For use in engineering, manufacturing lines, and various other situations

In-Circuit Programmer

Serial programming of various Flash microcontrollers, Serial and SPI Flash

- Standard buffer memory 1Gbit
- Supports single, dual, and quad modes
- High-speed data transfer using USB2.0
- Master data management with dedicated memory cards
- Development of algorithm software for each device for free
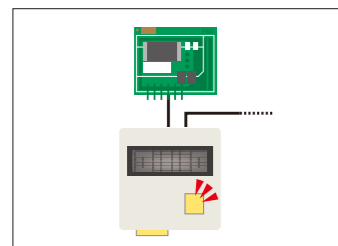- Supports SWD, JTAG, UART, various CLK sync types, and other special serial communication

AF9201

| Programming time examples	SPI Flash Program (including Verify)	64Mbit	Approx. 35 sec
		512Mbit	Approx. 63 sec (with high speed algorithm, quad mode)

* Depends on devices and environments.

Mode selectable according to the operating environment

Standalone mode

Select the stand-alone mode when no PC can be used or fixed data is programmed. This mode is operable with a single key.
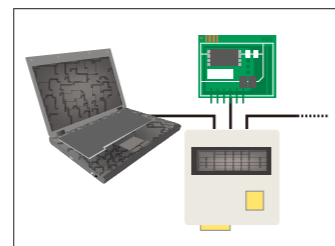
Remote mode

Useful when programming data under development or multiple sets of data continuously. Easily operable with a USB-connected PC.

For manufacturing lines 1

Gang programming by linking multiple programmers

OPTION Mass production control software for easy control

Up to 8 programmers can easily be controlled with a connected PC. Either remote simultaneous programming of all connected units or manual programming of individual units can be selected. Customization for concurrent programming under master/slave method is also available.

USB connection

Target board
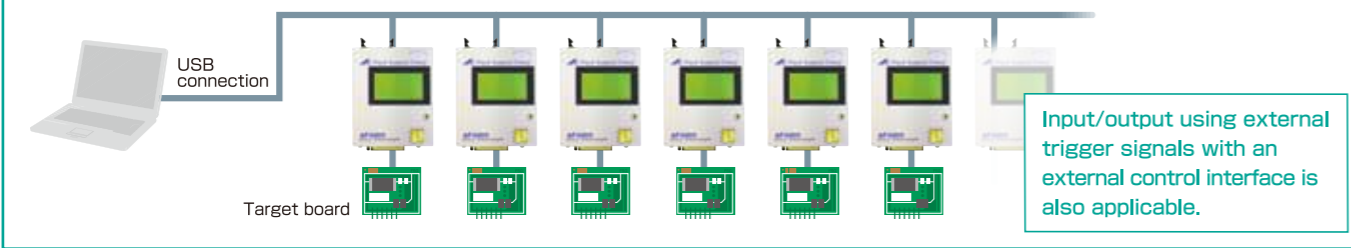
Input/output using external trigger signals with an external control interface is also applicable.

For manufacturing lines 2

Gang programming to multiple memories on a substrate

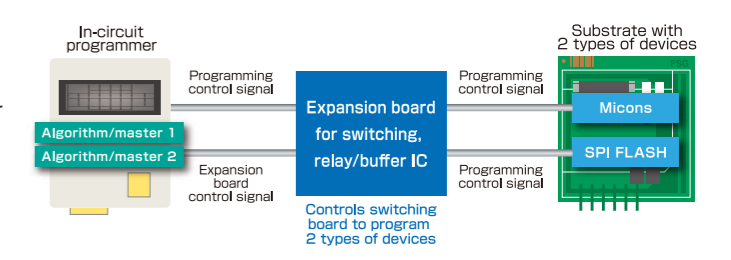**OPTION** Custom tools can be produced

Input of operations or output of results by using trigger signals can be performed with a dedicated interface for external control. Multiple programmers linked to the system improve operability and productivity.

External control switchboard

Substrate with multiple memories

Linked to the fixture tool

Fixture tool
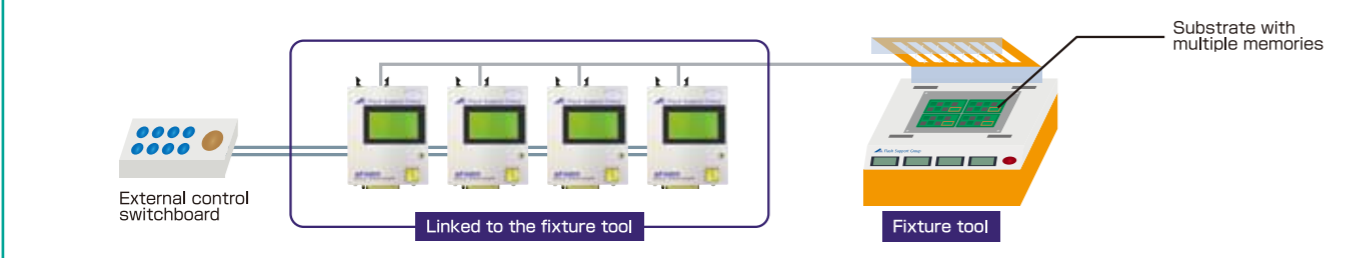
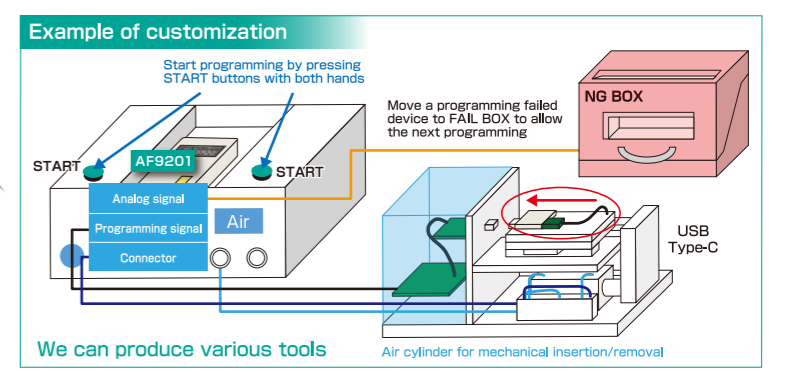## Examples of customization

■ Concurrent programming to different micons/memories

For a substrate having different types of microcontrollers or memories on it, we can develop a system to manage the devices and program different data by using expansion board for switching. This eliminates the need to establish multiple programming systems, and simplifies production.

In-circuit programmer

Algorithm/master 1
Algorithm/master 2

Programming control signal

Expansion board control signal

Expansion board for switching, relay/buffer IC

Controls switching board to program 2 types of devices

Programming control signal

Programming control signal

Substrate with 2 types of devices

Micons

SPI FLASH

■ Programming to cables equipped with chips

Our original adapters for USB Type-C realized systems for programming to E-markers of various manufacturers. Control software enables settings and storage of configuration data. The adapters can also be used with AF9724/25 for mass production.

Example of customization

Start programming by pressing START buttons with both hands

Move a programming failed device to FAIL BOX to allow the next programming

NG BOX

START AF9201 START

Analog signal
Programming signal Air
Connector

USB Type-C

We can produce various tools

Air cylinder for mechanical insertion/removal

■ Other examples

Encryption programming using a security code /programming controlled by a sequencer in a production facility / concurrent programming to substrates with multiple memories/ various test systems

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Paid options

Dedicated memory card (CF card)	TECFM-1G-20 supporting 1 type of device/TECFM-1G-20-4 supporting 4 types of devices
Control software TEM1000 series	Enables various settings and device functions using a USB-connected PC
Power supply booster box	Enables output of a high voltage and control signals according to device specifications
DLL (file, manual)	Useful when you develop original control software

* One unit of the programmer is provided with one dedicated memory card. Both control software and algorithm software can be downloaded for free from our website. http://www.j-fsg.co.jp/en/

■ Product specifications

	AF9201
Supported devices	Flash ROMs, Flash microcontrollers, Serial Flash ROMs of various manufacturers supporting SPI, UART, I²C, JTAG or CLK sync
Buffer memory*	Standard : 1Gbit (dedicated DF card)
Concurrent programming	Only 1 device at once
Device functions	COPY・ERASE・BLANK・PROGRAM・VERIFY・B.P.V・E.P.V・E.P・P.V
Programming power(Vcc)	Vcc : 1.5 to 5.0V (Icc : MAX 250mA)
External interfaces	Target interface (CSI, UART, I2C, JTAG, CLK sync) USB2.0 Memory card interface External control interface
Monitor display	20 characters×8 rows, LCD
Input power voltage	AC100 - 240V DC7V (main unit) * Consult us if it exceeds AC125V.
Frequency range	50 to 60Hz
Power consumption	Up to 3VA
Size * excluding protrusions	W100×D120×H22mm
Weight * excluding accessories	Approx. 210g

* Only one series can be registered to one CF card. Another CF card is required for additional device support.