

## Providing Mixed-Signal IC solutions that enable connectivity and networking in consumer electronics, automotive infotainment, PC and industrial applications

PRODUCTS	APPLICATIONS	USB	ETHERNET	MOST®	PC SYSTEM + I/O CONTROLLERS	THERMAL MANAGEMENT	CAPACITIVE TOUCH SENSORS	ARCNET/ CIRC LINK™
CONSUMER ELECTRONICS	Digital Cameras, HDTVs, Set-top Boxes, Digital Media Adapters, DVD & HDD Recorders, Cellular Mobile Handsets, PMPs, Portable GPS/PNDs	●	●	●	●	●	●	
AUTOMOTIVE	Multimedia, Connectivity and Infotainment Systems	●	●	●	●			● (ARCNET only)
HOME APPLIANCES	Cooking Equipment, Refrigerators, Washing Machines, Dryers	●	●			●	●	●
GAMING EQUIPMENT	Gaming Systems, Multi-Player Arcade Games, Game Consoles, Slot Machines	●	●		●	●	●	●
PERSONAL COMPUTERS & PC PERIPHERALS	Desktop, Notebook & Netbook PCs, Flash Media Drives, Rotating Media, Display Monitors, PDA Docking, Printers, Port Replicators, USB Hubs, Infrared Connectivity	●	●		●	●	●	
EMBEDDED PCs & SERVERS	Embedded Web Servers, Tower, Rack & Blade Servers, Single Board Computers, Industrial PCs, PC/104 Modules	●	●		●	●	●	
ENTERPRISE HARDWARE	ATMs, Printers, Copiers, Kiosks, POS Systems, Projectors, SANs, Tape Storage, Video Conferencing	●	●		●	●	●	●
INDUSTRIAL/ BUILDING AUTOMATION	HVAC Systems, Lighting Systems, Fire/Alarm Systems, Access Control Systems, Elevator Systems, Factory Control Systems, Food Processing Equipment	●	●			●	●	●
COMMUNICATIONS EQUIPMENT	Cellular Base Stations, Wireless Routers, Residential Gateways, IP Telephony	●	●			●	●	●
SECURITY	Security & Alarm Systems, Video Surveillance	●	●		●	●	●	●

### BENEFITS

USB	ETHERNET	MOST	MOBILE PC EMBEDDED CONTROLLERS	DESKTOP, SERVER & EMBEDDED I/O	THERMAL MANAGEMENT	RightTouch™ CAPACITIVE SENSORS
<ul style="list-style-type: none"> <li>• Robust Hi-Speed USB 2.0 and storage compatibility across a wide range of digital media applications</li> <li>• Flexible, application-oriented design support</li> <li>• Broad line of Hi-Speed USB 2.0 hub controllers for computing, consumer, automotive and industrial applications</li> <li>• Complete family of standalone Hi-Speed USB 2.0 transceivers</li> <li>• Performance-oriented, Hi-Speed USB 2.0 Flash media readers</li> </ul>	<ul style="list-style-type: none"> <li>• Diversified Ethernet solutions for a variety of embedded system architectures</li> <li>• Comprehensive software and hardware design support</li> <li>• High-performance and low CPU overhead features ideal for embedded systems</li> <li>• Small form factor package and less external components reduce BOM</li> </ul>	<ul style="list-style-type: none"> <li>• Leader in high-bandwidth automotive infotainment systems</li> <li>• Technology also designed for application in consumer infotainment markets</li> <li>• Broad standardization from the physical layer to application level</li> <li>• Various speed-grades and physical layers</li> <li>• A/V streaming, packet, isochronous and control data transport</li> <li>• High flexibility and scalability</li> <li>• Approved to carry DVD content using Digital Transmission Content Protection (DTCP)</li> </ul>	<ul style="list-style-type: none"> <li>• Full line of mobile PC solutions, including Embedded Controllers, Keyboard Controllers (KBC), Mobile I/O Controllers and docking products</li> <li>• Highly integrated solutions</li> <li>• Low-power, small-footprint products</li> <li>• Solutions for x86 and non-x86 netbook and smartbook architectures</li> </ul>	<ul style="list-style-type: none"> <li>• Leader in platform thermal management</li> <li>• Provides value through integration of I/O, hardware monitoring, fan control and discrete logic</li> <li>• Desktop PC, server and single board computer, industrial computer, POS, ATM, set-top box and other embedded applications</li> </ul>	<ul style="list-style-type: none"> <li>• State-of-the-art thermal management for PC, server and embedded systems applications</li> <li>• Advanced features to speed design-in, minimizing or eliminating the need for CPU calibration or board-level measurements</li> <li>• Broad portfolio of solutions including highly accurate temperature sensors, closed-loop fan controllers, fan, voltage and power management technologies</li> <li>• Compatibility with all processors including Intel® 45nm processors</li> </ul>	<ul style="list-style-type: none"> <li>• Hardware solution enabling simpler development than microcontroller solutions</li> <li>• Integrated analog filtering to minimize noise from DC-DC, backlight inverters and cellular or Wi-Fi® frequencies</li> <li>• Recalibration routines that protect against foreign substances (dust and natural oils) that deposit on the touch surface over time</li> <li>• 8kV contact ESD rating vs. the industry average of only 2-3kV</li> </ul>

## USB

### Hi-Speed USB to Ethernet Controllers

#### USB 2.0 to 10/100 or 10/100/1000 Ethernet Controllers with Superior ESD Protection

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
LAN9500A	NetDetach™ technology, EEPROM-less operation, UniClock™ technology	LAN9500Ai	56	QFN
LAN9500	±8kV/±15kV ESD protection, UniClock technology	LAN9500i	56	QFN
LAN7500	10/100/1000 Gigabit controller with integrated USB and Ethernet PHYs, single-chip, high-performance, cost-effective, ±8kV HBM and ±15kV air discharge ESD protection, EEPROM-less operation, UniClock technology	LAN7500i	56	QFN

### Hi-Speed USB and Ethernet Controllers

#### USB 2.0 Hub and 10/100 Ethernet Controllers with Superior ESD Protection

PART	FEATURES	DOWNSTREAM USB PORTS	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
LAN9512	Industry's first fully-integrated, single-chip device, ±8kV/±15kV ESD protection, UniClock technology, EEPROM-less design option using SMSC defaults	2	LAN9512i	64	QFN
LAN9513		3	LAN9513i	64	QFN
LAN9514		4	LAN9514i	64	QFN

### Hi-Speed USB Hubs

#### USB 2.0 Hubs

PART	FEATURES	DOWNSTREAM USB PORTS	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
USB2512B	Low-power, extended commercial temp range, USB battery charging 1.1	2	USB2512Bi	36	QFN
USB2513B	Low-power, MultiTRAK™ technology, extended commercial temperature range, USB battery charging 1.1	3	USB2513Bi	36	QFN
USB2514B		4	USB2514Bi	36	QFN
USB2512	Small-footprint, SMSC's proprietary, PortMap, PortSwap, TrueSpeed, PHYBoost and MultiTRAK technologies	2	USB2512i	36	QFN
USB2513		3	USB2513i	36/48	QFN
USB2514		4	USB2514i	36/48	QFN
USB2517		7	USB2517i	64	QFN
USB2524	MultiSwitch™ technology combining Hi-Speed USB hub and switching functionality in a single-chip, cost-effective solution	2 upstream/ 4 downstream	N/A	56	QFN

See below for hub and Flash media controller combination devices.

### Hi-Speed USB Flash Media Controllers

#### Standalone USB 2.0, Multi-Format Flash Media Controllers

PART	FEATURES	SOCKET TYPE	SUPPORTS	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
USB2240	Ultra Hi-Speed, cost-effective, external or internal ROM option, secure memory format options	Single	SD/MMC/SM/xD/MS*	USB2240i	36	QFN
USB2241		Single	SD/MMC/SM/MS*	USB2241i	36	QFN
USB2242		Single	MS*	USB2242i	36	QFN
USB2244		Single	SD/MMC*	USB2244i	36	QFN
USB2250		Multi	SD/MMC/SM/XD/MS/CF* and external memory	USB2250i	128	VTQFP
USB2251		Multi	SD/MMC/SM/MS/CF* and external memory	USB2251i	128	VTQFP

See below for hub and Flash media controller combination devices.

### Hi-Speed USB Hub and Flash Media Controllers

#### Hi-Speed USB 2.0 Hub and Multi-Format Flash Media Reader Combos

PART	FEATURES	SOCKET TYPE	SUPPORTS	DOWNSTREAM USB PORTS	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
USB2670	On-chip RAM option, enhanced power-down modes, SPI slave support	Dual	SD/MMC/xD/MS*	2	USB2670i	64	QFN
USB2660	Ultra Hi-Speed, cost-effective, low-power, small-footprint	Dual	SD/MMC/xD/MS*	2	USB2660i	64	QFN
USB2640		Single	SD/MMC/MS*	2	USB2640i	48	QFN
USB2641		Single	SD/MMC/xD/MS*	2	USB2641i	48	QFN
USB2601/2602	Integrated card power FETs and Hi-Speed USB 2.0 hub	Multi	SD/MMC/SM/MS/CF* and external memory	3	N/A	128	VTQFP
USB4640	Ultra-fast digital, Hi-Speed Interchip Interface (HSIC)	Single	SD/MMC/xD/MS*	2	USB4640i	48	QFN

See above for hub and Flash media controller standalone devices.

## USB (continued)

### USB Transceivers

#### Hi-Speed USB 2.0 Transceivers



PART	FEATURES	INTERFACE	REFERENCE CLOCK	PIN/BALL	PACKAGE
USB3310	Highly-integrated, small-footprint, internal ESD protection circuits, integrated 3.3V LDO regulator, integrated USB switch, external passive components minimized, flexPWR® technology	1.8V ULPI	Multi-frequency	24-pin	QFN
USB3311		1.8V ULPI	26MHz	24-pin/25-ball	QFN/VFBGA
USB3313		1.8V-3.3V ULPI	26MHz	25-ball	VFBGA
USB3315		1.8V-3.3V ULPI	24MHz	24-pin	QFN
USB3316		1.8V ULPI	19.2MHz	24-pin/25-ball	QFN/VFBGA/UFBGA
USB3317		1.8V-3.3V ULPI	26MHz	24-pin/25-ball	QFN/VFBGA
USB3318		1.8V-3.3V ULPI	13MHz	24-pin	QFN
USB3319		1.8V ULPI	13MHz	24-pin/25-ball	QFN/VFBGA
USB3320		Full-featured, USB OTG transceiver, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60MHz clock-in mode including crystal support, flexPWR technology	1.8V-3.3V ULPI	Multi-frequency	32-pin
USB3321	Smallest-footprint, integrated Vbus over-voltage protection, USB switch, ESD protection circuits and 3.3V LDO regulator, ULPI 60MHz clock-in mode, flexPWR technology	1.8V ULPI	26MHz	25-ball	WLCSP
USB3322		1.8V ULPI	12MHz	25-ball	WLCSP
USB3326		1.8V ULPI	19.2MHz	25-ball	WLCSP
USB3327		1.8V ULPI	27MHz	25-ball	WLCSP
USB3329		1.8V ULPI	13MHz	25-ball	WLCSP
USB3300	USB host, device or OTG transceiver, industry-standard UTMI, low-pin interface	3.3V ULPI	24MHz	32-pin	QFN
USB3280/3290	USB device transceiver	8-bit UTMI	24MHz	36-pin/40-ball	QFN/VFBGA
USB3250		16-bit UTMI	12MHz	56-pin	QFN
USB3450	USB host or device transceiver	8-bit UTMI+	24MHz	40-pin	QFN
USB3500	USB host, device or OTG transceiver	8-bit UTMI+	24MHz	56-pin	QFN

## ETHERNET

### Hi-Speed USB to Ethernet Controllers

#### USB 2.0 to 10/100 or 10/100/1000 Ethernet Controllers with Superior ESD Protection

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PIN	PACKAGE
LAN9500A	10/100, NetDetach technology, EEPROM-less operation, UniClock technology	LAN9500Ai	56	QFN
LAN9500	10/100, ±8kV/±15kV HBM ESD protection, UniClock technology	LAN9500i	56	QFN
LAN7500	10/100/1000 Gigabit controller integrated USB and Ethernet PHYs, single-chip, high-performance, cost-effective, ±8kV HBM and ±15kV air discharge ESD protection, EEPROM-less operation, UniClock technology	LAN7500i	56	QFN

### Hi-Speed USB and Ethernet Controllers

#### USB 2.0 Hub and 10/100 Ethernet Controllers with Superior ESD Protection

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	DOWNSTREAM USB PORTS	PIN	PACKAGE
LAN9512	Industry's first fully-integrated, single-chip device, ±8kV/±15kV ESD protection, UniClock technology, EEPROM-less design option using SMSC defaults	LAN9512i	2	64	QFN
LAN9513		LAN9513i	3	64	QFN
LAN9514		LAN9514i	4	64	QFN

### PCI Ethernet Controllers

#### High-Performance 10/100 Ethernet Controllers, Supporting HP Auto-MDIX\*\*

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	BUS INTERFACE (BITS)	PIN	PACKAGE
LAN9420	33MHz, PCI 3.0-compliant interface	LAN9420i	32	128	VTQFP
LAN9132	Network multimedia processing engine, AES encryption, supports multiple high definition streams	N/A	32	324	LFBGA

## ETHERNET (continued)

### Local Bus Ethernet Controllers

10/100 Ethernet Controllers, Supporting HP-Auto MDIX\*\*

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	BUS INTERFACE (BITS)	PIN	PACKAGE
LAN9221	Small-footprint, advanced performance options, supports a wide range of software drivers, supports local bus interface from 1.8V to 3.3V, integrated checksum offload engine	LAN9221i	16	56	QFN
LAN9220		N/A	16	56	QFN
LAN9218	High-throughput performance options	LAN9218i	32	100	TQFP
LAN9217	External MII, high-throughput performance options	N/A	16	100	TQFP
LAN9131	Network multimedia processing engine, AES encryption, supports multiple high definition streams	N/A	16/32 generic local bus	324	LFBGA

### Ethernet Switches

10/100 Ethernet Switches

PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	PORTS	HOST INTERFACE	PIN	PACKAGE
LAN9303	High-performance, small-footprint, full-featured	LAN9303i	3	Single MII/RMII	56	QFN
LAN9303M		LAN9303Mi	3	Dual MII/RMII	72	QFN
LAN9311	Local bus, IEEE 1588 support	LAN9311i	2	16 bit local bus	128	VTQFP/XVTQFP
LAN9312		N/A	2	32 bit local bus	128	VTQFP/XVTQFP
LAN9313	MII interface, IEEE 1588 support	LAN9313i	3 (1-Port MII)	Single MII	128	VTQFP/XVTQFP

### Ethernet Transceivers

Transceivers with Superior Performance



PART	FEATURES	INDUSTRIAL TEMPERATURE OPTION (-40° TO 85°C)	HOST INTERFACE	PIN	PACKAGE
LAN8720A	10/100, full-featured, small-footprint, variable I/O, low-power consumption	LAN8720iA	RMII	24	QFN
LAN8710A		LAN8710iA	MII/RMII	32	QFN
LAN8700	10/100, full-featured, variable I/O	LAN8700i	MII/RMII	36	QFN

### ARCNET Controllers

Well-suited for Industrial and Embedded Networking Environments

PART	FEATURES	SPEED	PIN	PACKAGE
COM20019	Controller	312.5Kbps	28/48	PLCC/TQFP
COM20020		5Mbps	28/48	PLCC/TQFP
COM20022		10Mbps	48	TQFP
TMC2005	5-port hub	156.25 Kbps-10 Mbps	64	TQFP
HYC9088A R	High-impedance transceiver	2.5Mbps	20	SIP
HYC9088A R-LF		2.5Mbps	20	SIP
HYC2000		156.25-625Kbps	8	SIP
HYC4000		2.5M-10Mbps	8	SIP
HYC5000		2.5M-10Mbps	8	SIPN

### CircLink Controllers

Optimized Derivative of ARCNET, Well-suited for Industrial and Commercial Machinery

PART	MODE	SPEED	PIN	PACKAGE
TMC2074	Peripheral and standalone	5Mbps	128	VTQFP
TMC2072	Peripheral	5Mbps	100	TQFP
TMC2084	Standalone	5Mbps	48	TQFP

## AUTOMOTIVE

### MOST (Media Oriented Systems Transport) Network Interface Controllers Intelligent Network Interface Controller (INIC) for MOST Networks

PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
OS81110 INIC	Fully-encapsulated, single-chip, embedded network management, supports Ethernet and isochronous channels (MOST150)	MOST150 FOT, I <sup>2</sup> C™, I <sup>2</sup> S/SPDIF, 2 x TSI, SPI, MediaLB® (SPDIF, LVDS)	-40° to 105°C	48	QFN
OS81082 INIC	Fully-encapsulated, single-chip, embedded network management (MOST50)	MOST50 electrical (UTP), I <sup>2</sup> C, I <sup>2</sup> S, MediaLB	-40° to 95°C	64	ETQFP
OS81092 INIC	ROM version of OS81082 INIC (MOST50)		-40° to 105°C (targeted)	48	QFN
OS81050 INIC	Fully-encapsulated, single-chip with embedded network management (MOST25)	MOST25 FOT, I <sup>2</sup> C, I <sup>2</sup> S, MediaLB	Standard range: -40° to 85°C Extended range: -40° to 105°C	44	QPP/ETQFP
OS81060 INIC	ROM version of OS81050 INIC (MOST25)		-40° to 105°C (targeted)	40	QFN

### MOST (Media Oriented Systems Transport) Network Interface Controllers Network Interface Controller (NIC) for MOST Networks

PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
OS8104A	First-generation MOST Network Interface Controller	MOST25 FOT, I <sup>2</sup> C/SPI, I <sup>2</sup> S/SPDIF, Parallel IF	Standard range: -40° to 85°C Extended range: -40° to 95°C	44	QPP/ETQFP

### Power Management Companion For Diagnostics, Status Monitoring and Power Supply



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
MPM85000	Power management companion for diagnostics, status monitoring and power supply, TrueAuto-grade	LIN 2.0, I <sup>2</sup> C	-40° to 105°C	24	QFN

### Multimedia I/O Companion Multimedia I/O Port Expander



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
OS85650	Low-cost multimedia I/O port expander, DTCP co-processor, TrueAuto-grade	MediaLB 3-pin and 6-pin, Host Bus Interface (HBI), 2 x multi-channel streaming ports, 2 x TSI, 2 x SPI, I <sup>2</sup> C	-40° to 105°C	128	ETQFP
OS85652	Low-cost multimedia I/O port expander, TrueAuto-grade		-40° to 105°C	128	ETQFP

### Ethernet Controller 10/100 Ethernet Controller with HP Auto-MDIX Support\*\*



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
LAN89218	High-performance, single-chip, TrueAuto-grade	MAC/PHY, 10BASE-T/100BASE-TX, 32- and 16-bit Host Bus Interface (HBI)	-40° to 85°C	100	TQFP

### Ethernet Switch 10/100 Managed Ethernet Switch with HP-Auto MDIX Support\*\*



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PORTS	PIN	PACKAGE
LAN89303	High-performance, small-footprint, full-featured, single MII/RMII/Turbo MII support, TrueAuto-grade	MII/RMII, 2 X 10/100 PHYs, 3 X 10/100 MACs	-40° to 85°C	3	56	QFN

### Ethernet Transceiver 10/100 Ethernet Transceiver with HP Auto-MDIX Support\*\*, Featuring flexPWR Technology



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PIN	PACKAGE
LAN88710	Small-footprint, low-power consumption, full-featured, TrueAuto-grade	10BASE-T/100BASE-TX, MII/RMII	LAN88710AM (-40° to 85°C) LAN88710BM (-40° to 105°C)	32	QFN

### Hi-Speed USB 2.0 Hub USB 2.0 Hub Featuring MultiTRAK Technology



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PORTS	PIN	PACKAGE
USB82514	Versatile, cost-effective, energy-efficient, PortMap, PortSwap, PHYBoost, TrueAuto-grade	SMBus/I <sup>2</sup> C	-40° to 85°C	4	36	QFN

## AUTOMOTIVE (continued)

### Hi-Speed USB 2.0 Hub and Flash Media Card Controllers USB 2.0 Hub and Card Controller Combos



PART	FEATURES	TEMPERATURE RANGE	SOCKET TYPE	SUPPORTS	USB PORTS	PIN	PACKAGE
USB82640	PortMap, PortSwap, PHYBoost, TrueAuto-grade	-40° to 85°C	Single	SD/SD High Capacity/MMC/MS/MS PRO, MS PRO-HG*	2	48	QFN
USB82660		-40° to 105°C	Dual		2	64	QFN

### Hi-Speed USB 2.0 Transceiver USB 2.0 Transceiver with 1.8V ULPI Interface



PART	FEATURES	INTERFACE	TEMPERATURE RANGE	PORTS	PIN	PACKAGE
USB83340	Multi-frequency reference clock, TrueAuto-grade	1.8V ULPI	-40° to 105°C	1	32	QFN

For more information on SMSC's Automotive and Consumer Infotainment solutions, please contact the following SMSC offices:

<b>North &amp; South America</b>	Austin, Texas 1-512-306-8450	<b>Europe &amp; Asia</b>	Karlsruhe, Germany 49-721-62537-0	<b>Japan</b>	Tokyo, Japan 81-3-5487-0481
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SMSC provides a complete workbench for MOST (development or implementation) including: training, workshops, tools, network management software and IP licensing.

## PC SYSTEM & I/O CONTROLLERS

### Notebook/Netbook Products

#### Embedded Controller and Super I/O Devices for Notebook and Netbook PC Platforms

PART	FEATURES	I/O PORTS	SYSTEM INTERFACE	PIN	PACKAGE
MEC1609	Mobile embedded controller with 192K bytes embedded flash, PECL support, ADC, SMSC BC-Link™ technology	4 PS/2, 3 SMBus, 8 PWMs, 4 tachs, 1 serial (2-pin), 16 channels ADC, 115 GPIOs	LPC/SMBus	144	LFBGA/TFBGA
MEC1308	Mobile embedded controller with 64K bytes SRAM, managed SPI BIOS support, ADC, Windows Vista® consumer IR, SMSC BC-Link technology	4 PS/2, 2 SMBus, 4 PWMs, 2 tachs, 1 serial (2-pin), 55 GPIOs, RC-6 CIR	LPC/SMBus	128/144	VTQFP/TFBGA
MEC5004L	Mobile embedded controller with 64K bytes embedded flash, SMSC BC-Link technology	4 PS/2, 2 SMBus, 4 PWMs, 3 tachs, 1 serial (2-pin), 70 GPIOs	LPC	128	VTQFP
SI01028	Super I/O controller, small form factor package	3 serial, 24 GPIOs	LPC	64	QFN
LPC47N217	Super I/O controller for notebook and embedded PC applications	1 serial, 1 parallel, 14 GPIOs, IrDA, CIR	LPC	64	STQFP
LPC47N217N		1 serial, 1 parallel, 14 GPIOs	LPC	64/56	STQFP/QFN

### Desktop PC Products

#### Embedded Controller and Highly-Integrated Super I/O Devices for Desktop PC Platforms

PART	FEATURES	I/O PORTS	SYSTEM INTERFACE	PIN	PACKAGE
SCH5627	Desktop embedded controller, SMBus master for PCH temperature support, PECL 2.0 support, voltage monitoring	FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 4 PWMs, 4 tachs, 60 GPIOs	LPC	128	QFP
SCH5627P	Desktop embedded controller with "XLS5" power savings mode, SMBus Master for PCH temperature support, PECL 2.0 support and voltage monitoring	FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 4 PWMs, 4 tachs, 60 GPIOs	LPC	128	QFP
SCH5620	Legacy-light desktop embedded controller with SMBus Master for PCH temperature support, PECL 2.0 support and voltage monitoring	1 serial, 8042 KB controller, 2 SMBus, 3 PWMs, 4 tachs, 45 GPIOs	LPC	100	TQFP
SCH5617C	Desktop embedded controller, LPC hardware monitoring, PECL support	FDC; parallel, 2 serial, 8042 KB controller, 2 SMBus, 3 PWMs, 3 tachs, 46 GPIOs	LPC	128	QFP
SCH5147	Super I/O controller, LPC hardware monitoring, PECL support, voltage monitoring	FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 3 PWMs, 3 tachs, 29 GPIOs	LPC	128	QFP
SCH5027E	Super I/O controller, SMBus hardware monitoring, PECL support, voltage monitoring	FDC, parallel, 2 serial, 8042 KB controller, 2 SMBus, 5 PWMs, 6 tachs, 25 GPIOs	LPC	128	QFP

### Server/Workstation Products

#### Embedded Controller and Super I/O Devices for Server and Workstation PC Platforms

PART	FEATURES	I/O PORTS	SYSTEM INTERFACE	PIN	PACKAGE
SCH4304	Super I/O controller, X-Bus interface, RTC and auto fan control over SMSC SensorBus™ sensor interface	FDC, parallel, 2 serial, 8042 KB controller, SMBus, 3 PWMs, 8 tachs, 51 GPIOs	LPC	128	QFP
LPC47S457	Super I/O controller, SMBus, X-Bus interface, real time clock, GPIOs	FDC, parallel, 2 serial, 8042 KB controller, SMBus, X-Bus, 1 PWM, 1 tach, 55 GPIOs	LPC	128	QFP

## PC SYSTEM & I/O CONTROLLERS (continued)

### Embedded I/O Products

Highly-Integrated Super I/O Devices with Long Product Lifecycles for Embedded PC Platforms

PART	FEATURES	I/O PORTS	SYSTEM INTERFACE	PIN	PACKAGE
SCH3112	Super I/O controller with SMBus hardware and voltage monitoring	2 serial, parallel, FDC, 8042 KB controller, 40 GPIOs	LPC	128	VTQFP
SCH3114		4 serial, parallel, FDC, 8042 KB controller, 40 GPIOs	LPC	128	VTQFP
SCH3116		6 serial, parallel, FDC, 8042 KB controller, 40 GPIOs	LPC	128	VTQFP
LPC47M10x	Super I/O controller, full legacy I/O support	2 serial ports, parallel, 8042 KB controller, FDC, 37 GPIOs	LPC	100	QFP
SI010N268	Super I/O controller for ISA or LPC designs, X-Bus interface for I/O memory and FWH emulation	4 serial ports, parallel, FDC, WDT, 33 GPIOs	LPC/ISA	128	VTQFP
FDC37C669	Super I/O controller, 5V operation	2 serial ports, parallel, FDC, IDE interfaces, parallel IRQs	ISA	100	QFP/TQFP
FDC37B78x	Super I/O controller, real time clock, consumer IR, watchdog timer, 5V operation	2 serial ports, parallel, FDC, 8042 KB controller, parallel IRQs, serial IRQs, 20 GPIOs	ISA	128	QFP

## THERMAL MANAGEMENT

### Temperature Sensors

Highly-accurate Temperature Sensors Featuring Resistance Error Correction, Beta Compensation and Ideality Configuration

PART	FEATURES	ACCURACY	ZONES <sup>†</sup>	INTERRUPTS	PIN	PACKAGE
EMC1001	Ultra-small, ambient temperature sensor	1.5°C	1	2	6	SOT23
EMC1033	Resistance Error Correction, Anti-parallel Diodes	1°C	3	2	8	MSOP
EMC1043/1053/1063	Beta Compensation, default for embedded/Intel CPU/AMD CPU	1°C	3	N/A	8	MSOP
EMC1072/1073/1074	Selectable address	1°C	2/3/4	2	8/10	MSOP
EMC1412/1413/1414	Auto Beta Compensation, Resistance Error Correction, address select	1°C	2/3/4	2	8/10	MSOP/DFN/TDFN
EMC1422/1423/1424	Auto Beta Compensation, Resistance Error Correction, system shutdown	1°C	2/3/4	1	8/10	MSOP
EMC1046/1047	Auto Beta Compensation, Resistance Error Correction, Anti-parallel Diodes	1°C	6/7	N/A	10	MSOP
EMC1428	Auto Beta Compensation, Resistance Error Correction, Anti-parallel Diodes, system shutdown and alert	1°C	8	1	16	QFN
EMC1501	Temperature sensor + EEPROM-compliant with JEDEC TSE2002av for DDR3	1°C	1	1	8	TDFN

<sup>†</sup>All devices come with one ambient temperature sensor which is included in the zone count.

### Fan Controllers

Highly-reliable Fan Controllers Enabling Lower Acoustic Noise and Accurately Controlled Fan Speed with RPM Closed-loop Control and Temperature Sensing

PART	FEATURES	NUMBER OF FAN DRIVERS/TYPE	ACCURACY	TEMPERATURE MONITORS	PIN	PACKAGE
EMC2101	Single PWM/linear DAC fan driver with EEPROM load, 8-entry look-up table, interrupt	1 PWM/DAC	1°C	2 Zone	8	MSOP/SOIC
EMC2102	Closed-loop linear fan driver with integrated FET, hardware shutdown logic	1 Linear	1°C	4 Zone	28	QFN
EMC2103-1	Closed-loop PWM fan driver with hardware system shutdown	1 PWM	1°C	2 Zone	12	QFN
EMC2103-2		1 PWM	1°C	4 Zone	16	QFN
EMC2104	Closed-loop linear fan driver, hardware system shutdown	2 PWM	1°C	4 Zone	20	QFN
EMC2105	Closed-loop linear fan driver with integrated FET, interrupts, hardware shutdown logic	1 Linear	1°C	4 Zone	20	QFN
EMC2106	Closed-loop PWM/linear fan driver, dedicated interrupts, hardware system shutdown	1 PWM/ 1 Linear	1°C	4 Zone	28	QFN
EMC2300	High-frequency PWM support for 4 fans	3 PWM	3°C	3 Zone	16	SSOP
EMC2301	Single closed-loop fan speed controllers with alert and ramp rate control	1 PWM	N/A	N/A	8	MSOP
EMC2302	Dual closed-loop fan speed controllers with alert and ramp rate control	2 PWM	N/A	N/A	10	MSOP
EMC2303	Triple closed-loop fan speed controllers with alert and ramp rate control	3 PWM	N/A	N/A	12	QFN
EMC2305	Penta closed-loop fan speed controllers with alert and ramp rate control	5 PWM	N/A	N/A	16	QFN
EMC6D103S	High-frequency PWM support for 4 fans, voltage monitoring	3 PWM	3°C	2 Zone	24	SSOP

Linear fan driver indicates an integration of an FET and that the fan driver can be directly connected to the fan with no additional circuitry.

# CAPACITIVE TOUCH SENSORS

## Capacitive Touch Sensors

Featuring RightTouch Technology Which Simplifies Development and Provides Robust Protection from System Noise and ESD



PART	INPUT CHANNELS	LED DRIVERS	ADDITIONAL FEATURES	INTERFACE	PIN	PACKAGE
CAP1014	14	11	Slider, reset and alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/SMBus	32	QFN
CAP1088	8	8	Reset, wake and alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/SPI/BC-Link	24	QFN
CAP1028	8	2	Reset, wake and alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/SPI/BC-Link	20	QFN
CAP1066	6	6	Reset, wake and alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/SPI/BC-Link	20	QFN
CAP1026	6	2	Reset, wake and alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/SPI/BC-Link	16	QFN
CAP1006	6	0	Alert, automatic recalibration, base capacitance compensation	I <sup>2</sup> C/BC-Link	10	DFN
CAP1005	5	0	Automatic recalibration, base capacitance compensation	SPI	10	DFN

\* Secure Digital (SD™) / SD High Capacity™ / MultiMediaCard™ (MMC) / SmartMedia™ (SM) / xD-Picture Card™ (xD) / Memory Stick® (MS) / MS/ MS Pro™ / MS Pro-HG™ / CompactFlash® (CF) are registered trademarks or trademarks of their respective holders. xD licensing information is available on our website: [www.smisc.com/index.php?tid=142&pid=35&cid=&tab=3](http://www.smisc.com/index.php?tid=142&pid=35&cid=&tab=3)

\*\*HP Auto-MDIX eliminates the need for special "crossover" cables when connecting LAN devices together.

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SMSC 80 Arkay Drive, Hauppauge, NY 11788

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