, the Socionext solution does not use a controller for each display. Instead Socionext integrates its high-performance graphics SoCs and ancillary chipsets to create an integrated HMI solution that enables low-cost, simple configurations. The system frees the designer from previous development cycles, which make it difficult to apply increasingly complex content and image input / output. The designer can develop systems using a common process, irrespective of the target platform.

Newly, SC1810 were added to the lineup. SC1810 have the world's first built-in OpenVX compliant hardware accelerator. The leading edge recognition system is possible.

## System



Note: APIX stands for **Automotive Pixel Link**  
APIX is a Point-to-Point Video and Data Link optimized for Automotive environment provided by Inova Semiconductor, which is Headquartered in Munich, Germany.

# Lineup

## Graphic Display Controllers

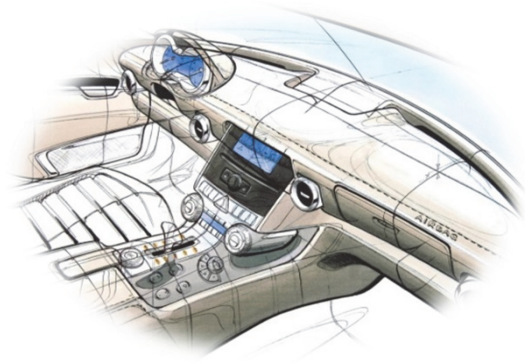
	MB88F332	MB88F333	MB88F334 MB88F336
<b>Package</b>	LQFP 208	LQFP 176	LQFP 208
<b>Processor</b>	-	-	-
<b>Display Controller</b>	1×up to 1280×480 RGB666/RSDS	1×up to 1280×480 RGB666/RSDS	1×up to 1920×768 RGB/RSDS/LVDS
<b>Graphics</b>	Socionext Sprite Engine	Socionext Sprite Engine	Socionext Pixel Engine
<b>Video</b>	-	-	-
<b>Memory</b>	External Serial Flash I/F Embedded 160KB NOR-Flash	- Embedded 160KB NOR-Flash	External Serial Flash I/F Embedded 32KB NOR-Flash
<b>Standard I/O</b>	I2C Sound I/F UART SPI SMC PWM ADC	I2C Sound I/F UART SPI SMC PWM ADC	I2C Sound I/F UART SPI SMC PWM ADC
<b>Network</b>	-	-	-
<b>APIX</b>	APIX® RX 1port	APIX® RX 1port	APIX2® RX 1port

## System On Chip

	MB86R12	MB86R24	SC1810 <span style="background-color: orange; border-radius: 50%; padding: 2px;">NEW!</span>
<b>Package</b>	TEBGA 544	FCBGA 672	FCBGA 1024
<b>Processor</b>	Single ARM® Cortex™-A9 1×533MHz (Automotive)	Dual ARM® Cortex™-A9 2×533MHz (Automotive)	Quad ARM® Cortex™-A9 4×1066MHz (Automotive)
<b>Display Controller</b>	3×up to 1600×600@60Hz RGB/RSDS	2×up to 1920×720p 1×up to 1920×1080p RGB/FPD	3×up to 1920×1080@60Hz RGB/FPD/YUV(30Hz)
<b>Graphics</b>	Socionext 2D/3D Engine	Socionext 2D Engine PowerVR™ SGX543-MP1 3D Engine	Socionext 2D Engine PowerVR™ Series 8XE 3D Engine
<b>Vision Processor</b>	-	-	OpenVX™ Socionext Vision Processor Engine
<b>Video</b>	1×up to 1920×1080 3×up to 1280×720 Socionext Image Processor	6×up to 1920×1080 Socionext Image Processor MIPI-CSI2	6×up to 1920×1080 Socionext Image Processor MIPI-CSI2 Ethernet-AVB
<b>Codec</b>	-	-	H.264 Codec Motion-JPEG Decoder
<b>Memory</b>	DDR2-800 DDR3-800/1066 ×16 ×32	DDR3/3L-1066 ×16 ×32 ×64	DDR3-1866/DDR3L-1600 ×16 ×32 ×64
<b>Standard I/O</b>	I2C, I2S, UART, SPI	I2C, I2S, UART, SPI	I2C, I2S, UART, SPI
<b>Network</b>	CAN, Ethernet	CAN, Ethernet	CAN, Ethernet
<b>APIX</b>	APIX2® Tx 3port APIX2® Rx 1port	-	-

## Companion Chip

	MB86R91
<b>Package</b>	FBGA 289
<b>Automotive Interconnect</b>	2× Automotive Interconnect (AIC) for connection to e.g. Socionext's MB9DF126 'Atlas' MCU
<b>Video</b>	1× LVDS video input, configurable as follows: <ul style="list-style-type: none"> <li>• 2× 4 lanes with up to 615 Mbps/lane (8 bit color)</li> <li>• 2× 3 lanes with up to 615 Mbps/lane (6 bit color)</li> <li>• 1× 8 lanes with up to 375 Mbps/lane (8 bit color)</li> <li>• 1× 6 lanes with up to 455 Mbps/lane (6 bit color)</li> </ul> 1× Digital RGB888 video input 1× MIPI CSI2 transmitter (D-PHY 1.0), configurable 2 or 4 lanes 1× Media Independent Interface (MII-M) 1× Media Independent Interface (MII-P)
<b>APIX</b>	APIX2® Tx 3port APIX2® Rx 1port



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