

Development Tools for ARM-based microcontrollers - Select from the best in support

All of NXP's ARM microcontroller products are supported by a well established – and rapidly growing – network of third-party tool suppliers. Customers have direct access to a wide set of options, from evaluation boards and emulators to compilers, debuggers, RTOSs, software stacks, and more. This document provides an overview of the exceptional tool support offering that is available for our ARM-based microcontrollers. For further information about NXP microcontrollers and the surrounding ecosystem please visit www.nxp.com/microcontrollers.

Evaluation Boards, Starter Kits, and Single Board Computers (SBCs)

Evaluation boards and Starter Kits are an inexpensive way to experience the features of the NXP microcontroller devices and the software development tools and sample applications surrounding them. Some kits contain a JTAG unit for software debugging and device programming as well as free evaluation versions of integrated development environments IDEs, helping you to start developing your application quickly and easily. Single-Board Computers (SBCs), also called System-On-Modules (SOMs), allow you to reduce time-to-market and costs in all stages of embedded design from evaluation and prototyping to development and OEM deployment.

Supplier	Board	Supported Devices																				Populated Device	Comments														
		LPC111x	LPC1114x	LPC13xx	LPC175x	LPC176x	LPC210x	LPC211x	LPC212x	LPC219x	LPC213x	LPC214x	LPC215x	LPC221x	LPC222x	LPC229x	LPC236x	LPC237x	LPC238x	LPC242x	LPC245x			LPC246x	LPC247x	LPC288x	LPC291x	LPC292x	LPC293x	LH754xx	LH795xx	LH7A4xx	LPC313x	LPC314x	LPC315x	LPC318x	LPC32xx
ARM	mbed					•																														LPC1768	Rapid prototyping tool
Code Red	RDB1768				•	•																														LPC1768	LPC1700-based evaluation board
Embedded Artists	EA-QSB-xxx						•	•	•	•	•	•																							various	QuickStart Boards with headers	
	EA-EDU-xxx						•				•	•																							various	Education Boards with various add-on boards	
	EA-OEM-xxx																				•	•	•											•	various	SOM OEM boards with or w/o base boards	
	LPCXpresso	•		•		•																•	•	•											•	various	Plugs into LPCXpresso Baseboard
Embest	LPCEB2000-x													•		•																			various	3 CPU module boards + Expansion board	
	LPCEB2300																•																			LPC2368	Evaluation board for LPC236x series
	EM-LPC2478																																			LPC2478	Evaluation board for LPC247x series
	EM-LPC175X					•																														LPC175x	Evaluation board for LPC175x series
	EM-LPC176X						•																													LPC176x	Evaluation board for LPC176x series
	EM-LPC1300				•																															LPC1300	Evaluation board for LPC1300 series
	Blue Sprite (LPC1100)		•																																	LPC1100	Evaluation board for LPC1100 series
	MINI 3250																																		•	LPC3250	Evaluation board for LPC3250 series

Continued next page



Software Development Tool Chains (including associated JTAG debuggers / emulators)

Selecting the right software development tool chain is equally important to selecting the right microcontroller. NXP's microcontrollers are supported by a large number of software development tools. Integrated Development Environments (IDEs) provide you with a graphical project management interface for all steps of your application development, including editing, compiling, and debugging your application code. Many IDEs work with a variety of JTAG debuggers, emulators, and compilers for additional flexibility.

Supplier	Software Package	Integrated Development Environment (IDE)	Associated / Supported C/C++ Compiler(s)	Associated Debugger Software	Supported In-Circuit debuggers, emulators
Altium / TASKING	VX-toolset for ARM	TASKING EDE (Embedded Development Environment)	TASKING compiler	TASKING CrossView Pro	e.g. Hitex Tantino / Tanto, SEGGER J-Link
Amontec	Software Development Kit for ARM (sdk4arm)	Eclipse platform / Embedded Zylind plug-ins	GNU ARM GCC	GNU ARM GDB (+ Insight)	Amontec JTAGkey
ARM	RealView Development Suite (RVDS)	ARM Workbench IDE	ARM RealView compiler	ARM RealView Debugger	RealView ICE, RealView Trace, RealView Trace 2
Ashling	AsIDE for ARM	AsIDE (Ashling IDE)	GNU; also GHS, Keil/ARM, IAR and others	Ashling PathFinder Source Debugger	Ashling Opella, Vitra
Code Red	Red Suite 2	Red Suite 2 IDE (Eclipse-based)	GNU w/ Code Red libraries	Red Suite Debugger including Red Trace functionality	Red Probe
CodeSourcery	Sourcery G++	Sourcery G++ IDE (Eclipse-based)	GNU ARM GCC	Sourcery G++ Debugger	many popular JTAG, BDM and USB debuggers as well as GDB Server
Computex	CSIDE	CSIDE IDE	various	CSIDE Debugger	Computex PALMiCE debuggers and emulators
CooCox	CooCox	CoIDE	GNU ARM GCC	CoDebugger	Colink, CoLinkEx
Embest	Embest IDE for ARM	Embest IDE	GNU; also ARM	Embest Debugger	Embest PowerICE / UNetICE
Express Logic	BenchX	BenchX IDE (Eclipse-based)	GNU	BenchX Debugger (GDB debugger engine)	BenchX Debug Probe
Green Hills Software	Green Hills Development Tools for ARM	MULTI	Green Hills optimizing compilers	Green Hills Debugger / TimeMachine	Green Hills Probe / SuperTrace Probe
Hitex Development Tools	HiTOP IDE/Debugger	HiTOP	GNU; also TASKING, Keil/ARM, IAR	Hitex HiTOP	Hitex Cortino for Cortex / Tantino / Tanto for ARM
IAR	Embedded Workbench for ARM (EWARM)	EWARM	IAR compiler	IAR C-SPY	IAR J-Link / J-Trace; other RDI-based JTAG debuggers
Ice Technology (Nohau brand)	Nohau EMUL-ARM	Nohau Seehau User Interface	GNU; supports various 3rd party compilers	Nohau Seehau debugger	Nohau EMUL-ARM PC
ImageCraft	ICCV7	ImageCraft IDE	ICCV7	NoICE-ARM	Nohau, SEGGER, Lauterbach, Ashling, CrossWorks, etc.
iSYSTEM	winIDEA	winIDEA	supports all major ARM compilers	iSYSTEM winIDEA	iONE, iC3000, iC5000
I2ST	MicroEJ	Eclipse Plugin	Gcc, Greenhills, IAR / Java: any compiler	GDB, Java: JDWP	Zylin
Keil / ARM	Microcontroller Development Kit (MDK-ARM)	µVision4 IDE	ARM RealView; also GNU	Keil µVision Debugger	Keil ULINK2;ULINKpro, also Signum, Hitex, iSYSTEM, etc.
Lauterbach	TRACE32	TRACE32 PowerView IDE	supports all major ARM compilers	TRACE32 PowerView debugger, TRACE32-MON	TRACE-32 ICD, TRACE-32 PowerTrace, TRACE-32 ETB
Mentor Graphics	EDGE	EDGE IDE (Eclipse-based)	EDGE compiler	EDGE Debugger (Eclipse-based)	MAJIC JTAG Probe
National Instruments	LabVIEW for ARM	LabVIEW Graphical Programming solution	ARM RealView (via Keil uVision)	Keil µVision Debugger	Keil ULINK2; also Signum, Hitex, iSYSTEM, etc.
NXP	LPCXpresso	LPCXpresso	GNU	LPCXpresso	LPCLink, Redprobe
Oasis Technologies	Triton IDE	Triton IDE	GNU	Triton debugger	Odyssey Ethernet JTAG Debugger
Phyton	CodeMaster-ARM	CodeMaster-ARM IDE	Phyton CMC; also GNU	CodeMaster-ARM + OCD driver	JEM-ARM JTAG debugger
pls Development Tools	Universal Debug Engine (UDE)	Universal Debug Engine (UDE) IDE	supports all available ARM compilers	Universal Debug Engine (UDE)	pls Universal Access Devices (UAD2compact, UAD2, UAD2+, UAD3)
Raisonance	RIDE	RIDE (Raisonance IDE)	GNU	RIDE debugger	Raisonance RLink (Std / Pro)
Rowley Associates	CrossWorks for ARM	CrossStudio	GNU w/ Rowley libraries	CrossStudio debugger	Rowley CrossConnect for ARM; Segger wJ-Link; etc.
Signum Systems	Chameleon	Chameleon IDE	supports all major ARM compilers including GNU	Signum Chameleon debugger	Signum JTAGjet, JTAGjet-Trace
SPJ Technologies	SCARM	SCARM IDE	SCARM C compiler; also GNU	SDB Debugger	SPJ Systems' JTAGs (SJT-S and SJT-U)
ZLG	TKStudio	TKStudio IDE	GNU, ADS, IAR, and RealView MDK	TK Studio Debugger	TKScope(K8/K9/DK9), AK100 etc

JTAG Debuggers and Trace Emulators (most can also be used for on-chip Flash programming)

In-circuit emulators and JTAG debuggers are extremely valuable tools when it comes to software debugging and on-chip Flash programming. In addition, the vast majority of NXP's microcontrollers allow instruction and/or data trace capabilities via the Single Wire Viewer (SWV, in the LPC1700 devices), the Embedded Trace Macrocell (ETM; in most LPC2000 devices), or the Embedded Trace Buffer (ETB; in the LPC3000 family).

Supplier	JTAG debuggers / Trace Emulators	Supported Devices														Comments		
		LPC1102	LPC111x	LPC111x	LPC13xx	LPC17xx	LPC21xx	LPC22xx	LPC23xx	LPC24xx	LPC28xx	LPC29xx	LH754xx	LH795xx	LH7A4xx		LPC3xxx	
Abatron	BDIx000						•	•	•	•	•	•	•	•	•	•	•	BDI1000, BDI2000, BDI3000
Amontec	JTAGkey					•	•	•	•	•	•	•	•	•	•	•	•	Generic USB JTAG cable interface
Arium	HS-1000S				•	•	•	•	•	•	•	•	•	•	•	•	•	Run control with trace
	LX-1000				•	•	•	•	•	•	•	•	•	•	•	•	•	Run control with up to 8 GBytes of trace
ARM	LC-500				•	•	•	•	•	•	•	•	•	•	•	•	•	Run control
	RealView ICE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
	RealView Trace 2				•	•	•	•	•	•	•	•	•	•	•	•	•	
Ashling	Opella	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	High speed Run Time control JTAG probe
	Vitra	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Run time control with Trace
Brendes	BICEPS						•	•	•	•	•	•	•	•	•	•	•	Real-Time-Trace or JTAG Emulator
Code Red	Red Probe	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Computex	PALMICE3,2H				•	•	•	•	•	•	•	•	•	•	•	•	•	SWD/SWV,ETM Trace or JTAG Emulator
CooCox	Colink				•	•												JTAG debug interface for Cortex™-M3
	CoLinkEx		•		•	•												SWD
Embest	Embest PowerICE					•	•	•	•	•	•	•	•	•	•	•	•	parallel-JTAG Emulator for ARM
	UNetICE					•	•	•	•	•	•	•	•	•	•	•	•	high-speed JTAG emulator (via USB)
Green Hills	Probe				•	•	•	•	•	•	•	•	•	•	•	•	•	
	SuperTrace Probe				•	•	•	•	•	•	•	•	•	•	•	•	•	
Hitex	Cortino	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	JTAG debug interface for Cortex™-M
	Tantino	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	JTAG debug interface for Cortex™-M & ARM
	Tanto				•	•	•	•	•	•	•	•	•	•	•	•	•	ARM7 and ARM9
IAR	IAR J-Link	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	USB-JTAG/SWD debug probe for ARM
	IAR J-Trace						•	•	•	•	•	•	•	•	•	•	•	IAR J-Trace for ARMhardware trace probe
Ice Tech	Nohau EMUL-ARM PC					•	•	•	•	•	•	•	•	•	•	•	•	Trace Module available
iSYSTEM	iC3000	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Debugger
	iC3000 + iTRACE	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Debugger with ETM Trace
Keil / ARM	ULINK2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Trace via serial wire viewer for M3
	ULINK-ME	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Trace via serial wire viewer for M3
	ULINKpro	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Supports SWV and 4 -bit ETM trace
Lauterbach	TRACE32-ICD	•	•	•	•													JTAG debugger
	TRACE32-PowerTrace						•	•	•	•	•							JTAG w/Trace
	TRACE32-ETB															•		JTAG w/ETB Trace
NXP	LPCLINK	•	•	•	•	•	•	•				•					JTAG Debugger	
Oasis	Odyssey					•	•	•	•	•	•	•	•	•	•	•	•	Ethernet JTAG Debugger
Olimex	ARM-***	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	ARM-USB-OCD/TINY/TINY-H, ARM-JTAG/EW
Phyton	JEM-ARM						•	•	•	•	•							
pls	UAD2compact	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	JTAG debugger
	UAD2, UAD2+	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	JTAG-Debug, SWD/SWV-Debug/Trace
	UAD3+	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	JTAG,SWD/SWV,ETM/ETB Trace
	UDE ETM/ETB Trace						•	•	•	•	•							ETM / ETB Trace debugger
Raisonance	RLink-Std	•	•	•	•	•	•	•										Debug up to 32 KB in RAM or Flash
	RLink-Pro	•	•	•	•	•	•	•										Unlimited debugging, programming
Rowley	CrossConnect for ARM	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
SEGGER	J-Link	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	unlimited Flash Breakpoints, native support by IAR, KEIL, Rowley, add-on-support for RDI and GDB
	J-Link Pro	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	unlimited Flash Breakpoints, native support by IAR, KEIL, Rowley, add-on-support for RDI and GDB
	J-Link Ultra	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	unlimited Flash Breakpoints, native support by IAR, KEIL, Rowley, add-on-support for RDI and GDB
	J-Trace					•	•	•	•	•	•	•	•	•	•	•	•	J-Trace for ARM, J-Trace for Cortex M3

TCP/IP (Ethernet) Stacks

Ethernet is the most widely-installed Local Area Network (LAN) technology in the world. Using Ethernet in embedded applications enables high-bandwidth data transfer and, in particular, lets the system connect to the Internet without using a computer. That opens up a number of possibilities, including the ability to report status to a web page or receive instructions remotely.

TCP/IP stacks enable quick configuration of the required Ethernet network options to minimize your time to market. There are more than 20 NXP ARM MCUs with built-in Ethernet, covering all three generations of ARM (ARM7, ARM9, and the new Cortex-M3). NXP uses essentially the same implementation across all three generations, so designers can save time and resources by reusing their Ethernet function when systems move to the next generation of ARM.

Please note that this table only includes devices with an on-chip 10/100 Ethernet MAC peripheral. Many of the TCP/IP stacks listed here also run on LPC / LH devices without on-chip Ethernet peripheral (by using an external Ethernet MAC).

Supplier	TCP/IP Stacks	Supported Devices										Comments	
		LPC175x	LPC176x	LPC236x	LPC237x	LPC238x	LPC245x	LPC246x	LPC247x	LH795xx	LPC32xx		
CMX	CMX-TCP/IP			•	•	•	•	•	•	•	•	•	Full featured stack, source code included, no royalties
	CMX-MicroNet	•	•	•	•	•	•	•	•	•		•	Very small ROM/RAM footprint, source code, no royalties
Cypherbridge Systems	uSSL	•	•	•	•	•	•	•	•	•		•	SSL, SSH, SCP, secure bootloader and remote installer, crypto library
Express Logic	NetX	•	•	•	•	•	•	•	•	•		•	
	NetX Duo	•	•	•	•	•	•	•	•	•		•	
Green Hills	GHNNet	•	•	•	•	•	•	•	•	•		•	
I2ST	ECOM-Net	•		•					•	•		•	Full-duplex, thread-safe
IAR	PowerPac TCP/IP			•	•				•	•		•	
InterNiche	NicheLite	•	•	•	•	•	•	•	•	•		•	
	NicheStack/IPv4	•	•	•	•	•	•	•	•	•		•	
	NicheStack/Dual IPv4/v6	•	•	•	•	•	•	•	•	•		•	many additional plugins available
Keil / ARM	RL-TCPnet	•	•	•	•	•	•	•	•			•	part of RL-ARM
Mentor Graphics	Nucleus Ethernet											•	Easily ported to other NXP controllers
Micrium	µC/TCP-IP				•				•	•		•	
Micro Digital	smxNS	•	•	•	•	•	•	•	•	•		•	Out-of-the-box TCP/IP Solution, 30-Day Money Back Guarantee
NXP	NicheLite for LPC / LH	•	•	•	•	•	•	•	•	•		•	Free LPC/LH-specific NicheLite
OnChip	OT-NET			•	•	•	•	•	•	•			UDP,TCP,DHCP,DNS,ICMP,ARP
Quadros	RTXC Quadnet	•	•	•	•	•	•	•	•	•		•	Full-featured TCP/IP v4/6 solution
	RTXC Quark			•	•	•	•	•	•	•			Small footprint TCP/IPv4 solution
SEGGGER	embOS/IP	•	•	•	•	•	•	•	•			•	High-performance IP-Stack,
SEVENSTAX	TCP/IP Stack	•	•		•			•	•		•	•	TCP, UDP, IP, ICMP, IGMP, NTP
Wittenstein	Connect TCP/IP	•	•	•	•	•	•	•	•	•		•	
ZLG	ZLG/IP	•	•	•	•	•	•	•	•	•		•	
	Family	LPC1000			LPC2000						LH	¹⁾	¹⁾ LPC3000
	Core	M3			ARM7TDMI						²⁾	³⁾	²⁾ ARM720T ³⁾ ARM926EJ

USB Stacks (USB Device, USB Host, USB OTG)

Fast, reliable, easy-to-use, and able to draw power without a separate AC connection, the Universal Serial Bus (USB) is the world's most popular connector technology. Today, it appears in embedded applications of all kinds. In order to enable the rapid integration of USB support into your embedded system, USB stacks are critical and significantly reduce your time to market. With more than 50 options for ARM7, ARM9, and Cortex-M3 technologies, NXP leads the market in USB-equipped ARM MCUs. Please note that this table only includes devices with an on-chip USB Device, Host, and/or OTG peripheral.

Supplier	USB Stacks	Supported Devices																Comments					
		LPC13xx	LPC175x	LPC176x	LPC214x	LPC215x	LPC236x	LPC237x	LPC238x	LPC242x	LPC245x	LPC246x	LPC247x	LPC288x	LPC292x	LPC293x	LH795xx		LH7A4xx	LPC313x	LPC315x	LPC318x	LPC32xx
CMX	CMX-USB Device	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	USB Device stack
	CMX-USB Host		•	•			•		•	•	•	•	•		•	•			•	•	•	•	USB Host stack
	CMX-USB OTG		•	•			•		•	•	•	•	•		•	•			•	•	•	•	USB On-the-Go stack
Express Logic	USBX Device	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	USB Device Stack
	USBX Host		•	•			•		•	•	•	•	•		•	•		•	•	•	•	•	USB Host / OTG stack
HCC Embedded	EUSBD	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	Device stack w/ many class drivers
	EUSBH		•	•			•		•	•	•	•	•		•	•			•	•	•	•	Host stack w/ many class drivers
	EUSB-OTG		•	•			•		•	•	•	•	•		•	•			•	•	•	•	USB OTG stack
IAR	PowerPac USB	•	•	•	•	•	•	•				•	•								•		USB Device Stack
Jungo	USBware Device Stack						•	•	•	•	•	•	•										USB 1.1/2.0 Device Stack
	USBware Host Stack									•	•	•	•										USB 1.1/2.0 Host Stack
	USBware OTG Stack									•	•	•	•										USB On-The-Go Stack
Keil / ARM	RL-USB	•	•	•	•	•	•	•	•	•	•	•	•		•	•					•		USB Device stack; part of RL-ARM
Mentor Graphics	Nucleus-USB																						• Device/Host/OTG
Micrium	µC/USB Device	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•	•	USB Device stack
	µC/USB Host		•	•			•		•	•	•	•	•	•				•	•	•	•	•	USB Host stack
	µC/OTG																						USB On-the-Go stack
Micro Digital	smxUSBD	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	USB Device Stack, 30-Day Money Back Guarantee
	smxUSBH		•	•				•	•	•	•	•	•		•	•	•	•	•	•	•	•	USB Host Stack, 30-Day Money Back Guarantee
	smxUSBO						•	•	•	•	•	•	•								•	•	USB OTG Stack, 30-Day Money Back Guarantee
NXP	USBHostLite for LPC									•	•	•	•										Free USB Host Stack w/ MSC driver
OnChip	OT-USB (Device)	•			•	•	•	•	•	•	•	•	•	•									• Supports MSC,CDC,HID and Audio
	OT-USB (Host)						•		•	•	•	•	•										• Supports MSC,CDC,HID and Audio
Quadros	RTXCusb Device	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	Embedded USB Device stack
	RTXCusb Host		•	•			•		•	•	•	•	•		•	•			•	•	•	•	Embedded USB Host stack
	RTXCusb OTG		•	•			•		•	•	•	•	•		•	•			•	•	•	•	Embedded OTG stack
SEGGER	emUSB-Device	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Device Stack, runs out of the box
	emUSB-Host		•	•			•		•	•	•	•	•		•	•	•	•	•	•	•	•	Host Stack, runs out of the box, driver for LPC313x in development
SourceForge	lpcusb (free)	•			•	•																	Free open-source USB Device Stack
Thesycon	USB Device Stack	•	•	•			•	•	•	•	•	•	•									•	CDC, HID, Raw Bulk
	USB Host Stack		•	•				•	•	•	•	•	•									•	Mass Storage, CDC, HID
	Generic USBIO Driver		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Windows 2000/XP/Vista and CE
	USB CDC/ACM Driver		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Windows 2000/XP/Vista and CE
ZLG	ZLG/USB_H												•										• USB 1.1/2.0 Host Stack
	ZLG/USB_D	•			•		•	•	•			•	•										• USB1.1/2.0 Device Stack
Family		LPC1000			LPC2000										LH/LH7		LPC3000						
Core		M3			ARM7TDMI							ARM968		¹⁾	²⁾	ARM926EJ			¹⁾ ARM720T ²⁾ ARM926EJ				

CAN (Controller Area Network) Drivers

The CAN bus is widely used in vehicles to connect engine control unit and transmission, or (on a different bus) to connect the door locks, climate control, seat control, etc. Today the CAN bus is also used as a fieldbus in general automation environments, primarily due to the low cost of integrated CAN controllers. Many NXP microcontrollers are equipped with on-chip CAN modules. The drivers listed below will help you get your Controller Area Network up and running quickly. Please note that this table only includes devices with one or more on-chip CAN peripherals.

Supplier	CAN Drivers	Supported Devices															Comments	
		LPC1114x	LPC175x	LPC176x	LPC212x	LPC219x	LPC229x	LPC236x	LPC237x	LPC238x	LPC245x	LPC246x	LPC247x	LPC291x	LPC292x	LPC293x		LH754xx
CMX	CMX-CANopen	•	•		•	•	•	•	•	•	•	•	•					Full source code included, no royalties
eCosCentric	eCosPro-CAN	•					•			•		•						CANopen support also available
Keil / ARM	RL-CAN	•	•	•	•	•		•	•	•		•	•	•	•			part of RL-ARM
Mentor Graphics	Nucleus CAN				•													Easily ported to other NXP controllers
NXP	AppNote AN10674				•	•	•	•	•	•	•	•	•	•	•	•		LPC2000 CAN driver w/ FullCAN mode
Quadros	CANopenRT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		Real-time CANopen stack
	Family	LPC1000			LPC2000											LH		
	Core	M0	M3	ARM7TDMI								ARM968E				¹⁾	¹⁾ ARM7TDMI	

Graphics Libraries / Graphical User Interfaces (GUIs)

Liquid Crystal Displays (LCDs), especially those with color and touchscreen capabilities, make embedded systems much easier to use. As a result, they have become commonplace across the consumer, medical, industrial, recreational, communication, and automotive sectors. In recent years, the external LCD interface has moved onto the MCU itself, providing engineers with integrated options that reduce cost, shrink the design, increase reliability, and shorten time-to-market. Most of the software tools listed below are designed to provide graphical user interfaces (GUIs) for any application that operates with a graphical LCD. Please note that this table only includes devices with on-chip LCD graphics controller. Many of the software tools listed here also run on LPC devices without on-chip LCD graphics controller (by using an external LCD controller).

Supplier	Graphics Libraries / GUIs	Supported Devices					Comments
		LPC247x	LH754xx	LH795xx	LH7A4xx	LPC32xx	
I2ST	MicroUI / Micro Widget Toolkit	•				•	Simulation on PC, Multi-touch
Green Hills	Graphics / LCD library					•	Call GHS regarding driver availability
Mentor Graphics	Nucleus LCD					•	Easily ported to other NXP controllers
	Inflexion Engine			•	•	•	3D Touch Screen & Menuing UI Engine
	UI Designer			•	•	•	Drag & Drop Toolkit with Previewer
Micrium	µC/GUI	•		•	•	•	
Mobiclip	Mobiclip Video Codec			•	•	•	Mobiclip used to be Actimagine
Swell Software	PEG Pro			•		•	
	PEG+	•	•	•	•	•	
	C/PEG	•	•	•	•	•	
NXP	SWIM (AN10815)	•				•	Free, simple graphics library from NXP
SEGGER	emWIN	•	•	•	•	•	High-performance Graphic Library with target simulation for PC
ZLG	ZLG/GUI	•	•	•	•	•	
	Family	¹⁾	LH7 / LH7A			²⁾	¹⁾ LPC2000 ²⁾ LPC3000
	Core	³⁾		⁴⁾	⁵⁾	⁶⁾	³⁾ ARM7TDMI ⁴⁾ ARM720T ⁵⁾ ARM922T ⁶⁾ ARM926EJ

Supplier	Programming Software / Hardware	Supported Devices																				Comments							
		LPC1102	LPC111x	LPC11C1x	LPC13xx	LPC175x	LPC176x	LPC210x	LPC211x	LPC212x	LPC219x	LPC213x	LPC214x	LPC215x	LPC221x	LPC229x	LPC236x	LPC237x	LPC238x	LPC245x	LPC246x		LPC247x	LPC288x	LPC291x	LPC292x	LPC293x	LPC3141	LPC3131
pls	UDE MemTool	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Flash programming utility
Raisonance	RFlasher7					•	•	•																					Requires RKit-ARM free download
SEGGER	Flasher ARM	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Flash programming via JTAG/SWD, RS232-remote control, standalone operation for in-the-field-service
Signum	JTAGJet	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Programs all on-chip and external NOR and NAND devices via JTAG
SMH Technologies	FlashRunner for LPC																											Standalone / LAN/RS-232 connections	
System General	Txxx / Apxxx series					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Various programmers and sockets
Xeltek	SuperPro series																											Various programmers and sockets	
ZLG	SmartPRO / EasyPRO		•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Various programmers and sockets
	Family	LPC1000						LPC2000												LPC3000									
	Core	M0		M3		ARM7TDMI												ARM968E		ARM926EJ									

Free Driver Libraries, BSPs, and Code Bundles for NXP ARM-based microcontrollers

The free BSPs, drivers and libraries from NXP listed below provide a great starting point for your application development. To access these valuable software resources please visit www.nxp.com/microcontrollers and look for the software support documents.

Supplier	Free Driver Libraries and Code Bundles	Supported Devices																				Comments														
		LPC111x	LPC11C1x	LPC13xx	LPC175x	LPC176x	LPC210x	LPC211x	LPC212x	LPC219x	LPC213x	LPC214x	LPC215x	LPC221x	LPC229x	LPC236x	LPC237x	LPC238x	LPC242x	LPC245x	LPC246x		LPC247x	LPC288x	LPC291x	LPC292x	LPC293x	LH754xx	LH795xx	LH7A4xx	LPC13x	LPC15x	LPC18x	LPC32xx		
COREIPM	COREIPM RTX	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	IPMI, GPL2 code for i2c, RS232, flash, RTC	
NXP	LPC313x CDL																																		LPC313x Common Driver Library	
	LPC32x0 CDL																																			LPC32x0 Common Driver Library
	LPC1700 CMSIS				•	•																														ARM CMSIS compliant code for LPC17xx
	LPC111x/C1x	•	•																																	LPC1100 Code Bundle
	LPC1300	•																																		LPC1300 Code Bundle
NXP	LPC1700				•	•																														LPC1700 Code Bundle
	LPC213x/LPC214x										•	•	•																							LPC213x/LPC214x Code Bundle
	LPC2300/2400															•	•	•	•	•	•	•													LPC23xx/LPC24xx Code Bundle	
	LPC2800																							•												LPC288x Code Bundle
	LPC2900																								•	•	•									LPC2900 Example Software Package
	LPC3180																																•			LPC3180 Code Bundle
	LH754xx/SDK75401																										•									LH754xx Board Support Package (BSP)
	LH79520/SDK79520																												•							LH79520 Board Support Package (BSP)
	LH7952x/SDK79524																												•							LH79524/5 Board Support Package (BSP)
	LH7A400/SDK7A400																												•							LH7A400 Board Support Package (BSP)
	LH7A400/SDK7A404																												•							LH7A404 Board Support Package (BSP)
	Windows CE																																			Free WinCE 6.0 BSP from NXP
	Linux for LPC32x0																																			Free Linux 2.6.34 BSP from NXP
	Linux for LPC31xx																																			www.linux.com for latest & support
	Linux for LH7/LH7A																																			Free Linux 2.6.33 BSP from NXP
	Linux for LH7/LH7A																																			www.linux.com for latest & support
NXP	NicheLite for LPC				•	•										•	•	•	•	•	•	•													Free Linux 2.6.16 BSP from NXP	
	NicheLite for LH7																																			Free LPC-specific TCP/IP stack
NXP	USBHostLite for LPC															•	•	•	•	•	•	•													Free LH7-specific TCP/IP stack	
NXP	USBHostLite for LPC																																			Free USB Host Stack w/ MSC driver
NXP	CAN driver (AN10674)															•	•	•	•	•	•	•													LPC2000 CAN driver w/ FullCAN mode	
NXP	SWIM (AN10815)																																			Free, simple graphics library from NXP
	Family	LPC1000						LPC2000												LH7 / LH7A		LPC3000														
	Core	M0		M3		ARM7TDMI												ARM968E		1) 2) 3)		ARM926EJ														

Overview of tool support for NXP's ARM-based microcontrollers

Tool Supplier (in alphabetical order)	Web Site	Development Tool Categories														
		Evaluation Boards	IDE *	C/C++ Compiler **	Debugging software **	JTAG debuggers / trace emulators	Flash Programming HW / SW	OS / RTOS	TCP/IP Stacks	USB Stacks	CAN Drivers	Graphics libraries, LCD drivers, GUIs	File Systems	Java application development SW	Software Encryption libraries	NXP ARM-related Training Classes
Abatron	www.abatron.ch					•	•									
Adeneo Embedded	www.adeneo-embedded.com							•								
Advantech	www.aec.com.tw						•									
Advin	www.advin.com						•									
Altium / TASKING	www.tasking.com		•	•	•											
Amontec	www.amontec.com		•	•	•	•	•									
Arium	www.arium.com				•	•	•									
ARM	www.arm.com		•	•	•	•	•									
Ashling	www.ashling.com		•	•	•	•	•									
BPM Microsystems	www.bpmmicro.com						•									
Brendes Datentechnik	www.brendes.de					•	•									
BSQUARE	www.bsquare.com							•								
CMX Systems	www.cmx.com							•	•	•	•		•			
Code Red Technologies	www.code-red-tech.com	•	•	•	•	•	•									
CodeSourcery	www.codesourcery.com		•	•	•											
Computex	http://www.computex.co.jp/eg/index.html		•		•	•										
CooCox	www.coocox.org		•		•	•	•	•								
COREIPM	www.coreipm.com	•						•	•						•	
Cypherbridge Systems	www.cypherbridge.com								•							
Data I/O	www.data-io.com							•								
Doulos	www.doulos.com															•
eCosCentric	www.ecoscentric.com		•	•	•			•			•					
Eltec	www.eltec.sk							•								
Embedded Artists	www.embeddedartists.com	•														
Embedded Systems Academy	www.esacademy.com							•								
Embest	www.embedinfo.com	•	•	•	•	•	•									•
ENEA	www.enea.com							•								
eSysTech	www.esystech.com.br	•						•								•
Express Logic	www.expresslogic.com							•	•	•			•			
FreeRTOS.org	www.freertos.org							•								
Future Designs, Inc (FDI)	www.teamfdi.com	•						•								
Garz & Fricke	www.garz-fricke.de	•														
GHI electronics	www.ghielectronics.com	•						•								
Green Hills Software	www.ghs.com		•	•	•	•		•								
HCC-Embedded	www.hcc-embedded.com									•			•			
Hi-Lo Systems	www.hilosystems.com.tw							•								
Hitex Development Tools	www.hitex.com	•	•	•	•	•	•									•
IAR Systems	www.iar.com	•	•	•	•	•	•	•	•	•			•			
Ice Technology (Nohau brand)	www.icetech.com	•	•	•	•	•	•									
ImageCraft	www.imagecraft.com	•	•	•	•		•									
InterNiche	www.iniche.com							•	•							•
IS2T	www.is2t.com		•		•			•	•			•		•		

* OEM or based on Eclipse

** OEM or based on GNU or Eclipse

		Development Tool Categories														
Tool Supplier (in alphabetical order)	Web Site	Evaluation Boards	IDE *	C/C++ Compiler **	Debugging software **	JTAG debuggers / trace emulators	Flash Programming HW / SW	OS / RTOS	TCP/IP Stacks	USB Stacks	CAN Drivers	Graphics libraries, LCD drivers, GUIs	File Systems	Java application development SW	Software Encryption libraries	NXP ARM-related Training Classes
iSYSTEM	www.isystem.com	•	•	•	•	•	•									
Jungo	www.jungo.com									•						
Keil	www.keil.com	•	•	•	•	•	•	•	•	•	•		•			
LabTools (Mosaico)	www.mosaico.com.br	•														•
Linux - community supported	www.lpclinux.com	•						•								
Lauterbach	www.lauterbach.com		•		•	•	•									
Leap Electronic	www.leap.com.tw						•									
LINPO	www.linposh.com.cn	•														
Logic Product Development	www.logicpd.com	•														
Mentor Graphics	www.mentor.com		•	•	•	•		•	•	•	•	•	•			
Micrium	www.micrium.com							•	•	•		•	•			
Micro Digital	www.smxrtos.com							•	•	•			•			
Mobiclip (formerly Actimagine)	www.actimagine.com											•				
National Instruments	www.ni.com		•	•	•											
NTRU	www.ntru.com														•	
Oasis Technologies	www.oasistechsol.com	•	•	•	•	•	•									
Olimex	www.olimex.com	•				•										
OnChip Technologies	www.onchiptech.com								•	•			•			
PASAT	www.tinyarm.com	•														
PHYTEC	www.phytec.com	•														
Phyton	www.phyton.com	•	•	•	•	•	•									
pls Development Tools	www.pls-mc.com		•		•	•	•									
Pumpkin	www.pumpkininc.com							•								
Quadros Systems	www.quadros.com							•	•	•	•		•			
Raisonance	www.raisonance.com		•	•	•	•	•									
Rowebots	www.rowebots.com							•								
Rowley Associates	www.rowley.co.uk		•	•	•	•	•									
SEGGER	www.segger.com				•	•	•	•	•	•		•	•			
Sevenstax	www.sevenstax.com								•							
Signum	www.signum.com	•	•	•	•	•	•									
SMH Technologies	www.smh-tech.com						•									
SPJ Technologies	www.spjsystems.com	•	•	•	•	•	•									
Swell Software	www.swellsoftware.com											•				
System General	www.systemgeneral.com						•									
Thesycon	www.thesycon.com									•						
uCDragon Technology Co.	www.ucdragon.cn	•				•										
Wind River	www.windriver.com							•								
Wittenstein	www.wittenstein.de							•								
Xeltek	www.xeltek.com						•									
Yokogawa	www.yokogawa-digital.com				•	•	•									
ZLG	www.zlgmcu.com	•	•		•	•	•	•	•	•	•	•	•		•	

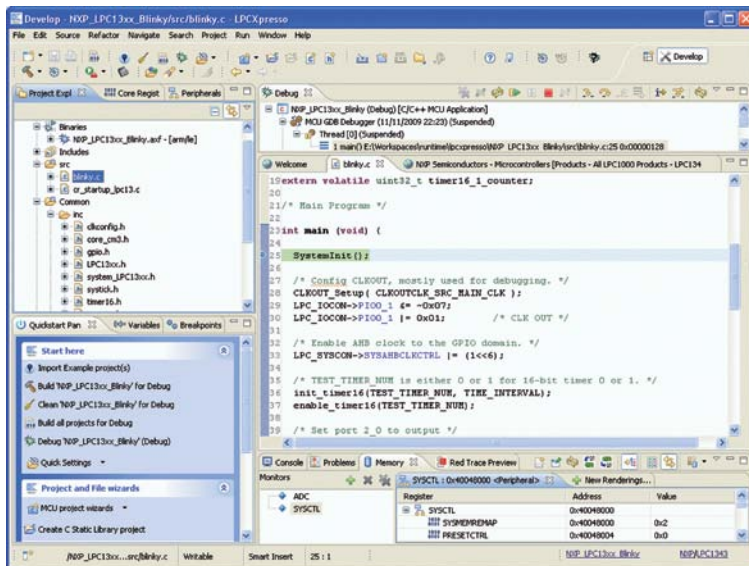
* OEM or based on Eclipse

** OEM or based on GNU or Eclipse



LPCXpresso:

LPCXpresso™ is a low-cost development platform available from NXP. It supports NXP's ARM-based LPC microcontrollers. The platform is comprised of a simplified Eclipse-based IDE and low-cost target boards which include an attached JTAG debugger. LPCXpresso is an end-to-end solution enabling embedded engineers to develop their applications from initial evaluation to final production.



LPCXpresso IDE:

LPCXpresso's IDE is a highly-integrated software development environment for NXP's LPC microcontrollers, which includes all the tools necessary to develop high-quality software solutions in a timely and cost effective manner. LPCXpresso is based on Eclipse with many LPC-specific enhancements. It also features the latest version of the industry standard GNU tool chain with optimized C libraries providing professional quality tools at low cost. The LPCXpresso IDE can build an executable of any size with full code optimization, and it supports a download limit of 128 KB after registration.

LPC-Link:

The JTAG/SWD debugger portion of an LPCXpresso board is called the LPC-Link™. The LPC-Link is equipped with a 10-pin JTAG header, and it seamlessly interfaces with a target via USB (the USB interface and other debug features are provided by NXP's ARM9 based LPC3154 MCU). Cutting the traces between the LPC-link and the target will make the LPC-Link a stand-alone JTAG debugger. This enables the LPCXpresso platform to be connected to an external target and used to develop for a wide variety of NXP's Cortex-M0, Cortex-M3, and ARM7/9 based applications.

www.nxp.com/lpcxpresso





NXP (www.nxp.com/microcontrollers) offers the complete ARM portfolio consisting of Cortex-MTM, ARM7-, and ARM9-, based microcontrollers. NXP's ARM-based LPC1000, LPC2000, and LPC3000 families include highly integrated peripherals, such as Ethernet, USB (Universal Serial Bus host/device/OTG (On-The-Go)), CAN (controller-area-network), LCD-controller, and many serial-communications peripherals. NXP has the industry's leading Cortex microcontroller solution portfolio.

The ARM Cortex-M0 based devices offer the lowest-priced 32-bit microcontroller solution, bringing higher value and ease of use than existing 8-/16-bit microcontrollers through unprecedented performance, simplicity, low power, and dramatic reductions in code size for all 8-/16-bit applications.

The ARM Cortex-M3 based microcontroller devices feature a high level of integration and low power consumption with system enhancements such as enhanced debug features and a higher level of support block integration.

For more information about NXP tools, evaluation boards, and development support, please visit www.ics.nxp.com/support/tools/microcontrollers

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