Main Product Specifications of the R-Car D3

Item	R-Car D3 Specifications
Product No	R-Car D3 (R8A77995)
Power supply voltage	3.3/1.8 V (IO), 2.5 V (Ether), 1.5 V (DDR3) /1.35 V (DDR3L), 1.03 V (core)
CPU core	Arm®Cortex®-A53
Cache memory	L1 Instruction cache：32 KB L1 Operand cache：32 KB L2 cache：12 8KB
External memory	DDR3/DDR3L-SDRAM ・Approved standards：DDR3-1866/DDR3L-1866 ・Data bus width：16 bit x 1 ch
Graphics	3D Graphics Processing Unit IMG PowerVR® Series 8XE GE8300
	2D Graphics Processing Unit
Video	Display Out x 2 ch (LVDS x 2 or LVDS + Digital RGB)
	Video Input x 1 ch (Digital RGB)
	Up and down scaling, color conversion, rotate, dithering, sharpness
	Distortion compensation module (IMR-LSX4)
Video output check	Display Output Compare Unit (DISCOM)
	Video-Output-Checker (VOC)
Audio	Sampling rate converter x 2 ch
	Serial sound interface x 2 ch
Storage interfaces	USB 2.0 host/function interface x 1 port (wPHY)
	Multimedia card interface x 1 ch
	Raw NAND Flash memory interface x 1 ch
In car network and automotive peripherals	Media local bus (MLB) Interface x 1ch (3-pin interface)
	Controller area network (CAN-FD support) Interface x 2 ch
	Ethernet AVB 1.0-compatible MAC built in Interface: RGMII Ethernet AVB (802.1 BA) ・ IEEE802.1BA ・ IEEE802.1AS ・ IEEE802.1Qav ・ IEEE1722
Security	Crypto engine (AES, DES, Hash, RSA)
	SystemRAM
Other peripherals	SYS-DMAC x 24 ch, Realtime-DMAC x 8ch Audio-DMAC x 16 ch, Audio (peripheral) -DMAC x 4ch
	32-bit timer x 26 ch

	PWM timer x 4 ch
	I2C bus interface x 4 ch
	Serial communication interface (SCIF) x 11 ch
	SPI Multi I/O Bus Controller (RPC) x 2ch (HyperFlash™ x 1 ch support)
	Clock-synchronized serial interface (MSIOF) x 4 ch（SPI/IIS）
Low power mode	Module standby mode
	DDR-SDRAM power supply backup mode
Package	401-pin FCBGA 0.8 mm pitch (19 mm x 19 mm)
Development environment	ICE for Arm CPU available from tool vendors
Evaluation board	A user system development reference platform with the following features is also available to enable the users to carry out efficient system development. (1) Incorporates car information system-oriented peripheral circuits, providing users with an actual device verification environment. (2) Can be used as a software development tool for application software, etc. (3) Allows easy implementation of custom user functions.
Software Platform	Support OS: Linux, QNX® Neutrino® RTOS, Integrity® etc.
Functional safety	Supports the ISO 26262 (ASIL-B) Provide a functional safety support program