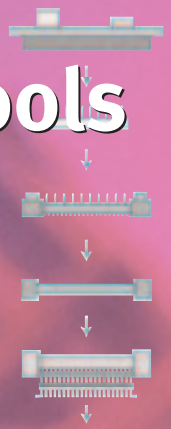
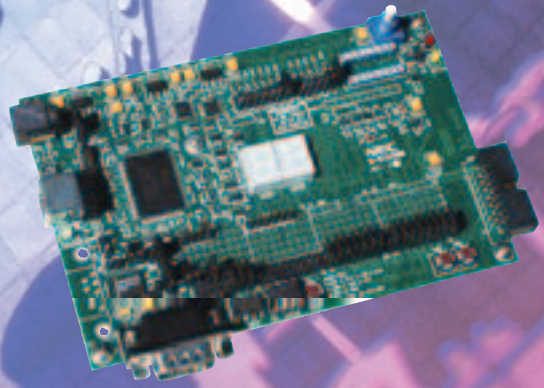


Microcontroller and Development Tools Selection Guide



Target system

78K New 8-Bit All Flash Microcontrollers

Core	Device				Memory				Interfaces				Timers				Additional Peripherals				Misc. Information		Development Tools	
	Nickname	Part Number	Packages*	Pins*	Size [KB]	Type	RAM [Bytes]	I/O Lines	CSs/UARTs	CAN	PC	External Bus [Data/Addr]	Channels	PWMs	Ext. Clock Speed [MHz]	Internal Oscillator(s)	Sub-clock [Hz/768 kHz]	LCD	A/D / D/A Converter	Supply Voltage [V]	Other Features*	Low-Cost Tools*	In-Circuit Emulator / Emulation Board	
78K05	78K05/KY1+	μPD78F9210	GR-JJG	16	1	Flash	128	14	-	-	-	3	1 x 8-bit, 1 x 16-bit	10	8 MHz, 240 kHz	-	-	4 x 10-bit/-	2.0 - 5.5	LVI, POC, SVF	M/O	NS emulator available		
		μPD78F9211																						
		μPD78F9212																						
78K05	78K05/KA1+	μPD78F9221	MC-5A4	20	2	Flash	128	17	-1	-	-	4	1 x 8-bit, 1 x 16-bit	10	8 MHz, 240 kHz	-	-	4 x 10-bit/-	2.0 - 5.5	LIN, LVI, POC, SVF	M/O	NS emulator available		
		μPD78F9222																						
78K05	78K05/KB1+	μPD78F9232	MC-5A4	30	4	Flash	256	26	-1	-	-	4	1 x 8-bit, 1 x 16-bit	10	8 MHz, 240 kHz	-	-	4 x 10-bit/-	2.0 - 5.5	LIN, LVI, POC, SVF	O	NS emulator available		
		μPD78F9234																						
78K80	78K0/LE2	μPD78F0361	GB-UET-A / GK-UET-A	64	16	Flash	768	26	1/2	-	√	-/-	7	4 x 8-bit	20	8 MHz, 240 kHz	√	20 x 4	5 x 10-bit / -	1.8 - 5.5	POC, WW, SVF	O	QB-78K0LX2-ZZZ	
		μPD78F0362																						
		μPD78F0363																						
	78K0/LF2	GC-UET-A / GC-8EU-A	80	Flash	24	1024	36	28	1/2	-	√	-/-	7	4 x 8-bit	20	8 MHz, 240 kHz	√	26 x 4	8 x 10-bit / -	1.8 - 5.5	POC, WW, SVF	O		
					μPD78F0372																			
					μPD78F0373																			
					μPD78F0374																			
					μPD78F0375																			
					μPD78F0376																			
					μPD78F0382																			
					μPD78F0383																			
					μPD78F0384																			
	78K0/LG2	GC-8EA-A / GF-JBT-A	100	Flash	32	1024	42	2/2	-	√	-/-	7	4 x 8-bit	20	8 MHz, 240 kHz	√	40 x 4	8 x 10-bit / -	1.8 - 5.5	POC, WW, SVF	O			
					μPD78F0393																			
					μPD78F0394																			
					μPD78F0395																			
					μPD78F0396																			
	78K0/KB2	MC-5A4-A	30	Flash	8	512	23	1/2	-	√	-/-	6	4 x 8-bit, 1 x 16-bit	20	8 MHz, 240 kHz	-	-	4 x 10-bit/-	1.8 - 5.5	LVI, POC, SVF, WW	M/O			
					μPD78F0500																			
					μPD78F0501																			
					μPD78F0502																			
					μPD78F0503																			
	78K0/KC2	GB-8ES	44	Flash	16	768	37/41	1/2	-	√	-/-	7	4 x 8-bit, 1 x 16-bit	20	8 MHz, 240 kHz	√	-	8 x 10-bit/-	1.8 - 5.5	LVI, POC, SVF, WW	M/O			
					μPD78F0511																			
μPD78F0512																								
μPD78F0513																								
μPD78F0514																								
78K0/KD2	GB-UET-A	52	Flash	16	768	45	1/2	-	√	-/-	7	4 x 8-bit, 1 x 16-bit	20	8 MHz, 240 kHz	√	-	8 x 10-bit/-	1.8 - 5.5	LVI, POC, SVF, WW	M/O				
				μPD78F0521																				
				μPD78F0522																				
				μPD78F0523																				
				μPD78F0524																				
78K0/KE2	GB-UET-A / GB-UBS-A / GK-UET-A	64	Flash	16	768	55	2/2	-	√	-/-	7	4 x 8-bit, 1 x 16-bit	20	8 MHz, 240 kHz	√	-	8 x 10-bit/-	1.8 - 5.5	LVI, POC, SVF, WW	M/O				
				μPD78F0531																				
				μPD78F0532																				
				μPD78F0533																				
				μPD78F0534																				
				μPD78F0535																				
				μPD78F0536																				
78K0/KF2	GK-8EU-A / GC-UET-A	80	Flash	48	2048	71	3/2	-	√	-/-	8	4 x 8-bit, 2 x 16-bit	20	8 MHz, 240 kHz	√	-	8 x 10-bit/-	1.8 - 5.5	LVI, POC, SVF, WW	O				
				μPD78F0544																				
				μPD78F0545																				
				μPD78F0546																				
				μPD78F0547																				
78K0/KB1(+)	MC-5A4	30	Mask	8	512	22	1/1	-	-	-	5	3 x 8-bit, 1 x 16-bit	10	240 kHz	-	-	4 x 10-bit/-	2.7 - 5.5	LVI, POC, CM, LIN	M/O				
				μPD780101																				
				μPD780102																				
				μPD780103																				
				μPD78F0103Mx																				
				μPD78F0101H																				
				μPD78F0102H																				
78K0/KC1(+)	GB-8ES	44	Mask	8	512	32	1/2	-	-	-	7	4 x 8-bit, 1 x 16-bit	10	240 kHz	√	-	8 x 10-bit/-	2.7 - 5.5	POC, LVI, CM, LIN	M/O				
				μPD780111																				
				μPD780112																				
				μPD780113																				
				μPD780114																				
				μPD78F0114Mx																				
				μPD78F0112H																				
78K0/KD1(+)	GB-8ET	52	Mask	8	512	39	1/2	-	-	-	7	4 x 8-bit, 1 x 16-bit	10	240 kHz	√	-	8 x 10-bit/-	2.7 - 5.5	CM, LIN, LVI, POC	M/O				
				μPD780121																				
				μPD780122																				
				μPD780123																				
				μPD780124																				
				μPD78F0124Mx																				
				μPD78F0122H																				
78K0/KE1(+)	GB-8EU / GC-8BS / GK-9ET	64	Mask	8	512	51	2/2	-	-	-	7	4 x 8-bit, 1 x 16-bit	10	240 kHz	√	-	8 x 10-bit/-	2.7 - 5.5	LIN, POC, LVI, CM	M/O				
				μPD780131																				
				μPD780132																				
				μPD780133																				
				μPD780134																				
				μPD780136																				
				μPD780138																				
				μPD78F0134Mx																				
				μPD78F0138Mx																				
				μPD78F0132H																				
				μPD78F0133H																				
				μPD78F0134H																				
				μPD78F0136H																				
				μPD78F0138H																				
				μPD78F0138HD																				
78K0/KF1(+)	GC-8BT / GK-9EU	80	Mask	24	1024	67	3/2	-	-	8/16	7	4 x 8-bit, 1 x 16-bit	10	240 kHz	√	-	8 x 10-bit/-	2.7 - 5.5	LIN, POC, LVI, CM	M/O				
				μPD780143																				
				μPD780144																				
				μPD780146																				
				μPD780148																				
				μPD78F0148Mx																				
				μPD78F0146H																				
Motor Control II	GK-9ET	64	Flash	32	1024	51	1/1	-	-	-	6	3 x 8-bit, 1 x 16-bit, 3 x 10-bit for inverter	20	240 kHz	√	-	8 x 10-bit/-	3.3 - 5.5	LVI, POC, SVF	M/O				
				μPD78F0714																				
78K0/FC1(+)	GB-8ES	44	Flash	32	2048	33	1/2	1	-	-	8	4 x 8-bit, 1 x 16-bit	16	240 kHz	√	-	8 x 10-bit/-	3.3 - 5.5	CM, LIN, LVI, POC, SVF	M/O				
				μPD78F0871																				
				μPD78F0872																				
78K0/FE1(+)	GB-8EU / GK-9ET	64	Flash	48	3072	51	2/2	1	-	-	8	4 x 8-bit, 1 x 16-bit	16	240 kHz	√	-	12 x 10-bit/-	3.3 - 5.5	M, LIN, LVI, POC, SVF	M/O				
				μPD78F0874																				
78K0/FF1(+)	GC-8BT / GK-9EU	80	Flash	60	3072	67	2/2	1	-	-	8	4 x 8-bit, 1 x 16-bit	16	240 kHz	√	-	16 x 10-bit/-	3.3 - 5.5	M/O					

Instructions:
Use the *Development Tools*, *Packages* and *Pins* columns to find tools information on reverse page.

*CM = Clock monitor
LIN = Advanced, LIN-capable UART
LVI = Low-voltage indicator
POC = Power-on-clear (advanced power-on reset)
RC = RC oscillator
RCF = ROM correction feature

SG = Sound generator
SMC = Stepper motor controller
SVF = Single-voltage flash, (secure) self-programming
WW = Window watchdog

Low-cost tools (see reverse side)
M = M-Station Evaluation Kit
O = MINICUBE supported. Use device with OCD for development.

NS Emulator = Traditional full-function ICE

p = Refer to tables below for pin counts and package availability.
√ = yes
- = no
√ = optional

Pins	16	20	30	44	48	52
Package	GR-JJG	MC-5A4	MC-5A4	GB-8ES-A	GB-8ES	GA-8EU-A
Type (mm)	SSOP 225 mil	SSOP 300 mil	SSOP 300 mil	LQFP (10 x 10)	LQFP (7 x 7)	LQFP (10 x 10)

Pins	64						80				100	
Package	GB-UET-A	GK-UET-A	GK-9ET	GB-8EU	GC-8BS	GB-UBS-A	GC-UET-A	GC-8BT	GK-8EU-A	GK-9EU	GC-8EA-A	GF-JBT-A
Type (mm)	LQFP (10 x 10)	LQFP (12 x 12)	TQFP (12 x 12)	LQFP (14 x 14)	LQFP (14 x 14)	QFP (14 x 14)	LQFP (12 x 12)	TQFP (12 x 12)	LQFP (14 x 14)	QFP (14 x 20)		

Pin/ Package	Device Subseries	Motor Control II	78K0/Fx1	78K0/Kx1+	78K0/Kx2	78K0/Lx2
			QB-78K0FX1	QB-78K0KX1H	QB-78K0KX2	QB-78K0LX2
100GC	IECUBE	QB-780714				
	Exchange adapter					QB-100CC-EA-01T
	ICE connector					QB-100CC-YQ-01T
	Target connector					QB-100CC-NQ-01T
	Mount adapter					QB-100CC-HQ-01T
	Space adapter					QB-100CC-YS-01T
100GF	Exchange adapter					QB-144-EP-01S
	ICE connector					QB-100GF-EA-03T
	Target connector					QB-100GF-YQ-01T
	Mount adapter					QB-100GF-NQ-01T
	Space adapter					QB-100GF-HQ-01T
	Check pin adapter					QB-100GF-YS-01T
80GC	Exchange adapter		QB-80GC-EA-01T	QB-80GC-EA-01T	QB-80GC-EA-01T	QB-80GC-EA-04T*
	ICE connector		QB-80GC-YQ-01T	QB-80GC-YQ-01T	QB-80GC-YQ-01T	QB-80GC-EA-05T
	Target connector		QB-80GC-NQ-01T	QB-80GC-NQ-01T	QB-80GC-NQ-01T	QB-80GC-YQ-01T
	Mount adapter		QB-80GC-HQ-01T	QB-80GC-HQ-01T	QB-80GC-HQ-01T	QB-80GC-NQ-01T
	Space adapter		QB-80GC-YS-01T	QB-80GC-YS-01T	QB-80GC-YS-01T	QB-80GC-HQ-01T
	Check pin adapter		QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-80GC-YS-01T
80GK	Exchange adapter		QB-80GK-EA-01T	QB-80GK-EA-01T	QB-80GK-EA-01T	QB-80GK-EA-04T*
	ICE connector		QB-80GK-YQ-01T	QB-80GK-YQ-01T	QB-80GK-YQ-01T	QB-80GK-EA-05T
	Target connector		QB-80GK-NQ-01T	QB-80GK-NQ-01T	QB-80GK-NQ-01T	QB-80GK-YQ-01T
	Mount adapter		QB-80GK-HQ-01T	QB-80GK-HQ-01T	QB-80GK-HQ-01T	QB-80GK-NQ-01T
	Space adapter		QB-80GK-YS-01T	QB-80GK-YS-01T	QB-80GK-YS-01T	QB-80GK-HQ-01T
	Check pin adapter		QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-80GK-YS-01T
64GA	Exchange adapter					QB-64GA-EA-01T
	ICE connector					QB-64GA-YQ-01T
	Target connector					QB-64GA-NQ-01T
	Mount adapter					QB-64GA-HQ-01T
	Space adapter					QB-64GA-YS-01T
	Check pin adapter					QB-144-CA-01
64GB	Exchange adapter		QB-64GB-EA-03T	QB-64GB-EA-01T	QB-64GB-EA-04T	QB-64GB-EA-07T
	ICE connector		QB-64GB-YQ-01T	QB-64GB-YQ-01T	QB-64GB-YQ-01T	QB-64GB-YQ-01T
	Target connector		QB-64GB-NQ-01T	QB-64GB-NQ-01T	QB-64GB-NQ-01T	QB-64GB-NQ-01T
	Mount adapter		QB-64GB-HQ-01T	QB-64GB-HQ-01T	QB-64GB-HQ-01T	QB-64GB-HQ-01T
	Space adapter		QB-64GB-YS-01T	QB-64GB-YS-01T	QB-64GB-YS-01T	QB-64GB-YS-01T
	Check pin adapter		QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01
64GC	Exchange adapter					QB-64GC-EA-01T
	ICE connector					QB-64GC-YQ-01T
	Target connector					QB-64GC-NQ-01T
	Mount adapter					QB-64GC-HQ-01T
	Space adapter					QB-64GC-YS-01T
	Check pin adapter					QB-144-CA-01
64GK	Exchange adapter	QB-64GK-EA-01T	QB-64GK-EA-03T	QB-64GK-EA-01T	QB-64GK-EA-04T	QB-64GK-EA-05T
	ICE connector	QB-64GK-YQ-01T	QB-64GK-YQ-01T	QB-64GK-YQ-01T	QB-64GK-YQ-01T	QB-64GK-YQ-01T
	Target connector	QB-64GK-NQ-01T	QB-64GK-NQ-01T	QB-64GK-NQ-01T	QB-64GK-NQ-01T	QB-64GK-NQ-01T
	Mount adapter	QB-64GK-HQ-01T	QB-64GK-HQ-01T	QB-64GK-HQ-01T	QB-64GK-HQ-01T	QB-64GK-HQ-01T
	Space adapter	QB-64GK-YS-01T	QB-64GK-YS-01T	QB-64GK-YS-01T	QB-64GK-YS-01T	QB-64GK-YS-01T
	Check pin adapter	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01
52GB	Exchange adapter					QB-52GB-EA-01T
	ICE connector					QB-52GB-YQ-01T
	Target connector					QB-52GB-NQ-01T
	Mount adapter					QB-52GB-HQ-01T
	Space adapter					QB-52GB-YS-01T
	Check pin adapter					QB-144-CA-01
48GA	Exchange adapter		QB-48GA-EA-01T			QB-48GA-EA-02T
	ICE connector		QB-48GA-YQ-01T			QB-48GA-YQ-01T
	Target connector		QB-48GA-NQ-01T			QB-48GA-NQ-01T
	Mount adapter		QB-48GA-HQ-01T			QB-48GA-HQ-01T
	Space adapter		QB-48GA-YS-01T			QB-48GA-YS-01T
	Check pin adapter		QB-144-CA-01			QB-144-CA-01
44GB	Exchange adapter		QB-44GB-EA-02T	QB-44GB-EA-01T	QB-44GB-EA-03T	
	ICE connector		QB-44GB-YQ-01T	QB-44GB-YQ-01T	QB-44GB-YQ-01T	
	Target connector		QB-44GB-NQ-01T	QB-44GB-NQ-01T	QB-44GB-NQ-01T	
	Mount adapter		QB-44GB-HQ-01T	QB-44GB-HQ-01T	QB-44GB-HQ-01T	
	Space adapter		QB-44GB-YS-01T	QB-44GB-YS-01T	QB-44GB-YS-01T	
	Check pin adapter		QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	
30MC	Exchange adapter					QB-30MC-EA-01T
	ICE connector					QB-30MC-YQ-01T
	Target connector					QB-30MC-NQ-01T
	Mount adapter					QB-30MC-HQ-01T
	Space adapter					QB-30MC-YS-01T
	Check pin adapter					QB-144-CA-01

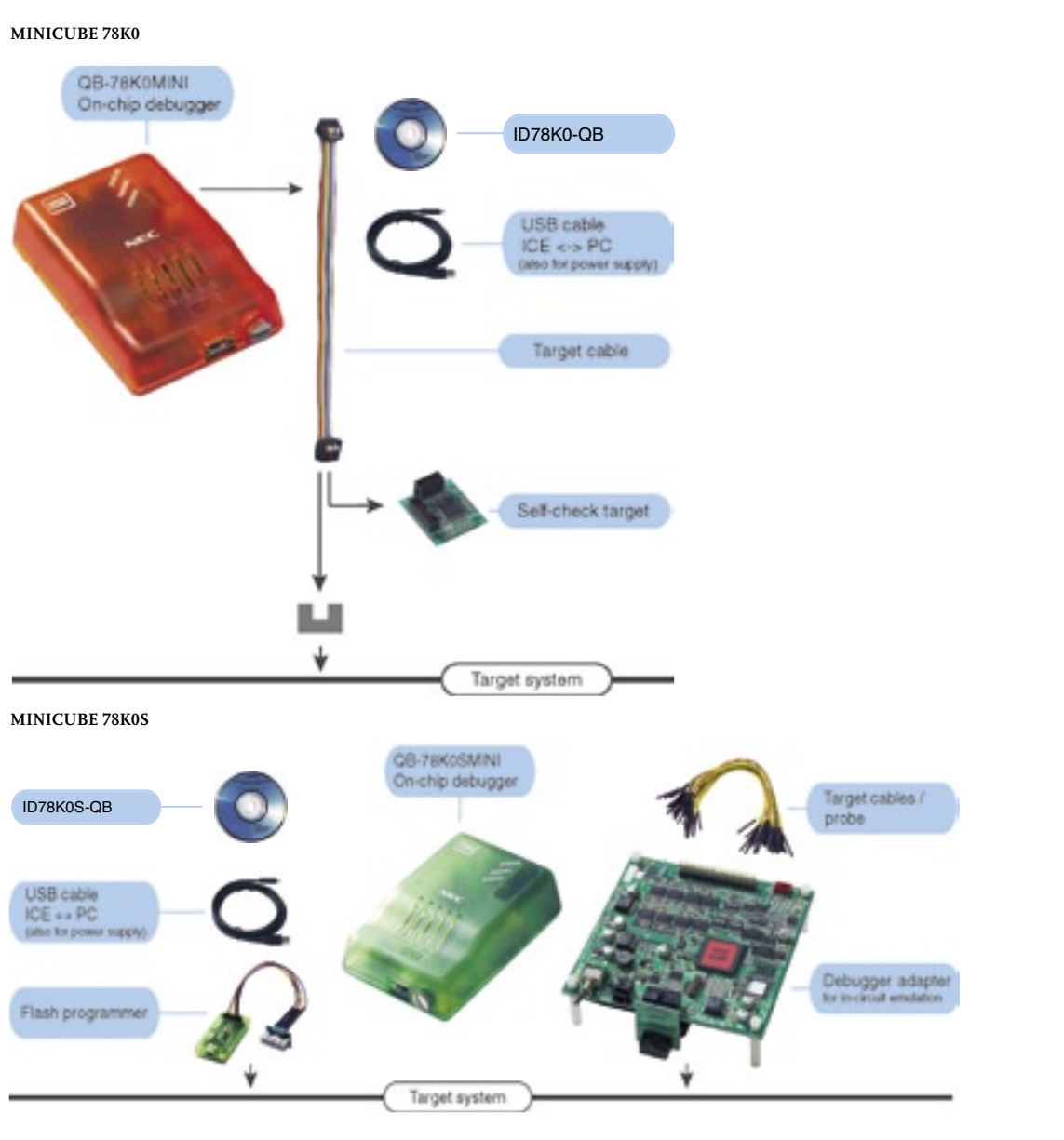


* Used for devices with A/D

Support Device	ICE Order Code	Device Adapter
78K0S/Kx1+	QB-78K0SKX1MINI	-
μPD78F014HD	QB-78K0MINI	QB-78K0KX1H-DA + QB-30MC-YQ-01T + QB-30MC-YS-01T
μPD78F0138HD		
μPD78F0124HD		
μPD78F0114HD		
μPD78F010xH		
μPD78F087x	QB-78K0MINI	-
μPD78F0547D	QB-78K0MINI	-
μPD78F0537D		
μPD78F0527D		
μPD78F0513D		
μPD78F0503D		
μPD78F0397D	QB-78K0MINI	-
μPD78F0385D		
μPD78F0363D		
μPD78F0714	QB-78K0MINI	-

Target board must contain a device with OCD (support device). Support device is used to evaluate devices within the subseries during development.

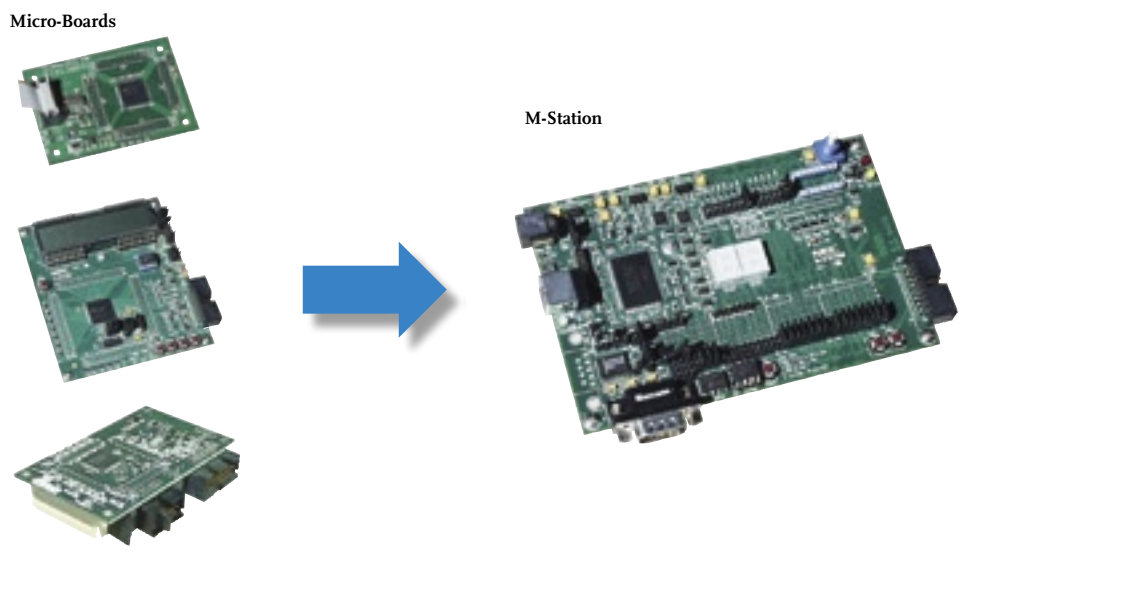
Legend: Mandatory (yellow), Optional (green), Included in delivery (blue)



Micro-Board	Supported Devices			
M-78F9222	μPD78F921x	μPD78F922x	-	-
M-78F0138	μPD78013x	μPD78012x	μPD78011x	μPD78010x
M-78F0148H	μPD78014xH	μPD78014x	-	-
M-78F0537	μPD78F053x	μPD78F052x	μPD78F051x	μPD78F050x
M-78F0714	μPD78F071x	-	-	-
M-78F087x	μPD78F087x	-	-	-

Micro-board supports devices within subseries. Example: K0/KF1+ covers all K0/Kx1+ devices for evaluation.

Complete evaluation kit requires M-Station baseboard and micro-board.



DemoKit-KA1 for 78K0S/Kx1+

- Easy-to-use device demonstration capabilities
 - pushbuttons
 - LED output
 - AD reference voltage
 - I/O lines
 - UART interface
- Power supply via USB interface
- Flash programming software
- Sample programs provided



Pin/Package	Flash Adapter
16GR	FA-78F9212GR-JJG-MX
20MC	FA-20MC-5A4-A
30MC	FA-30MC-5A4-A
44GB	FA-44GB-8ES-A
48GA	FA-78F0515GA-8EU-MX
48GA	FA-78F0879GA-9EU-MX
52GB	FA-52GB-8ET-A
64GA	FA-78F0537GA-8EV-MX
64GB	FA-64GB-8EU-A
64GK	FA-64GK-9ET-A
64GK	FA-78F0138HDGK-8A8-MX
64GC	FA-64GC-8BS-A
80GC	FA-80GC-8BT-A
80GK	FA-80GK-9EU-A
100GC	FA-100GC-8EU-A
100GF	FA-100GF-3BA-A

Flash programmer

- Universal for all MCU flash devices from NEC Electronics
- PC communication
 - via UART
 - via USB
- Order code: PG-FP4-E

Gang programmer

- Gang programmer available; please contact your sales representative.

PG-FPL

- Low-price programmer
 - for all V850 devices
 - for 78K0/Kx1+ devices
- Programmer
- USB cable
- Order code: PG-FPL

PG-FPL2

- Low-price programmer
 - for 78K0S/Kx1+ devices
- Contents
 - Programmer
 - USB cable
- Order code: PG-FPL2

PG-FPL3

- Low-price programmer
 - for 78K0/Kx2 devices
- Contents
 - Programmer
 - USB cable
- Order code: PG-FPL3



Software Tools	78K0S	78K0
Software package	SP78K0S	SP78K0
Compiler and assembler	CA78K0S	CA78K0
System simulator	SM78K0S	SM78K0

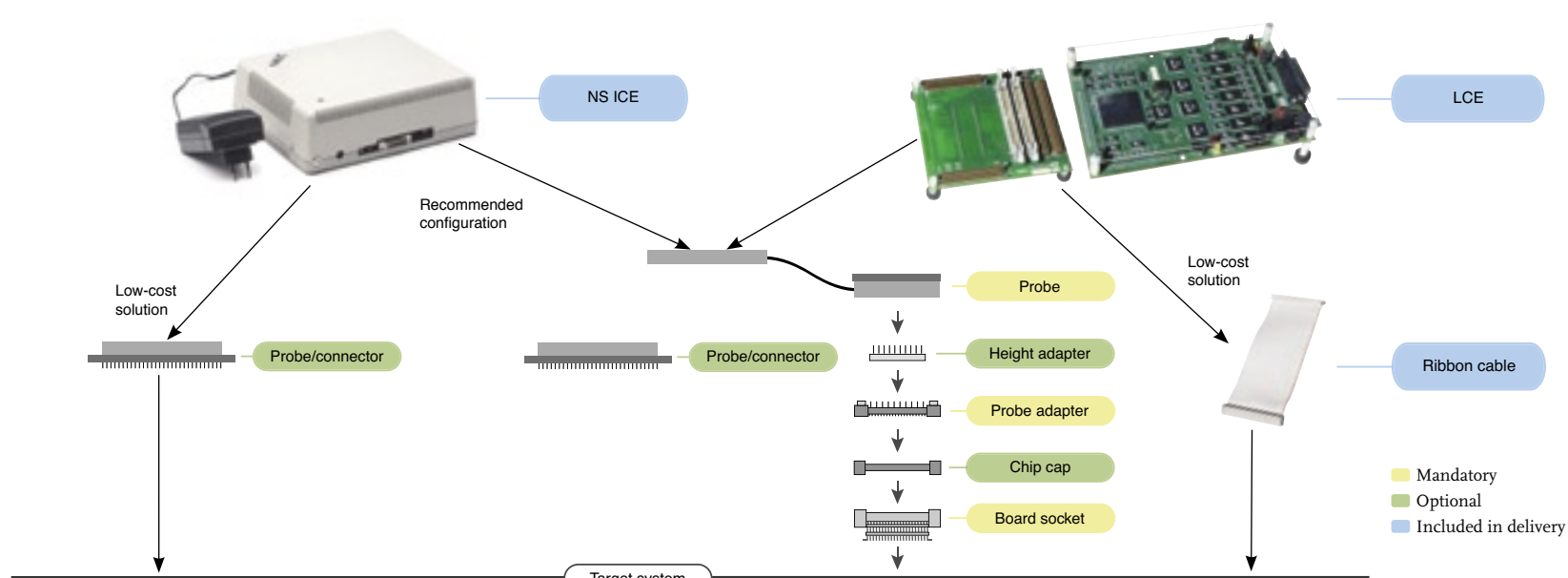
SP78K0 and SP78K0S include:

- Relocatable assembler
- C compiler
- System simulator
- Integrated debugger
- Device files

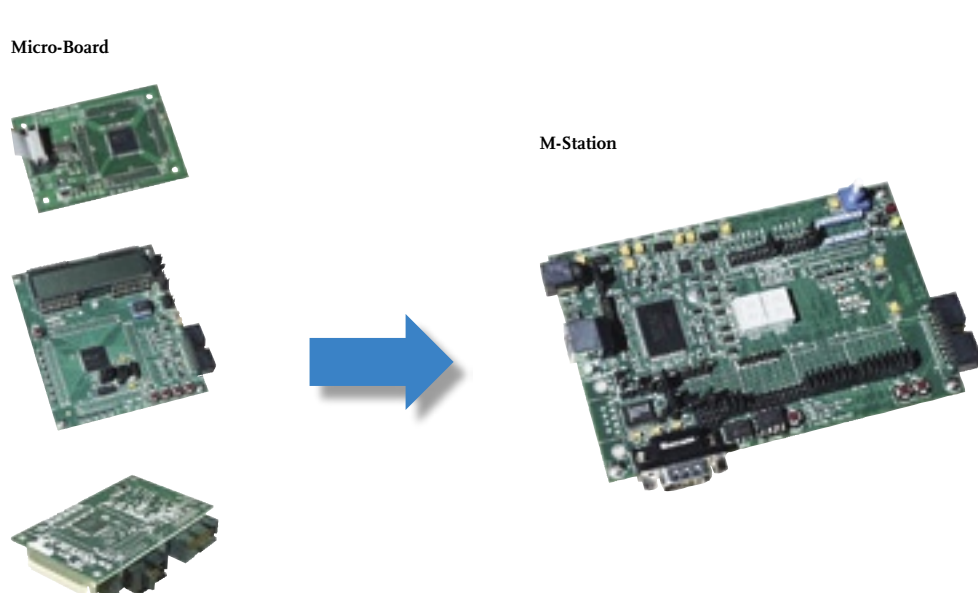


ICE	78K0S	78K0S	78K0	78K0
	IE-78K0S-NS-A	LCE-78K0S	IE-78K0-NS-A	LCE-78K0
Power supply	IE-70000-MC-PS	-	IE-70000-MC-PS	-
Emulation board	Device specific (refer to device table)			
PCI interface card	IE-70000-PCI-IF-A	-	IE-70000-PCI-IF-A	-
PCMCIA interface card	IE-70000-CD-IF-A	-	IE-70000-CD-IF-A	-
USB interface adapter	-	LCE-USB-IF	-	LCE-USB-IF

Pin Count	Type	Board Socket	Probe Adapter	Probe	Chip Cap	Height Adapter
		Mandatory	Mandatory	Mandatory	Optional	Optional
20MC	SSOP	EV-NSPACK20BK	EV-YSPACK30BK	LCP30MCS-250	EV-HSPACK30BK	EV-YSSOCKET30BK
30MC	SSOP	EV-NSPACK30BK	EV-YSPACK30BK	LCP30MCS-250	EV-HSPACK30BK	EV-YSSOCKET30BK
44GB	LQFP	EV-NQPACK044SA	EV-YQPACK044SA	NP-44GB-TQ	EV-HQPACK044SA	EV-YQSOCKET044SAF
48GA	TQFP	EV-NQPACK048SA	EV-YQPACK048SA	NP-48GA-TQ	EV-HQPACK048SA	EV-YQSOCKET048SAF
52GB	LQFP	EV-NQPACK052SB	EV-YQPACK052SB	NP-52GB-TQ	EV-HQPACK052SB	EV-YQSOCKET052SBF
64GB	LQFP	EV-NQPACK064SD	EV-YQPACK064SD	NP-64GB-TQ	EV-HQPACK064SD	EV-YQSOCKET064SDF
64GC	TQFP	EV-NQPACK064SB	EV-YQPACK064SB	NP-64GC	EV-HQPACK064SB140	EV-YQSOCKET064SBF
64CW	SDIP	standard SDIP	-	NP-64CW	-	-
73F1	FBGA	-	-	NP-73F1-CN3	-	-
80GK	TQFP	EV-NQPACK080SB	EV-YQPACK080SB	LCP80GK-250	EV-HQPACK080SB	EV-YQSOCKET080SBF
80GC	QFP	EV-NQPACK080SB	EV-YQPACK080SB	NP-80GC-TQ	EV-HQPACK080SB	EV-YQSOCKET080SBF
80GF	QFP	EV-NQPACK080RA	EV-YQPACK080RA	NP-80GF-TQ	EV-HQPACK080RA	EV-YQSOCKET080RAF
100GC	LQFP	EV-NQPACK100SD	EV-YQPACK100SD	NP-100GC	EV-HQPACK100SD	EV-YQSOCKET100SDF
100GF	QFP	EV-NQPACK100RB	EV-YQPACK100RB	NP-100GF-TQ	EV-HQPACK100RB	EV-YQSOCKET100RBF
113F1	FBGA	-	-	NP-113F1-DA3	-	-
120GC	TQFP	EV-NQPACK120SE	EV-YQPACK120SE	SWEX-120SE-1	EV-HQPACK120SE	EV-YQSOCKET120SEF
144GJ	TQFP	EV-NQPACK144SD	EV-YQPACK144SD	SWEX-144SD-1	EV-HQPACK144SD	EV-YQSOCKET144SDF



Series	Support Device	Micro-Board
78K0S	μPD78988x	KORE81
	μPD78983x	EV9835
	μPD78948x	M-78F9489
	μPD78947x	M-78F9489
	μPD78945x	M-78F9456
	μPD78944x	M-78F9456
	μPD78941x	KORE9418
	μPD78940x	KORE9418
	μPD78911x	M-78F9116B
	μPD78907x	M-78F9076
78K0	μPD78035x	M-78F0354
	μPD78034x	M-78F0354
	μPD78033x	EV0338
	μPD78032x	EV0338
	μPD78031x	EV0338
	μPD78007x	M-78F0078
	μPD78005x	M-78F0058
	μPD78003x	M-78F0034B
	μPD78002x	M-78F0034B



Complete evaluation kit requires M-Station baseboard and micro-board.

Pin / Package	Flash Adapter
20MC	FA-20MC-5A4-A
30MC	FA-30MC-5A4-A
44GB	FA-44GB-8ES-A
48GA	FA-48GA
52GB	FA-52GB-8ET-A
64CW	FA-64CW
64GB	FA-64GB-8EU-A
64GK	FA-64GK-9ET-A
64GC	FA-64GC-8BS-A
73F1	FA-73F1-CN3-A
80GC	FA-80GC-8BT-A
80GK	FA-80GK-9EU-A
100GC	FA-100GC-8EU-A
100GF	FA-100GF-3BA-A
113F1	FA-113F1-DA3-A
120GC	FA-120GC-9EB
144GJ	FA-144GJ-UEN-A

- Flash programmer**
- Universal for all MCU flash devices from NEC Electronics
 - PC communication
 - via UART
 - via USB
 - Order code: PG-FP4-E



- Gang programmer**
- Gang programmer available; please contact your sales representative.

- PG-1500 programmer**
- For OTP devices
 - PC communication
 - serial
 - parallel
 - Order code: PG-1500

Device	Program Adapter
μPD78P0208	PA-78P0208GF
μPD78P0308	PA-78P0308GC-8EU
μPD78P048	PA-78P048GF
μPD78P078	PA-78P078GF



Software Tools	78K0S	78K0
Software package	SP78K0S	SP78K0
Compiler and assembler	CA78K0S	CA78K0
System simulator	SM78K0S	SM78K0

- SP78K0 and SP78K0S Include:**
- Relocatable assembler
 - C compiler
 - System simulator
 - Integrated debugger
 - Device files

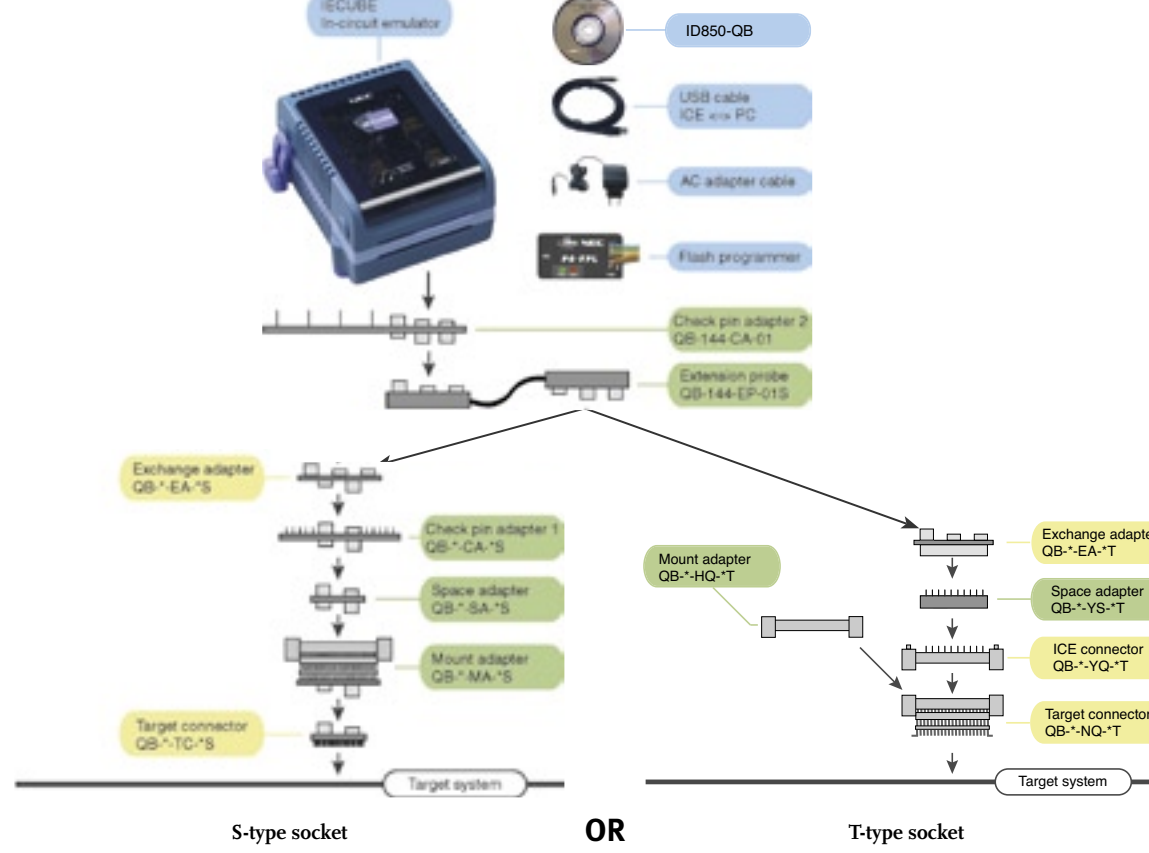


Core	Device				Memory			Interfaces					Timers				Additional Peripherals			Misc. Information		Development Tools																								
	Nickname	Part Number	Packages*	Pins*	Size [Kb]	Type	RAM [Kb]	I/O Lines	CS/UARTs	CAN	I ² C	External Bus	Channels	PWMs	Clock Speed [MHz]	Internal Oscillator(s)	Sub-clock [Hz]	LCD	A/D / D/A Converter	Supply Voltage [V]	Other Features*	Low-Cost Tools	In-Circuit Emulator / Board																							
V850ES	V850ES/SA2	µPD703200(Y)	GC-YEU	100	128	Mask	8	82	4/2	-	(✓)	8/16	8	2 x 16-bit	20	-	-	12 x 10-bit/ 2 x 8-bit	2.2 - 2.7	4-ch DMA RCF, SVF, 4-ch DMA	S	IE-V850ES-G1+ IE-703204-G1-EM1																								
		µPD703201(Y)			16		2 x 16-bit, 4 x 8-bit							17																																
		µPD703201(Y)			Flash		16																																							
	V850ES/SA3	µPD703204(Y)	F1-EA6	121	256	Mask	16	102	5/2	-	(✓)	8/16	8	2 x 16-bit, 4 x 8-bit	17	-	-	16 x 10-bit/ 2 x 8-bit	2.2 - 2.7	RCF, SVF, 4-ch DMA	-	-	IE-V850ES-G1 + IE-703228-G1-EM1																							
																								µPD703204(Y)	Flash	16																				
	V850ES/PM1	µPD703228	GC-8EU	100	128	Mask	10	68	2/2	-	-	-	10	6 x 16-bit	20	-	✓	6 x 16-bit ΔZ /-	2.7 - 3.6	RCF	-	-	IE-V850ES-G1 + IE-703228-G1-EM1																							
	V850ES/KE1	µPD703207(Y)	GB-8EU-A / GK-9EU-A	64	128	Mask	4	51	2/2	-	(✓)	-	10	2 x 16-bit, 4 x 8-bit	20	-	-	8 x 10-bit/-	2.7 - 5.5	CM, RCF, SVF, RTP	N/O	-	-																							
																								µPD703207(Y)	Flash	4																				
	V850ES/KE1+	µPD703302(Y)	GB-8EU-A / GK-9EU-A	64	128	Mask	4	51	2/2	-	(✓)	-	10	2 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	8 x 10-bit/-	2.7 - 5.5	CM, LIN, LVI, POC, SVF, RCF, RTP	N/O	-	-																						
																									µPD703302	Flash	4																			
	V850ES/KF1	µPD703208(Y)	GC-8BT-A / GK-9EU-A	80	128	Mask	4	67	3/2	-	(✓)	8/16	10	2 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/-	2.7 - 5.5	RTP, RCF, SVF	N/O	-	-																						
																									µPD703209(Y)	96	6	67	3/2	-	(✓)	8/16	10	2 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/-	2.7 - 5.5	RTP, RCF, SVF	N/O	-	-		
																									µPD703210(Y)	64																				
																									µPD703210(Y)	Flash	6	67	3/2	-	(✓)	8/16	10	2 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/-	2.7 - 5.5	RTP, RCF, SVF	N/O	-	-		
																									µPD703211(Y)	Mask	12	67	3/2	-	(✓)	8/16	11	2 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/-	2.7 - 5.5	CM, LIN, LVI, POC, RCF, SVF, RTP	N/O	-	-	
																									µPD703211H(Y)	Flash	12																			
	µPD703211H(Y)	Flash	6	67	3/2	-	(✓)	8/16	11	2 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/-	2.7 - 5.5	CM, LIN, LVI, POC, RCF, SVF, RTP	N/O	-	-																									
	V850ES/KG1	µPD703212(Y)	GC-8EA-A / GF-JBT-A	100	128	Mask	4	84	4/2	-	(✓)	8/16	12	4 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RCF, SVF, RTP	N/O/S	-	-																						
																									µPD703213(Y)	96	6	84	4/2	-	(✓)	8/16	12	4 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RCF, SVF, RTP	N/O/S	-	-		
																									µPD703214(Y)	64																				
																									µPD703214(Y)	Flash	6	84	4/2	-	(✓)	8/16	12	4 x 16-bit, 4 x 8-bit	20	-	-	✓	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RCF, SVF, RTP	N/O/S	-	-		
																									µPD703214H(Y)	Mask	16	84	4/2	-	(✓)	8/16	13	5 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-	
																									µPD703215H(Y)	Flash	16																			
	µPD703215H(Y)	Flash	6	84	4/3	-	(✓)	8/16	13	5 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																									
	V850ES/KG1+	µPD703311(Y)	GC-8EA-A / GF-JBT-A	100	256	Mask	4	84	4/3	-	(✓)	8/16	13	5 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																					
																										µPD703311	128	6	84	4/3	-	(✓)	8/16	13	5 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-
																										µPD703313	96																			
																										µPD703313	Flash	16	84	4/3	-	(✓)	8/16	13	5 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	8 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-
µPD703216(Y)																										Mask	4	128	5/3	-	(✓)	8/16/ 22	14	6 x 16-bit, 4 x 8-bit	20	-	-	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, RCF, SVF	N/O	-	-
µPD703217(Y)																										96																				
µPD703217(Y)	Flash	6	128	5/3	-	(✓)	8/16/ 22	14	6 x 16-bit, 4 x 8-bit	20	-	-	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, RCF, SVF	N/O	-	-																									
µPD703217H(Y)	Mask	16	144	5/3	-	(✓)	8/16/ 22	15	7 x 16-bit, 4 x 8-bit	20	-	-	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	CM, LIN, LVI, POC, RCF, SVF, RTP	N/O	-	-																									
µPD703218(Y)	96																																													
µPD703218H(Y)	Flash	16	144	5/3	-	(✓)	8/16/ 22	15	7 x 16-bit, 4 x 8-bit	20	-	-	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	CM, LIN, LVI, POC, RCF, SVF, RTP	N/O	-	-																									
V850ES/KJ1+	µPD703316(Y)	GJ-UEN-A	144	256	Mask	6	128	5/3	-	(✓)	8/16	15	7 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																						
																									µPD703318(Y)	6	128	5/3	-	(✓)	8/16	15	7 x 16-bit, 4 x 8-bit	20	240 kHz	✓	-	-	16 x 10-bit/ 2 x 8-bit	2.7 - 5.5	RTP, CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-		
V850ES/IK1	µPD703327	GC-8BS	64	128	Mask	4	39	1/2	-	-	-	8	9 x 16-bit	32	240 kHz	-	-	8 x 10-bit/-	4.5 - 5.5	CM, POC, LVI, SVF, 3-ph motor control function	-	-	-																							
																								µPD703329	64	6	39	1/2	-	-	-	8	9 x 16-bit	32	240 kHz	-	-	8 x 10-bit/-	4.5 - 5.5	CM, POC, LVI, SVF, 3-ph motor control function	-	-	-			
																								µPD703329	Flash																			6		
V850ES/FE2	µPD703230	GB-8EU	64	128	Mask	4	51	2/2	1	-	-	8	10 x 16-bit	20	200 kHz	✓	-	-	10 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF	N/O	-	-																						
																									µPD703231	64	6	51	2/2	1	-	-	8	10 x 16-bit	20	200 kHz	✓	-	-	10 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF	N/O	-	-	
µPD703232	64	6	51	2/2	1	-	-	8	10 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF	N/O	-	-																										
µPD703233	64																				6	51	2/2	1	-	-	8	10 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF	N/O	-	-							
µPD703233	Flash	12	67	2/2	-	-	-	8	10 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF	N/O	-	-																										
V850ES/FG2	µPD703234	GC-8EA	100	256	Mask	6	84	2/3	-	(✓)	8/16	8	5 x 16-bit	20	200 kHz	✓	-	-	16 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																						
																									µPD703235	12	6	84	2/3	-	(✓)	8/16	8	5 x 16-bit	20	200 kHz	✓	-	-	16 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-	
																									µPD703229(Y)	384																				32
																									µPD703235	Flash	12	84	2/3	-	(✓)	8/16	9	13 x 16-bit	20	200 kHz	✓	-	-	16 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-	
																									µPD703236	384	16																			
µPD703237	Flash	12	128	3/3	2	-	8/16	10	17 x 16-bit	20	200 kHz	✓	-	-	24 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																										
µPD703239	Flash	20	128	3/3 3/4	4	-	8/16	10	17 x 16-bit	20	200 kHz	✓	-	-	24 x 10-bit/-	3.5 - 5.5	CM, LIN, LVI, POC, RCF, SVF, 4-ch DMA	N/O	-	-																										
V850ES/SG2	µPD703260(Y)	GC-8EA / GF-JBT	100	256	Mask	24	84	5/3	1	(✓)	8/16	10	9 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/ 2 x 8-bit	2.85 - 3.6	CM, LIN, LVI, RCF, SVF, 4-ch DMA	N/O/S	-	-																						
																									µPD703261(Y)	384	6	84	5/3	1	(✓)	8/16	10	9 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/ 2 x 8-bit	2.85 - 3.6	CM, LIN, LVI, RCF, SVF, 4-ch DMA	N/O/S	-	-	
																									µPD703262(Y)	512																				40
																									µPD703263(Y)	Mask	48	6	84	5/3	1	(✓)	8/16	10	9 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/ 2 x 8-bit	2.85 - 3.6	CM, LIN, LVI, RCF, SVF, 4-ch DMA	N/O/S	-	-
																									µPD703263(Y)	640	48																			
																									µPD703280(Y)	Mask	24	6	84	5/3	1	(✓)	8/16	10	9 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/ 2 x 8-bit	2.85 - 3.6	CM, LIN, LVI, RCF, SVF, 4-ch DMA	N/O/S	-	-
																									µPD703281(Y)	384	32																			
																									µPD703281(Y)	Flash	32	6	84	5/3	1	(✓)	8/16	10	9 x 16-bit	20	200 kHz	✓	-	-	12 x 10-bit/ 2 x 8-bit	2.85 - 3.6	CM, LIN, LVI, RCF, SVF, 4-ch DMA	N/O/S		

In-Circuit Emulation

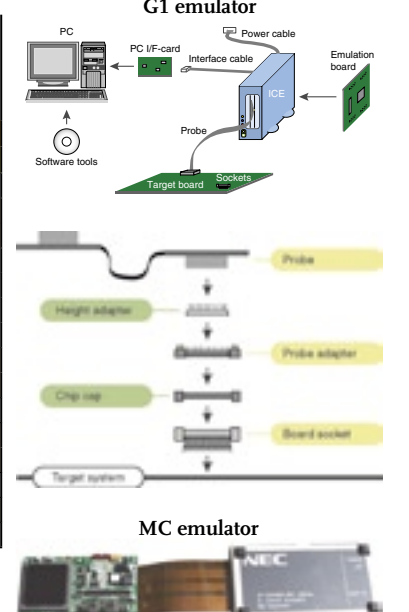
Pin/ Package	IECUBE Socket type	QB-V850EIA4		QB-V850ESFX2		QB-V850ESKXH		QB-V850ESSX2	
		S-type	T-type	S-type	T-type	S-type	S-type	T-type	
144GJ	Exchange adapter			QB-144GJ-EA-03S	QB-144GJ-EA-03T	QB-144GJ-EA-02S	QB-144GJ-EA-01S	QB-144GJ-EA-01T	
	ICE connector				QB-144GJ-YQ-01T			QB-144GJ-YQ-01T	
	Target connector			QB-144GJ-TC-01S	QB-144GJ-NQ-01T	QB-144GJ-TC-01S	QB-144GJ-TC-01S	QB-144GJ-NQ-01T	
	Mount adapter			QB-144GJ-MA-01S	QB-144GJ-HQ-01T	QB-144GJ-MA-01S	QB-144GJ-MA-01S	QB-144GJ-HQ-01T	
	Space adapter			QB-144-SA-01S	QB-144GJ-YS-01T	QB-144-SA-01S	QB-144-SA-01S	QB-144GJ-YS-01T	
	Check pin adapter 1			QB-144-CA-01S		QB-144-CA-01S	QB-144-CA-01S		
	Check pin adapter 2			QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	
100GC	Exchange adapter	QB-100GC-EA-02S	QB-100GC-EA-02T	QB-100GC-EA-01S	QB-100GC-EA-01T	QB-100GC-EA-01S	QB-100GC-EA-01S	QB-100GC-EA-01T	
	ICE connector		QB-100GC-YQ-01T		QB-100GC-YQ-01T			QB-100GC-YQ-01T	
	Target connector	QB-100GC-TC-01S	QB-100GC-NQ-01T	QB-100GC-TC-01S	QB-100GC-NQ-01T	QB-100GC-TC-01S	QB-100GC-TC-01S	QB-100GC-NQ-01T	
	Mount adapter	QB-100GC-MA-01S	QB-100GC-HQ-01T	QB-100GC-MA-01S	QB-100GC-HQ-01T	QB-100GC-MA-01S	QB-100GC-MA-01S	QB-100GC-HQ-01T	
	Space adapter	QB-100-SA-01S	QB-100GC-YS-01T	QB-100-SA-01S	QB-100GC-YS-01T	QB-100-SA-01S	QB-100-SA-01S	QB-100GC-YS-01T	
	Check pin adapter 1	QB-100-CA-01S		QB-100-CA-01S		QB-100-CA-01S	QB-100-CA-01S		
	Check pin adapter 2	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	
100GF	Exchange adapter	QB-100GF-EA-02S	QB-100GF-EA-02T			QB-100GF-EA-01S	QB-100GF-EA-01S	QB-100GF-EA-01T	
	ICE connector		QB-100GF-YQ-01T					QB-100GF-YQ-01T	
	Target connector	QB-100GF-TC-01S	QB-100GF-NQ-01T			QB-100GF-TC-01S	QB-100GF-TC-01S	QB-100GF-NQ-01T	
	Mount adapter	QB-100GF-MA-02S	QB-100GF-HQ-02T			QB-100GF-MA-01S	QB-100GF-MA-01S	QB-100GF-HQ-01T	
	Space adapter	QB-100-SA-01S	QB-100GF-YS-01T			QB-100-SA-01S	QB-100-SA-01S	QB-100GF-YS-01T	
	Check pin adapter 1	QB-100-CA-01S				QB-100-CA-01S	QB-100-CA-01S		
	Check pin adapter 2	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	QB-144-CA-01	
80GC	Exchange adapter	QB-80GC-EA-01S	QB-80GC-EA-03T			QB-80GC-EA-02S			
	ICE connector		QB-80GC-YQ-01T						
	Target connector	QB-80GC-TC-01S	QB-80GC-NQ-01T			QB-80GC-TC-01S			
	Mount adapter	QB-80GC-MA-01S	QB-80GC-HQ-01T			QB-80GC-MA-01S			
	Space adapter	QB-80-SA-01S	QB-80GC-YS-01T			QB-80-SA-01S			
	Check pin adapter 1	QB-80-CA-01S				QB-80-CA-01S			
	Check pin adapter 2	QB-144-CA-01	QB-144-CA-01			QB-144-CA-01			
80GK	Exchange adapter			QB-80GK-EA-02S	QB-80GK-EA-02T	QB-80GK-EA-01S			
	ICE connector				QB-80GK-YQ-01T				
	Target connector			QB-80GK-TC-01S	QB-80GK-NQ-01T	QB-80GK-TC-01S			
	Mount adapter			QB-80GK-MA-01S	QB-80GK-HQ-01T	QB-80GK-MA-01S			
	Space adapter			QB-80-SA-01S	QB-80GK-YS-01T	QB-80-SA-01S			
	Check pin adapter 1			QB-80-CA-01S		QB-80-CA-01S			
	Check pin adapter 2			QB-144-CA-01	QB-144-CA-01	QB-144-CA-01			
64GB	Exchange adapter			QB-64GB-EA-01S	QB-64GB-EA-02T	QB-64-EA-01S			
	ICE connector				QB-64GB-YQ-01T				
	Target connector			QB-64GB-TC-01S	QB-64GB-NQ-01T	QB-64GB-TC-01S			
	Mount adapter			QB-64GB-MA-01S	QB-64GB-HQ-01T	QB-64GB-MA-01S			
	Space adapter			QB-64-SA-01S	QB-64GB-YS-01T	QB-64-SA-01S			
	Check pin adapter 1			QB-64-CA-01S		QB-64-CA-01S			
	Check pin adapter 2			QB-144-CA-01	QB-144-CA-01	QB-144-CA-01			
64GC	Exchange adapter	QB-64GC-EA-01S	QB-64GC-EA-02T						
	ICE connector		QB-64GC-YQ-01T						
	Target connector	QB-64GC-TC-01S	QB-64GC-NQ-01T						
	Mount adapter	QB-64GC-MA-01S	QB-64GC-HQ-01T						
	Space adapter	QB-64-SA-01S	QB-64GC-YS-01T						
	Check pin adapter 1	QB-64-CA-01S							
	Check pin adapter 2	QB-144-CA-01	QB-144-CA-01						
64GK	Exchange adapter					QB-64-EA-01S			
	ICE connector								
	Target connector					QB-64GK-TC-01S			
	Mount adapter					QB-64GK-MA-01S			
	Space adapter					QB-64-SA-01S			
	Check pin adapter 1					QB-64-CA-01S			
	Check pin adapter 2					QB-144-CA-01			

Legend:
■ Mandatory
■ Optional
■ Included in delivery



G1 and MC Accessories

Pin Count	Type	Emulator	Board Socket	Probe Adapter	Chip Cap	Height Adapter	Probe
64GB	TQFP	G1	Mandatory	Mandatory	Optional	Optional	Mandatory
80GK	TQFP	G1	Adapter Set EV-703239G/B64				Attached to emulation board
80GC	LQFP	G1	Sets: V850E/KF1: EV-703210GK, V850E/FF2: EV-703239G/K80				Attached to emulation board
100GC	LQFP	MC	EV-NQPACK100SD	EV-YQPACK100SD	EV-HQPACK100SD	EV-YQSOCKET100SDF	SWEX-100SD-1
100GF	QFP	MC	EV-NQPACK100RB	EV-YQPACK100RB	EV-HQPACK100RB	EV-YQSOCKET100RB-F	SWEX-100SD-1+NEXB-2R100SD/RB
121F1	FPBGA	MC	Sets: V850E/SG2: EV-703288GF100				Attached to emulation board
128GJ	LQFP	MC	CSICE121A1312N02 for V850/SA1	CSPACK121A1312N02			SWEX-100SD-1
144GJ	TQFP	MC	CSICE121A1312N03 for V850E/SA3	LSPACK121A1312N01	CSSOCKET121A132SN01S1		SWEX-120SE-1
157F1	FPBGA	G1	EV-NQPACK128SD220	EV-YQPACK128SD220	EV-HQPACK128SD220	EV-YQSOCKET128SD220F	SWEX128SD
161F1	FPBGA	MC	EV-NQPACK144SD	EV-YQPACK144SD	EV-HQPACK144SD	EV-YQSOCKET144SDF	SWEX-144SD-1
176GM	LQFP	MC	Sets: V850E/KJ1: EV-703217GJ, V850E/FJ2: EV-703239G/J14, V850E/SG2: EV-703288GJ144				Attached to emulation board



N-Wire

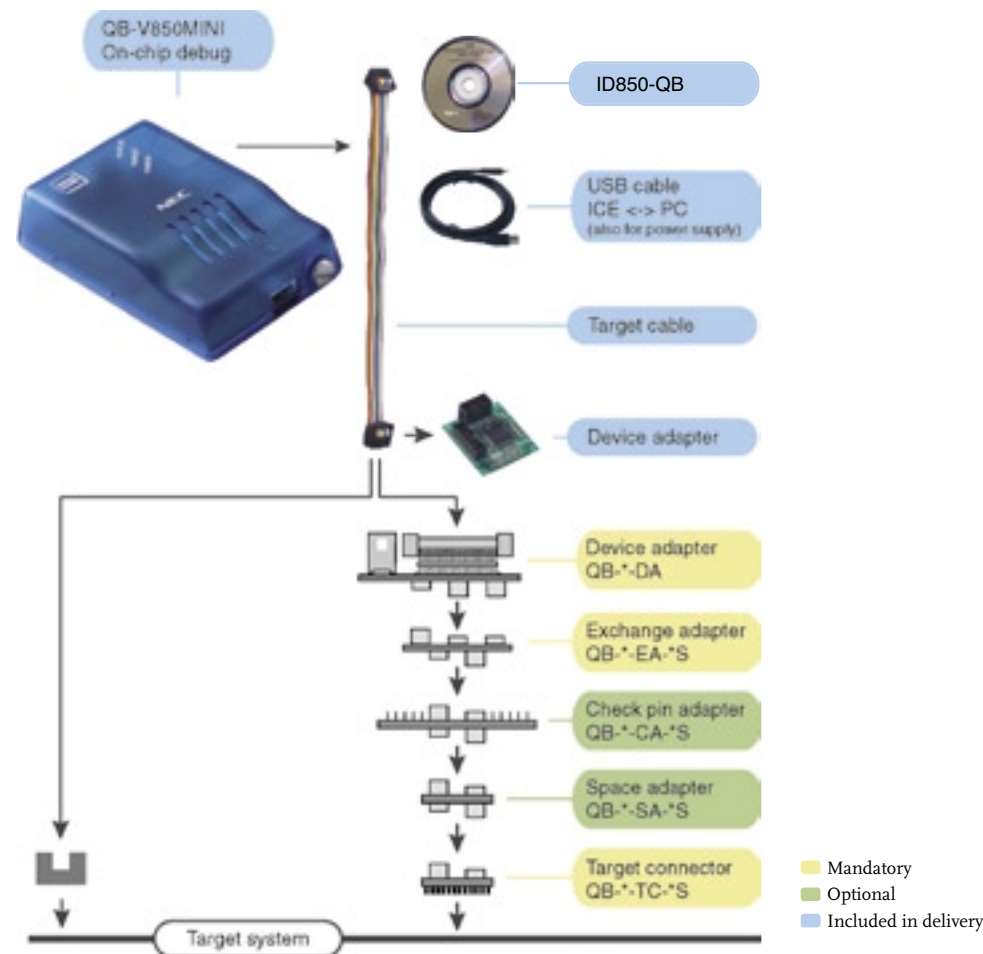
Purpose	N-Wire based debugging system
Supported devices	ALL V850 devices with N-Wire interface
External power supply	Not required
Device interface	N-Wire
Debugger software	ID850-QB
PC interface	PCMCIA
Order code	IE-V850E1-CD-NW



On-Chip Debugging

Support Device	Package	Device Adapter*
V850E/IA4	100GC	
	100GF	
V850E/FJ2	144GJ	
V850E/FG2	100GC	
V850E/FF2	80GK	
V850E/FE2	64GB	
V850E/KJ1(H)	144GJ	
V850E/RG1	100GC	QB-V850ESKX1-DA
	100GF	
V850E/RG1H	100GC	QB-V850ESKX1H-DA
	100GF	
V850E/KF1	80GC	QB-V850ESKX1-DA
	80GK	
V850E/KF1H	80GC	QB-V850ESKX1H-DA
	80GK	
V850E/KE1	64GB	QB-V850ESKX1-DA
V850E/KE1H	64GK	QB-V850ESKX1H-DA
V850E/SJ2	144GJ	
V850E/SG2	100GC	
	100GF	

* Requires adapter and connector; refer to IECUBE socket table for part number.



Starter Kit

Core	Starter Kit
V850	CEB-V850/SA1
	CEB-V850/SB1
V850E	CEB-V850E/MA1
	CEB-V850E/MS1
	CEB-V850E/MA3
V850ES	TK-850/SA2
	TK-850/KG1
	TK-850/SG2



Programming

Pin/Package	Flash Adapter
64GK	FA-64GK-9ET-A
64GB	FA-64GB-8EU-A
64GC	FA-64GC-8BS-A
80GK	FA-80GK-9EU-A
80GC	FA-80GC-8ET-A
100GC	FA-100GC-8EU-A
100GF	FA-100GF-3BA-A
121F1	FA-121F1-EA6-A
144GJ	FA-144GJ-UEN-A
161F1	FA-161F1-EN4-A

- Flash programmer**
- Universal for all MCU flash devices from NEC Electronics
 - PC communication
 - via UART
 - via USB
 - Order code: PG-FP4-E



- Gang programmer**
- Low-price programmer available; please contact your sales representative.

- PG-FPL**
- Low-price programmer for development purposes only
 - Suitable for all single-voltage flash devices
 - Order code: PG-FPL



Software Tools

Software Tools	Part Number
Software Package	78K0S
Compiler and assembler	CA850
System simulator	SM850

- SP850 includes:**
- Assembler
 - C compiler
 - Integrated debugger
 - System simulator
 - Device files



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© Published by
NEC Electronics America, Inc.
Printed in USA, May 2005
Document No. 16886EE5V0PFU1

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