

e-RT3 Plus

Industrial AI Platform Compatible with Python Machine Learning Libraries e-RT3 Plus F3RP70-2L



The F3RP70-2L Industrial AI Platform is the latest CPU module for the e-RT3 Plus series controllers released in December 2015 with Linux OS installed.

The F3RP70-2L runs on Ubuntu, a commonly used Linux distribution, and supports Python, a general-purpose programming language widely used for AI development and data processing. The F3RP70-2L also supports direct access from Python to existing Yokogawa made I/O modules, and is a new concept controller that is easy to handle for IT engineers accustomed to programming in Python. As a result, the F3RP70-2L is more versatile and enables faster development.

MAJOR FEATURES

■ Powerful support for AI development with Python

The F3RP70-2L supports Python, a programming language widely used in the field of internet of things (IoT) including AI development and data processing and analysis. The open source software library of Python, used widely across the world, greatly accelerates the development of applications. Conventionally, programs written in Python and various I/O drivers must be installed separately during development using single-board computers or PCs. In contrast, the e-RT3 Plus F3RP70-2L, featuring libraries provided on Yokogawa's Partner Portal Site for I/O modules, makes it easy to set up digital and analog I/Os.

Advanced modules such as temperature monitor modules can also be accessed easily, allowing users to concentrate on value-added programming.

■ Environmental resistance and long-term stable supply

The e-RT3 Plus is superior to existing computers and single-board computers in terms of environmental resistance and stable supply. Due to its fan-less design, the e-RT3 Plus can withstand temperatures from 0°C to +55°C, and can operate even in fields where existing single-board computers and consumer PCs cannot.

Yokogawa ensures the maintainability of the e-RT3 Plus by supplying each module stably for a long time.

MAJOR SPECIFICATIONS

● F3RP70-2L

Item	Specifications	
CPU	Cortex-A9 MPCore (Dual 866 MHz)	
Boot-loader	U-boot 2019.04	
Endian	Little endian	
Memory	FLASH ROM	256 MB
	DDR3 SDRAM	1 GB
	SRAM	8 MB
Interface	Ethernet	10BASE-T/100BASE-TX/ 1000BASE-T (2 ch)
	RS-232C	9.6 to 115.2 kbps, dedicated connector
	SD	SDHC memory card
	PCI	For utility module (32-bit)
	JTAG	Dedicated connector

● Binary file offered for booting OS (Ubuntu)

Ubuntu18.04LTS GNU
Linux4.14LTS+PREEMPT_RT

● Offered Python3 package library

Classification	Package
Machine learning	scikit-learn
Numerical processing	numpy
Numerical processing	pandas
Numerical processing	scipy
Graph drawing	matplotlib
Communication	pymodbus
Development environment	jupyter-notebook
Development environment	Ptvsd

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URL: <https://www.yokogawa.com/solutions/products-platforms/control-system/ert3-embedded-controller/>

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