MICROCONTROLLER DEVELOPMENT TOOL

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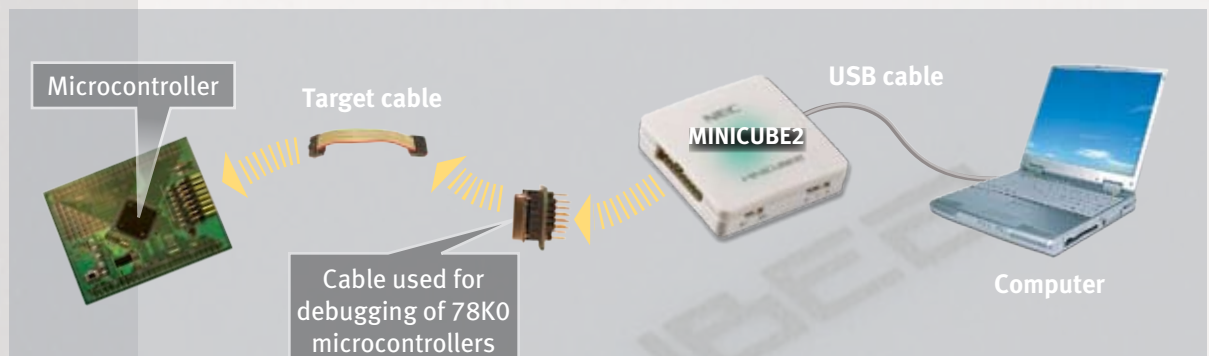
The MINICUBE2 on-chip debugger and flash programmer can be used to debug and program NEC Electronics' existing and future 8-, 16- and 32-bit all-flash microcontrollers throughout development and production.

MINICUBE2 (QB-MINI2)

"All-in-One" Flash Programmer and On-Chip Debugger

Features

› On-chip debugging capability
› Flash memory programming
› USB-powered connection
› Self-testing function
› Pocket size

Microcontroller
Target cable
USB cable
MINICUBE2
Computer
Cable used for debugging of 78K0 microcontrollers

Debugging Functions

Target interface	› V850™ devices: CSI-H/S or UART › 78K0 devices: X1/X2 or OCD1A/OCD1B › 78K0S devices: X1/X2, INTP
Operating frequency	Same as target device
Security function	10-byte ID code authentication (not supported in 78K0S microcontrollers)
Program download	Available
Program execution	› Continuously › Re-execute from cursor point › Re-execute to cursor point › Execute with step
Forced break	Available (with some limitations in V850 devices)
Hardware breakpoints	› V850 devices: two breakpoints, program execution or access (some devices unavailable at present) › 78K0 devices: two breakpoints, program execution and access › 78K0S devices: none
Software breakpoints	2,000

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"All-in-One" Flash Programmer and On-Chip Debugger

TERMINAL MASK	RESET TERMINAL ONLY
Foreground monitor area size	V850 devices: 2 KB ROM, 16-byte RAM (maximum)
	78K0 devices: 257-byte ROM (minimum), 7-byte RAM (minimum)
	78K0S devices: 304-byte ROM, 5-byte RAM (used for stack)

Flash Programming Functions

Target interface	› V850 devices: CSI-H/S or UART › 78K0 devices: UART › 78K0S devices: X1/X2
Clock supply	16, 8, 4 MHz clock that can be supplied to the target system
Power supply	3V or 5V (maximum 100 mA)
Parameter function	Parameter file that is the same as the PG-FP4's
Security setting	Available
Standalone operation	No (host computer needed for operation)

Supported Devices

78K0R devices	78K0R/Kx3
78K0 devices	78K0/Kx2, 78K0/Lx2
78K0S devices	78K0S/Kx1+
V850 devices	V850ES/Hx2™, V850ES/Jx2™, V850ES/Kx2™, V850ES/Ix2™

Visit http://www.necel.com/micro/en/development/asia/minicube2/minicube2.html
to get information about future devices that will be supported.