

SCADAPack x70 Release Notes

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SCADAPack 57x Upgrade Requirements

It is highly recommended that updates be installed on your SCADAPack 57x devices if using

- SCADAPack 57x firmware version 9.1.2 and earlier, or
- SCADAPack 57x bootloader firmware version 1.10.

First, install SCADAPack 57x firmware version 9.2.1 or newer, then install SCADAPack 57x bootloader firmware version 1.30 or newer.

WARNING

UNINTENDED EQUIPMENT OPERATION

Upgrade SCADAPack 57x firmware version 9.1.2 and earlier versions to firmware version 9.2.1 or newer.

Failure to follow these instructions can result in death or serious injury.

WARNING

UNINTENDED EQUIPMENT OPERATION

Upgrade SCADAPack 57x bootloader firmware version 1.10 to bootloader firmware version 1.30 or newer. Cold boot the SCADAPack 57x device following the upgrade.

Failure to follow these instructions can result in death or serious injury.

SCADAPack 57x Bootloader firmware version 1.30 corrects a start-up initialization issue and digital output initialization issue.

SCADAPack 57x firmware version 9.2.1 corrects an issue for users of firmware version 9.1.2 and earlier. Logic variables T_SPx70_INT and T_SPx70_UINT may indicate incorrect values following an online logic modification and a SCADAPack 57x device restart.

The firmware in this release includes these corrections.

Installation Requirements, Instructions, and Troubleshooting

Refer to ***Software Installation.pdf*** located both at the root of the folder that contains the installation files, and in the documentation set that is installed with RemoteConnect.

SCADAPack x70 R2.5.1 Release Notes

SCADAPack x70 R2.5.1 was first available in January 2021.

Application and Firmware Versions

SCADAPack x70 RemoteConnect application version is 3.8.1

- SCADAPack DNP3 Communication DTM version is 3.8
- SCADAPack x70 Device DTM version is 3.8
- SCADAPack x70 Logic Editor version is 14.0 - 200313
- Schneider Electric Generic HART DTM version is 5.1.1189.11
- HART STB Multiplexer Communication DTM version is 1.0.8.0
- SCADAPack x70 English Documentation version is 3.8.1
- SCADAPack x70 French Documentation version is 1.2.3

SCADAPack x70 Security Administrator version is 1.6.2

SCADAPack 47x firmware version is 9.5.1

SCADAPack 47x bootloader version is 1.00

SCADAPack 57x firmware version is 9.5.1

SCADAPack 57x bootloader version is 1.40

6601 I/O module firmware version is 2.2.27

6601 I/O module bootloader version is 2.2.27

6602 I/O module firmware version is 2.0.123

6602 I/O module bootloader version is 2.0.123

6607 I/O module firmware version is 2.2.4

6607 I/O module bootloader version is 2.2.4

Software and Firmware Version Compatibility

RemoteConnect version 3.8.1 is intended for use with SCADAPack x70 firmware version 9.5.1.

NOTICE

INCONSISTENT DATA, UNPREDICTABLE RESULTS

RemoteConnect versions R2.0 and later are not compatible with projects created with RemoteConnect versions R1.6 and earlier.

See the release notes for RemoteConnect version 2.0 in the documentation for more instructions.

Failure to follow these instructions can result in equipment damage.

SCADAPack 57x Hardware and Firmware Version Compatibility

SCADAPack 570, 574 and 575 modules with hardware version V4.00 and later require minimum bootloader and operating system firmware versions as described in the table below.

If you attempt to install bootloader firmware 1.30 or earlier on a SCADAPack 57x device with hardware version 4.00 or later, the firmware installation will be unsuccessful. System status code 1060 will be generated. Avoid using bootloader firmware 1.30 or earlier with SCADAPack 57x hardware versions 4.00 or later.

If you attempt to install operating system firmware 9.4.3 or earlier on a SCADAPack 57x device with hardware version 4.00 or later, the firmware installation will be unsuccessful. System status code 1061 will be generated. Avoid using operating system firmware version 9.4.3 or earlier with SCADAPack 57x hardware versions 4.00 or later.

See table below for hardware and firmware compatibility

	SP57x Hardware Version	SP57x Bootloader Firmware Version	SP57x Operating System Firmware Version	Comment
✓	3.02 or earlier	any	any	Use bootloader version 1.30 or later. See SCADAPack 57x Upgrade Requirements earlier in this document.
✓	4.00 or later	1.40 or later	9.5.1 or later	
✗	4.00 or later	1.30 or earlier are not supported	9.4.3 or earlier are not supported	Use Bootloader firmware version 1.40 or later. Use Operating system firmware version 9.5.1 or later.

You can check the SCADAPack 57x hardware version, bootloader firmware version and operating system firmware version by using RemoteConnect online **Additional Functions > Get Device Information** and opening the retrieved text file; or by using the SCADAPack command line VER command.

Supported Devices

SCADAPack 470
SCADAPack 474

SCADAPack 570
SCADAPack 574
SCADAPack 575

Supported Operating systems

Windows 8.1 Professional 32-bit and 64-bit
Windows 10 Professional 32-bit and 64-bit
Windows Server 2016

SCADAPack RemoteConnect, Unity Pro, and Control Expert Compatibility

RemoteConnect installations can coexist with specific Unity Pro or Control Expert installations. If RemoteConnect is installed on a computer that had Unity Pro or Control Expert installed previously, the RemoteConnect installation automatically confirms that components in the SCADAPack x70 Logic Editor and Unity Pro or Control Expert are correctly referenced. If Unity Pro or Control Expert is installed or upgraded on a computer that already had RemoteConnect installed, then a **repair** process is likely required on RemoteConnect to confirm that components are correctly referenced. Use **Run as administrator** to run the repair process.

The Unity Pro or Control Expert versions that are verified as suitable for coexisting installation with RemoteConnect are:

- Unity Pro version 13.0*
- Unity Pro version 13.1*
- EcoStruxure Control Expert version 14.0
- EcoStruxure Control Expert version 14.1
- EcoStruxure Control Expert version 15.0

* RemoteConnect has a known issue with Unity Pro version 13.0 and 13.1 on Windows French edition. See WI: 50233 in the *Known Issues* section below.

New and Improved Features

- WI 53895 SCADAPack 47x and 57x support 5505 RTD analog-input modules.
- WI 60800 SCADAPack 47x and 57x support 5410 counter-input modules.
- WI 61414 SCADAPack 47x supports the 6602 HART module with a limited feature set.
- WI 60799 SCADAPack 57x and 47x support IEC 60870-5-104 protocol.
- WI 62006 The Clear Counters command was removed from RemoteConnect. This function only worked with objects mapped to DNP3 points. This function is superseded by the ability to use the object browser, including defining saved browser presets, allowing the user to define a browser table with presets of 0 as a short-cut method for defining nominated counters to clear.

- WI 61162 EFB Toolkit v14 is supported by the logic editor. This feature allows adding custom C function blocks to the logic library, for use by SCADAPack x70 applications.
- WI 47679 Added the NETINFO command to provide additional diagnostics of IP connections.
- WI 61353 Added Geo SCADA Import option for the SCADAPack 47x platform.
- WI 61368 Added XEF and ZEF file formats to the "Import Logic Project" option
- WI 61308 Added support for SCADAPack 57x version 4 hardware in Boot loader and firmware.
- WI 59095 Factory boot aborts after 60 seconds to guard against a boot mode switch stuck in the closed position. A normal boot is performed if the factory boot aborts.
- WI 54171 Improved the Logic Status indication when logic is not run due to an empty object database.
- WI 55732 Added GETDNPROUTE command to show DNP3 routes.
- WI 61681 Improved 6602 I/O module HART update time to 10 seconds maximum.
- WI 62075 Clarified that Excel import and export support only the XLS format.
- WI 51392 Improved deletion of objects that are mapped to user DDT variable instances. Previously If the removed instance variable was the only remaining instance of the DDT type, then the DDT type definition was also deleted.
- WI 48685 Added a software watchdog for logic tasks to improve behaviour if a logic program contains an infinite loop or executes for an unexpected long time.
- WI 62164 Disabled the Under Range Limit, Over Range Limit and Zero Threshold Limit by default for new objects.
- WI 62167 Improved the usability of the Object Table by removing the source type column, replacing the data type column with an icon, changing the order of the last 4 columns to IEC-M, IEC-C, Modbus, DNP3, and moving some table controls.
- WI 62154 Side by side operation with Control Expert 15 is supported.
- WI 62518 Updated the DNP3 device profile documentation.
- WI 62081 Improved documentation of IP routing.
- WI 61333 Updated the technical support information for Australia, New Zealand and Canada
- WI 61600 Integrated documentation of battery replacement that was formerly supplied as a separate document.
- WI 60738 Clarified logic documentation for %SW2, %SW3.
- WI 61010 Clarified that file system is not case sensitive in documentation.
- WI 61321 Added Porting Guide for SCADAPack E to SCADAPack RemoteConnect to the documentation. .

- WI 49663 Improved DNP3 protocol descriptions in SCADA Protocols Technical Reference
- WI 55311 Changed name of ClearSCADA to EcoStruxure Geo SCADA Expert to match the new name for the product.
- WI 60668 Improved the further action documentation of system status code 1038.
- WI 61009 Updated the description of the Discard New Events if Buffer Full parameter.
- WI 61916 Improved solution to security vulnerability CVE-2020-7528.
- WI 61917 Added additional layers of defence to the solution for RemoteConnect security vulnerability CVE-2020-7529. There is no change in functionality.

Fixed Issues

- WI 47414 6602 I/O module analog outputs periodically reported field instrument not yet scanned. This is corrected.
- WI 47417 The 6602 analog output module did not limit the output for out of range values. This is corrected. Output values greater than the maximum are limited to 20 mA. Output values less than the minimum are limited to 0 mA.
- WI 47824 The documentation of the Delete command function block didn't state that the function block may not remove all files. The documentation now states ""Deleting hundreds of files may require multiple executions of the del command, as the del command may time out before all the files are removed. Check the directory contents following the completion of the command. Execute the command again if some files were not deleted.""
- WI 48517 F_DeviceReady function block only worked with a forward slash in paths but F_DirInfo EFB works with both forward and back slash. Both function blocks now work with forward and back slashes.
- WI 48561 USB mass storage device (drive) size was always detected as 3.2 GB. This is corrected.
- WI 52795 HART devices were not correctly discovered by 6602 modules when they were unconnected at power up and connected later. This is corrected.
- WI 55707 SCADAPack 47x folder date was incorrect (01/01/1970) after factory boot. This is corrected.
- WI 56401 SCADAPack 47x VER Command did not display 5304 and 5405 module versions. This is corrected.
- WI 57284 The whoami command displayed incorrect information for Serial 5 on SCADAPack 47x. This is corrected.

- WI 58504 F_COPY function block returned status code 0 (success) when trying to overwrite an open file. This is corrected and the function block now returns code -1008, 'Destination file name in use'.
- WI 58831 The F_DeTree function block incorrectly returned a status code of -1 when attempting to delete a non-existent directory. It now returns status code -1015 (File or directory does not exist).
- WI 59184 Diagnostics reported "Duplicate requests removed from queue. Request cancelled for IED 53 (Duplicate Request)" when polling. This is the intended operation. The unnecessary message was removed.
- WI 59276 RemoteConnect closed unexpectedly when adding an Altivar ATV6xx drive DTM object. This is corrected.
- WI 59364 10 Mbps Ethernet connection did not work on SCADAPack 47x devices. This is corrected.
- WI 59379 File diagnostics maximum file size was limited to 12.5 MB on SCADAPack 47x. This is corrected.
- WI 59598 The route print command did not include "Route Priority: HOST NETWORK GATEWAY DEFAULT-GW" output. This is corrected.
- WI 60058 The NAME output of the F_FindFile Function block was truncated. This is corrected. The full name is now returned.
- WI 60281 Counter inputs from a 6601 I/O module could report incorrect counts if the 6601 module was disconnected and reconnected from the I/O bus with power on. This is corrected.
- WI 60284 The documentation of the F_FindFile function block was unclear. This is corrected.
- WI 60924 The FREERUN function block output was affected by Real Time Clock (RTC) changes on SCADAPack 57x. This is corrected.
- WI 61081 The logic task was terminated after setting a break point in the logic application. This is corrected.
- WI 61159 Disabling the telnet service could cause a device restart. This is corrected.
- WI 61255 RemoteConnect was not able to open an RCZ file on systems where FDT 2.1 libraries were installed by another application. This is corrected.
- WI 61283 The documentation for system status code 1410 did not describe all the conditions that set the flag. The documentation now states "This condition is checked when the device is started and when the clock is set".
- WI 61377 Writes to UINT arrays longer than 512 elements mapped to RemoteConnect objects from a logic program updated the wrong element in the object. This is corrected.

- WI 61378 Unexpected DNP3 unsolicited messages were sent if the Triggered Event Notification Delay was larger than the Minimum Unsolicited TX Event Delay. The configured Class min events buffered event value was disregarded and the unsolicited events were sent to the configured host as per the Minimum Unsolicited Event Tx Delay setting. This is corrected.
- WI 61407 Logic Editor R2.4.2 could not open a project created in R2.4.1 (field trial release). This is corrected.
- WI 61522 SCADAPack 47x could lose communication with 6601 and 5000 series I/O modules following a 6601 firmware or bootloader update. The SCADAPack 47x would require a restart to establish communication. This is corrected.
- WI 61542 Locked objects could not be connected to a Modbus Scanner in RemoteConnect. This is corrected.
- WI 61574 Update & Build Logic could be executed before a project was saved, resulting in inconsistent project files. The Update & Build logic button is now disabled until the project has been saved.
- WI 61669 The F_FindFile function block didn't use the /user directory when the input "DIR" was not specified. This is corrected.
- WI 61702 French language selection did not work with a side-by-side installation of Control Expert 14.1. This is corrected.
- WI 61728 An internet connection was required during installation of RemoteConnect 2.4.2 to obtain an intermediate certificate. The internet connection will still be used if present with RemoteConnect R2.5.1. If a connection is not available, the certificate can be installed manually. Instructions are provided in the Software Installation manual.
- WI 61750 CPU temperature in degrees F was rounded down to the nearest degree. This is corrected. The CPU temperature is returned as a floating-point value rounded to the nearest tenth of a degree.
- WI 61782 The HART_6602Control function block only worked when the MODULE input was set to 0. This is corrected. Set the MODULE input to the address of the 6602 module.
- WI 61783 The Device Listen Port setting of the Modbus scanner changed back to 502 (the default) when reading from the SCADAPack device. The setting now retains the configured value.
- WI 61799 The SCADAPack 47x did not report system status code 1410 when the battery was low. This is corrected.
- WI 61810 Documentation for OBJ_ReadField and OBJ_WriteField function blocks listed an incorrect DATATYPE for ATTRIB_EventDevUnsol. This is corrected.
- WI 61837 Documentation incorrectly stated that DNP3 events were preserved across firmware upgrades. This is corrected. There is no change to product functionality.

- WI 62052 Switching the Host interface could send a DNP3 Request Link Status messages (used for the DNP/TCP keep-alive) out the wrong port. This is corrected.
- WI 62320 Documentation incorrectly described online modification of logic and objects in the Modifying a Logic Application Online topic. This is corrected.
- WI 62328 DNP3 Objects with Status Flags documentation incorrectly stated bit [4] - Local Forced Data is "Not Used". The documentation now describes the operation of this bit.
- WI 62365 When a Structure element was selected, the function Unlock Variable > Logic variable Name list box was blank after pressing the Unlock button. This is corrected.
- WI 62710 The wiring example for the 6607 I/O module digital outputs showed diodes in the wrong orientation. The example now shows the correct diode orientation and clarifies the wiring connections.

Known Issues

- Installation Control Expert and Unity Pro installation compatibility

The SCADAPack RemoteConnect Configuration Software installation process and Control Expert / Unity Pro software installation process can interfere with one another. It is recommended that when installing new versions of Control Expert / Unity Pro software that the repair installation option be run for SCADAPack RemoteConnect. Coexisting installations of RemoteConnect and Unity Pro are supported for Unity Pro versions 13.0, 13.1, and EcoStruxure Control Expert version 14.0, 14.1 and 15.0.

Workaround: Follow the relevant Post-Installation Steps for the Unity Pro or Control Expert version in the Software installation Manual.
- WI: 47841 When reconfiguring a SCADAPack RTU from one large configuration to another large configuration, the configuration rebuild might not succeed and would report configuration log messages such as “# 565: Unable to create object due to insufficient configuration memory space”.

Workaround: Cold boot the RTU before applying the new configuration. Alternatively, apply a configuration with a very small number of objects and restart the RTU. The new large configuration should then be accepted.
- WI: 50233 Installing Unity Pro v13.0 or v13.1 on Windows (French edition) followed by RemoteConnect installs shortcuts to All programs > Schneider Electric > SoCollaborative > Unity Pro for both Unity Pro and SCADAPack Logic applications.

Workaround: Identify, from the shortcut path properties, which shortcuts relate to SCADAPack Logic.
- WI: 54918 The SD card on the SCADAPack 47x is not supported.

Workaround: Use a USB mass storage device (USB drive) instead.

- WI: 59358 A USB C connection from a PC does not work with the SCADAPack 47x USB C port.
Workaround: Use a USB A port on the PC to connect to the USB C port on the SCADAPack 47x.
- WI: 59920 Logic Editor Memory Consumption dialog shows incorrect values and calculates the % of memory used using incorrect values. This is displayed with the Mode > Memory Consumption command. When memory usage is 87% or higher on the dialog, the SCADAPack RTU will be unable to load the application. When writing to the RTU the message “PLC program internal memory full” is displayed. The Greatest value below the graph is correct. The value above the graph should read 3072 Kbytes.
Workaround:
 Multiply the % usage values in the graph on the left by 1.16 to get the actual values.
 Ignore the % memory available value in the graph on the left.
 Subtract 525000 from the Total (memory available) value below the graph on the left to get the actual value.
- WI 62703 The telnet command prompt will not completely display long output in the following cases and others.
- NETINFO output when the table is greater than 46 entries.
 - TYPE output when displaying a .RTU file or other long files
 - Other commands with long output.
- Workarounds:**
 Use a serial port command prompt when connected locally.
 Long NETINFO output can be obtained by executing the GETINFO command, transferring the file created to a PC, and opening it on the PC.
 Long files can be examined by transferring the file created to a PC and opening it on the PC.

Post Installation Troubleshooting

- RemoteConnect and Logic Editor Start Up SCADAPack RemoteConnect Configuration Software start-up may be blocked from reopening if previous instances of RemoteConnect or the Logic Editor were not closed cleanly.
Workaround: Launch the Task Manager and shut down any RemoteConnect processes, then restart RemoteConnect.
- Logic Editor Logic editor or Types Library update tool library modification
Symptoms

SCADAPack Logic Editor or Types Library Update tool reports the library is opened by another application when attempting to modify the logic library

Steps to resolve

Check that no instances of Unity Pro, Control Expert, and RemoteConnect/SCADAPack x70 Logic Editor are running. Launch the Task Manager and shut down any Unity Pro, Control Expert, and RemoteConnect/SCADAPack x70 Logic Editor processes. If the symptoms persist, it is likely that Windows folder permissions are incorrect.

Check the following:

1. With administrator privilege right-click on the following folder:
C:\ProgramData\Schneider Electric
2. Select **Properties**.
3. Select the **Security** tab.
4. Click **Edit**.
5. Click on the Users entry in the Group or user names section.
6. Scroll down the Permissions for Users area until you see a row called "Write".
7. Check the box in the "Allow" column for the "Write" row.
8. Click **OK**.
The security settings will update on the sub-folders.
9. Click **OK** to exit the Properties dialog.

SCADAPack x70 and 6601 Firmware Version Compatibility

Customer Guidance for SCADAPack 47x

SCADAPack 47x supports 6601 input output module firmware version 2.0.20 and later.

Customer Guidance for SCADAPack 57x

6601 upgrade recommendations: Upgrade 6601 input output modules (both external and built into SP575) to firmware version 2.0.20 or later and bootloader version 1.80.10 or later. For 6601 input output modules shipped with firmware 1.77.131 or earlier, and where extended over-range capabilities (up to 22 mA) are required, the module may be returned to a Schneider Electric facility for recalibration.

6601 minimum firmware version: 6601 input output modules shipped from the factory with 1.80.6 or 1.80.10 firmware should not be downgraded to versions earlier than 1.80.6.

NOTICE

LOSS OF SENSOR ACCURACY

If you use firmware versions that are incompatible with extended over-range calibration on 6601 analog inputs, the analog inputs may report values 10% lower than the actual value.

Use only firmware versions that are compatible with extended over-range calibration.

Do not use 6601 firmware earlier than 1.80.6 with extended over-range calibration. They are not compatible.

For information on SCADAPack 57x firmware versions 9.03 or earlier, refer to the RemoteConnect R2.0 release notes in the documentation.

Failure to follow these instructions can result in equipment damage.

A new calibration format for 6601 analog inputs has been added to support extended over-range capabilities. Interoperability of various versions of firmware and calibration is described below.

	SP57x Firmware	6601 Firmware	6601 Calibration	6601 AI Value	Over-range	Comment
✓	9.0.4 or later	1.77. 131 or earlier	0...20 mA	Reported normally	Always active at 20.05 mA	
✓	9.0.4 or later	1.80.06 or later	0...20 mA	Reported normally	Always active at 20.05 mA	
✓	9.0.4 or later	1.80.06 or later	0...22 mA	Reported normally	Always active at 22.00 mA	Recommended choice for new installations
✗	9.0.4 or later	1.77. 131 or earlier	0...22 mA	AI report. 10% lower values	Always active at 20.05 mA	NOT RECOMMENDED. Should only occur when a 6601 is mistakenly downgraded from 1.80.6 to an earlier version.