

# FREE Studio Plus

## Release Notes

01/2021



---

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor Eliwell nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

You agree not to reproduce, other than for your own personal, noncommercial use, all or part of this document on any medium whatsoever without permission of Schneider Electric or Eliwell, given in writing. You also agree not to establish any hypertext links to this document or its content.

Either Schneider Electric or Eliwell does not grant any right or license for the personal and noncommercial use of the document or its content, except for a non-exclusive license to consult it on an "as is" basis, at your own risk. All other rights are reserved.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Eliwell software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

© 2020 Eliwell. All Rights Reserved.

---

# Table of Contents



---

Table of Contents .....	3
Safety Information .....	5
Important Information.....	5
About the Book.....	7
At a Glance .....	7
Chapter 1 .....	8
Product Information .....	8
Overview.....	8
Product Identification .....	8
Release History.....	9
System Requirements.....	9
Compatibility.....	9
Installation Instructions .....	9
Chapter 2 .....	10
Hardware/Firmware Information .....	10
New Features.....	10
Mitigated Anomalies .....	11
Chapter 4 .....	12
Software Information .....	12
New Features.....	12
Mitigated Anomalies .....	12
Known Operational Anomalies .....	13
Chapter 5 .....	14
Additional Information.....	14
Other Important External Information.....	14
Release Notes History .....	14
New Features Hardware/Firmware v1.2.1.....	14

---

Mitigated Anomalies Hardware/Firmware v1.2.1 .....	15
New Features Software v1.2.1 .....	15
Mitigated Anomalies Software v1.2.1 .....	16
New Features Hardware/Firmware v1.1 .....	16
Mitigated Anomalies Hardware/Firmware v1.1 .....	16
New Features Software v1.1 .....	17
Mitigated Anomalies Software v1.1 .....	17
Known Operational Anomalies v1.1 .....	17

---

# Safety Information

---



## Important Information

### NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

## **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

## **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

## **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

## **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

---

**PLEASE NOTE**

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric and Elinwell for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

---

# About the Book



---

## At a Glance

### Document Scope

This document contains important information about the hardware/firmware/software delivery of product FREE Studio Plus. Read the complete document before you use the product or products described herein.

### Validity Note

The information in this Release Notes document is applicable only for FREE Studio Plus compatible products. This document has been updated for the release of FREE Studio Plus V1.3.0.

The technical characteristics of the devices described in this document also appear online. To access this information online, go to the Eliwell home page [www.eliwell.com](http://www.eliwell.com).

The characteristics that are presented in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.

# Chapter 1

## Product Information

### Overview

Maintenance release of FREE Studio Plus, with implementation of new features and bug fixing.

### Product Identification

Reference	Description	Version	Note
EVEVD1U000500	EEVD Expansion1 EEV Unipolar	Firmware msk: 772.00	NEW
EVEVD●B000500	EEVD Expansion1 or 2 EEV Bipolar	Firmware msk: 766.00	NEW
EVD75●●	FREE Evolution Logic Controllers 27 I/OS	Firmware msk: 423.27	NOT updated
EVC75●●	FREE Evolution Performance Logic Controllers 27 I/OS	Firmware msk: 477.27	NOT updated
EVP3●●	FREE Panel Flush mounting Controllers	Firmware msk: 489.20	NOT updated
EVK1000	Remote Display HMI	Firmware msk: 476.20	NOT updated
AVD126●●●/ AVC126●●●/ AVD84●●●/ AVC84●●●	FREE Advance Logic Controllers 28 and 42 I/OS	Firmware msk: 596.11	updated
AVD62●●●/ AVC62●●●/ AVD30●●●/ AVC30●●●	FREE Advance Logic Controllers 7 and 18 I/Os	Firmware msk: 668.11	updated
AVP1●●●●	FREE AVP1000 Display Color TouchScreen, Temperature (Humidity) built-in sensor(s) FREE AVP1000 Display Color TouchScreen Flush Mounting	Firmware msk: 659.07	updated
SM●●●●●●	FREE Smart Logic Controllers	Firmware msk: 542.10	updated
SM●●●●●●	FREE Smart Logic Controllers	Firmware msk: 412.21	updated
EVE6000/EVE10200	FREE Advance Expansion 12 and 28 I/Os	Firmware msk: 640.03	NOT updated
XVD	XVD EEV Driver	Firmware msk: 497.13 (obsolete) 589.20	NOT updated



---

## Release History

Version	Release Date	Description
1.3.0	January 2021	FREE Studio Plus 1.3.0
1.2.1	May 2020	FREE Studio Plus 1.2.1
1.2	February 2020	FREE Studio Plus 1.2.0
1.1	July 2019	FREE Studio Plus 1.1.0
1.0	December 2018	FREE Studio Plus 1.0.0

## System Requirements

FREE Studio Plus can be installed on a personal computer having the following characteristics:

### Operative System

- Windows 8 / 8.1 64 Bit
- Windows 10 64 Bit

### Hardware requirements

- Processor Intel Pentium 1.6 GHz processor or greater
- RAM 1 GB; 2 GB preferred
- Hard Disk 500 MB hard disk space for a default installation; allow a further 1 GB hard disk space for installing libraries and dedicated applications
- Peripherals Mouse or compatible pointing device
- Peripherals USB interface
- Web access Web registration requires Internet access

FREE Studio Plus requires Administrator rights to be installed.

For further information, contact your local Eliwell representative.

## Compatibility

All FREE Logic Controllers

## Installation Instructions

FREE Studio Plus software can be downloaded from our website <https://www.eliwell.com>

The product version concerned offers the FREE Studio Plus functions associated with logic controllers.

Follow setup wizard and refer to FREE Studio Plus Operating Guide

---

# Chapter 2

## Hardware/Firmware Information

---

### New Features

NEW EVEVD1U00500/EVEVD●B00500 (FIRMWARE MSK 772.00 AND MSK 766.00)

- New EEVD Expansions to drive 1 Unipolar Electronic Expansion Valve or up to 2 Bipolar Electronic Expansion Valves

NEW FEATURES IN AVD●●●●●/AVC●●●●● (FIRMWARE MSK 596.11 AND MSK 668.11)

- Reconfiguration Master to Slave on RS485-2 from IEC code [PEP0538358R]:
  - if Modbus register 16145 is set different from 0 and MbMRtu\_IsDisByPar function is present before MbMRtu\_OpenChn function in CONNEC.PAR file then Modbus Master is disabled and Modbus Slave is enabled
- Improveto to decrease boot time due CAN device missing [PEP0586748R]:
  - if Modbus register 16144 is set different from 0 and COPM\_SlavePresenceByPar function is present before COPM\_SlaveAssignfunction in CONNEC.PAR file then master controller skip initialization of the CAN expansion indicated in register 16144 as following:
    - register 16144 bit0 : if 0 the 1st CAN slave in CONNEC.PAR sequence is present otherwise it is not present
    - register 16144 bit1 : if 0 the 2nd CAN slave in CONNEC.PAR sequence is present otherwise it is not present
    - ...
    - register 16144 bit11 : if 0 the 11th CAN slave in CONNEC.PAR sequence is present otherwise it is not present
- Extension to negative value for web select objects [PEP0579366R]:
  - <select> range is now from -999 to 9999
- Improve not changing IP address on fly [PEP0585331R+ PEP0535704R]:
  - every time was written a parameter from 15798 to 15817 a timeout of 30 seconds is loaded. This timeout delay reload of ETH settings
- New target Data Block to prevent reading application executable [PEP0538806R]:
  - introduced BOOL MEMO Data Block 5001.0 : if FALSE then \*.COD files can be opened by FTP or virtual FTP otherwise not (\*.COD files can't be opened by FTP and virtual FTP)

NEW FEATURES IN SM●●●●● (FIRMWARE MSK 542.10)

- Modbus protocol available on COM0 (LAN)
- Modbus master available on COM0 (LAN)
- Added parameters CF35, CF36, CF37 to set protocol on COM0
- CF00 change of range to select protocol on COM0
- Added parameter CF39 to select which COM port is enabled for modbus master
- Preset of parameters CF35, CF36, CF37, CF39 with default values to permit to program old devices without updating EEPROM map

---

## NEW FEATURES IN SM●●●●● (FIRMWARE MSK 412.21)

- Modbus protocol available on COM0 (LAN)
- Added parameters CF35, CF36, CF37 to set protocol on COM0
- CF00 change of range to select protocol on COM0
- Preset of parameters CF35, CF36, CF37 with default values to permit to program old devices without updating EEPROM map

## Mitigated Anomalies

### AVD●●●●●/ AVC●●●●● (FIRMWARE MSK 596.11 AND MSK 668.11)

Solved the following issue:

- recognize only first USB key plugged after a boot [PEP0619316R]
- FTP Command Timeout changing from 10 to 30 seconds [PEP0619315R]
- input Web server authentication always active in iOS [PEP0590032R]
- Removing file using FTP a WDT reset occurs [PEP0598326R]
- Green led ON before end download with USB key [PEP0566377R]
- After a getEventInformation BACnet command , controller reply with a message too long [PEP0606924R]
- When a BMS try to change PA6 for BACnet AV the controller should reply with a write-access denied and not change PA15 [PEP0609809R]
- Communication issues with BACnet MS/TP, BACnet verify Tusage\_delay and Tusage\_timeout [PEP0610079R+ PEP0598325R]
- FREE Advance WDT0 reset at power on [PEP0620875R]

### SM●●●●● (FIRMWARE MSK 542.10 AND MSK 412.21)

Solved the following issues:

- Improved serial communication

---

# Chapter 4

## Software Information

---

### New Features

- New command line switched included in batch download (e.g retries)
- Possibility to open multiple resources-tree at the same time
- Menu folder shown in Global shared, EEPROM and Status Variables
- Added possibility to create multiple EEPROM and Status variables, similarly to local variables
- Added possibility to comment out Ladder/FBD networks to remove them from the compilation process.
- Libraries now available with direct link to target (msk 668.11 and msk 569.11 only)
- New features in AFB Application library (1.3.2):
  - New AFBs EEVDCntrl (1.0.3), EEVSHCntrl (1.0.3), SuperHeatCalc (1.0.1), EEVDAlarmMgmt (1.0.1), CheckCOMAlarm (1.0.1) for EEV application control
  - New AFB EEVDSettingsU (1.1.2) for unipolar EEVD management
  - New AFB EEVDSettingsB (1.1.2) for bipolar EEVD management
  - Added new refrigerants from 13 to 26 and custom refrigerant (255) in Press2Temp (1.1.2) and Temp2Press (1.1.2) AFBs

### Mitigated Anomalies

- Solved the following issues:
  - Integrated new Registration Software mechanism to fix *artf214353 vulnerability*
  - Integrated new Registration Software mechanism to fix a cybersecurity issue that could allow attackers to redirect Eliwell Software Update to a malicious Update server.
  - Added find and replace feature for Configuration tab [PEP0534102R]
  - Added Driver Televis generation also for FREE Smart [PEP0549522R]
  - Corrected object property description for FB OverwriteLocaldisplay [PEP0574965R]
  - Bug fix in the closure of FTPGateway [PEP0576119R]
  - XVD : fixed description issue for dE25 [PEP0579832R] and integration of SP and MOP values made available through modbus [PEP0579829R]
  - Bug fix in installation folder [PEP0583837]
  - Bug fix in firmware upgrade via COM on FREE Advance [PEP0583846R]
  - Speed up FREE Advance boot in case of not connected CAN expansions [PEP0586748R]
  - Bug fix in defining string variable of length 1 [PEP0587563R]
  - Bug fix in moving program between tasks [PEP0590033R]
  - Bug fix in window appearance, help on line [PEP0590034R, PEP0595573R]
  - Added dE97 in the catalogue of XVD 3.0 [PEP0590644R]
  - Added pre-compilation directive to exclude part of source code from the compilation process [PEP0595577R]
  - Big fix on BIOS Eumerator removal [PEP0595586R]
  - Added Port\_FTP\_PI in PARAM.BIN file [PEP0595587R]
  - Bug fix on compilation error generation if, with custom modbus editor the number of registers exceed the allowed ones [PEP0507325R]
  - Solved the following issues in AFB Application library (1.3.2):
    - Changed low limit of iFixeVal from 0 to -500 in FloatingWaterTempSet (1.1.0) [PEP0541404R]

- 
- Default values changed for uiLowNoiseMaxFreq, uiFanFreqMin, uiFanFreqMax, uiHysteresis in FanMgmt (1.0.1) [PEP0554840R]
  - Correction of bug: hysteresis implemented for uiArrFreqLimits in CompCntrl\_VS (1.1.1) [PEP0572944R]
  - New inputs for custom refrigerant in Press2Temp for FloatingHighPresCntrl (1.1.0) and EvapPresCntrl (1.1.0) [PEP0607634R]

## Known Operational Anomalies

NONE

---

# Chapter 5

## Additional Information

---

### Other Important External Information

None

### Release Notes History

#### Release Notes FREE Studio Plus – HVAC v1.2.1

Third Release

#### Release Notes FREE Studio Plus – HVAC v1.2

Second Release

#### Release Notes FREE Studio Plus – HVAC v1.1

First Release

### New Features Hardware/Firmware v1.2.1

NEW FEATURES IN AVD●●●●●/ AVC●●●●● (FIRMWARE MSK 596.10 AND MSK 668.10)

- For reasons of Internet security:
  - Modbus TCP / BACnet IP / FTP are disabled by default. Therefore Modbus TCP / BACnet IP / FTP have to be manually enabled.
  - The following Target functions has new added return codes:
    - sysHTTP\_AuthentGuest()
    - sysHTTP\_Authentication()
    - sysFTP\_AuthentGuest()
    - sysFTP\_Authentication()
- Increased number of Modbus TCP Client from 3 to 8
- Increased number of register from 16 to 20 for the following Modbus on event functions [PEP0543596R]:
  - sysMbMRTU\_FC03()
  - sysMbMRTU\_FC01()
  - sysMbMRTU\_FC02()
  - sysMbMRTU\_FC04()
  - sysMbMRTU\_FC15()
  - sysMbMRTU\_FC16()
- Introduced the following Target variables to count the number of Modbus message received on the relate serial port [PEP0551966R]:
  - sysMODBUS\_msg\_received\_USB AT %MD5000.0 :  
UDINT; { DE:"Counter for modbus message received on USB-device" }
  - sysMODBUS\_msg\_received\_RS485-1 AT %MD5000.1 :  
UDINT; { DE:"Counter for modbus message received on RS485-1" }

- sysMODBUS\_msg\_received\_RS485-2 AT %MD5000.2 :  
UDINT; { DE:"Counter for modbus message received on RS485-2" }
  - sysMODBUS\_msg\_received\_RS485-Plugin AT %MD5000.3 :  
UDINT; { DE:"Counter for modbus message received on RS485/232 Plugin" }
- Modified in Read Only the MAC address [PEP0471181R]
- Introduced Target function sysLocalADCs\_Fast() to read scaled Analog to Digital Converters values to be able to handle a faster read of Analog Inputs configured as Digital Inputs [PEP0556153R]
- Introduced Target function sysUART\_Reinit() to modify run-time UARTs settings using sysUART\_getbuf() and sysUART\_putbuf() Target functions [PEP0564799R]
- Introduced Baud Rate at 2400b/s for sysUART Target functions [PEP0571727R]

#### NEW FEATURES IN XVD (FIRMWARE MSK 589.20)

- Implemented Unipolar Valves driving for Parker-Sporlan CEV models

## Mitigated Anomalies Hardware/Firmware v1.2.1

AVD●●●●/AVC●●●● (FIRMWARE MSK 596.10 AND MSK 668.10)

Solved the following issue:

- Additional 0xCC character received in sysUART\_getbuff() Target function [PEP0558035R]
- After several copy of a file from microSD to USB-host controller reset

AVP1●●● (FIRMWARE MSK 659.07)

Solved the following issues:

- sysMbmRTU\_FC03() Target function not include all error cases [PEP0567500R]
- When a page change it is visible a display flickering [PEP0538357R]

XVD (FIRMWARE MSK 589.20)

Solved the following issues:

- when change MOP setpoint (SP3) Driver must be reset to have new setting active. [PEP0543517R]

## New Features Software v1.2.1

- Integrated new SESU 2.3.0.
- Ask to select language during installation
- EULA in Japanese.
- Modbus variables can be exported to a Ecostruxure Operator Machine Expert compatible format
- Target RTC alignment during Download All
- Graphical minor changes on logos and icons
- Live debug function for ST language
- Direct bit mapping with physical location
- Support for direct bit access
- Optimization of watch windows
- Support for dynamic array bound using a symbolic constant

- POU can be saved into separate file to facilitate the integration with version control systems
- Improved RS485 configuration form
- Zoom function in Programming Editor
- Bios Parameters → Add full list in Menu
- Change Filter Icon in Commissioning/Installer
- Cybersecurity best practices adoption (force user to change password at first access and unsecure protocols disabled by default)

## Mitigated Anomalies Software v1.2.1

- Solved the following issues:
  - Loss of program link when "Multiple files project" is selected [PEP0586700R]
  - Loss of the translation of the enumeratives defined within Display which have additional languages with respect to the BaseLanguage [PEP0588770R]
  - Target EVE6000/EVE10200 do not exit from preoperational status [PEP0497183R]
  - Stop download with DMI1003002000 vs Target SM●●●● [PEP0440210R]
- Anomalies on FreeStudioPlus by code
  - PEP0444179R Bug in debug mode: A breakpoint in Debug mode on FB TON gives a WDT reset of controller [LL-1933]
  - PEP0338188R Buttons in raised state are wrongly drawn, exceeding HMI area [PL-397]
  - PEP0354427R Init String on FREE Advance [LL-1626]
  - PEP0457482R ST editor: multilines IEC comments that contains a ) is not marked as comment [LL-1975]
  - PEP0546766R FC - Improvement security vulnerabilities in HTML5 online help
  - PEP0549744R MCI- ESME - Help for application object launch an exception [EL-825]
  - PEP0546035R MCI - ESME- Column value of parameter not valorized for SM●●●●
  - PEP0567501R Error loading LON Custom profile [EL-846].
  - [LL-2277] Missing typedef variables after importing from library (typedef not imported)
  - [EL-829] Batch download without /REBUILDPLC does not work anymore
  - [LL-2197] When dragging a new block, it cannot be placed at the right place because the code scrolls too fast
  - PEP0567498R Auto creation EDS file [EL-843]

## New Features Hardware/Firmware v1.1

NEW FEATURES IN AVD●●●●/ AVC●●●● (FIRMWARE MSK 596.09 AND MSK 668.09)

- Introduced target functions sysHTTP\_AuthentOnOff() and sysFTP\_AuthentOnOff() to disable/enable authentication (enabled by default)
- Introduced two new SNVTs for LONWOKS protocol:
  - SNVT\_setting
  - SNVT\_state
- Introduced target function sysLcd\_RotateAt180( mode ) to rotate display visualization. Keys work accordingly to mode value: TRUE=rotation at 180°, FALSE=default visualization

## Mitigated Anomalies Hardware/Firmware v1.1

AVD●●●●/ AVC●●●● (FIRMWARE MSK 596.09 AND MSK 668.09)

- Solved the following issues:
- microSD mount at startup that lock the controller. Fixed max timeout of 30 seconds to mount a volume



- 
- AVD126●●●/ AVD84●●● models continuously reset at power-on if powered only via USB-device.
  - Not able to manage multiple object subscribes Bacnet MSTP

#### AVP1●●● (FIRMWARE MSK 659.06)

- Solved the following issues:
  - Not possible to enter edit mode with enums
  - Bad navigation between different enumeratives
  - Editing of INT with format XXX.Y doesn't work if you try to enter values between 0.1 and 0.9
  - Not possible to send broadcast messages
  - String writing by commissioning using USB port is not correct.

## New Features Software v1.1

Localization on dialog forms is now possible

## Mitigated Anomalies Software v1.1

- Solved the following issues:
  - Function Block QRCodeDisplay launch compiler critical error if used with AVP1●●●.
  - Value for RS-485 set in configuration aren't written like default
  - Issue with "Modified" state after a "Refresh current target" command
  - "Build all" disabled while the HMI project is loading
  - File PARAM.BIN is wrong, string termination is missing
  - Switching perspective issue
  - Add the possibility to download single PLC, HMI and HMI Remote from ESME Installer as with SoMachine
  - EWC.exe: error in the compilation of the project with Chinese characters in the name
  - File list (.ini) encoding issue
  - Modbus Custom editor: all protocol are not added if driver is modified.
  - In Modbus custom editor is not possible to insert modbus register of different type (input, Holding...) with same modbus address
  - Code generation error: SFC control variables not found.
  - Import of FREE Evolution/Panel Blind Project with HMI Remote doesn't function.
  - Black tabs in Auto Hide Mode. It's difficult read the name of the window
  - A program error for a particular configuration of the group policy
  - In simulation mode a breakpoint is reached after the CASE OF and after the ELSE.
  - Error in print on Ladder project
  - Breakpoints used inside inner loop

## Known Operational Anomalies v1.1

Minor vulnerability fixed on dll hijacking (internal reference artf270287)