

SATEL

Mission-Critical Connectivity

SATEL NETCO DEVICE CE
Quick User Guide
Version 1.4.0

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ABOUT

SATEL NETCO DEVICE is a software tool for configuring and reprogramming a SATEL device. The configuration parameters can be read and written from/to the locally connected, powered device. The device configuration can be also created/saved/explored from/to a file without device connection.

The most common use case for which the SATEL NETCO DEVICE is optimized for is editing existing parameters in a SATEL radio product using local connection, such as serial interface. Current variant for Win10/11 64-bit OS.

To increase the trust and improve the security SATEL has adopted Entrust Extended Validation Code Signing CA with SATEL NETCO DEVICE software.

Note! Please see a Customer Release Note (CRN) for known feature limitations.

1. SOFTWARE PACKAGING

SATEL NETCO DEVICE CE release packaging depends on platform variant. At the time being only Windows 10/Windows 11 variant is supported.

1.1 SATEL NETCO DEVICE CE for Windows

1.1.1 Windows variant limitations and requirements

Windows variant platform requirements are as follows, all Windows 10/11 64-bit.

NOTE: OS -versions that are not supported in any form by the manufacturer or are older than 6 years at the time of observation are not officially supported.

Experience	CPU	Win10 / Win11 version	RAM	Storage
Performance	Intel Core i7+ 24H2+ / 24H2		16 GB	512GB+ <u>SSD</u>
Medium	Intel Core i7+ 2004+ / 24H2		16 GB	512GB+ SSD
Minimum	Intel Core i5+ 1909+ / 22H2		8 GB	256GB+ SSD

Additionally the software need to be able to open the following ports for TCP services, called 'backend services' in NETCO Device for Windows:

- IPv4 port 9100 TCP : API endpoint service, also referred to as "Gateway" (address)
- IPv4 port 9102 TCP : Device management logic service
- IPv4 port 9104 TCP : Device/Field communication service
- IPv4 port 9105 TCP : Database service

The above ports are only needed by software when it is running, so one way of solving conflicts with SATEL NETCO DEVICE and some existing other service, it to temporarily shut down the other service.

1.1.2 Windows variant package and contents

'SATEL NETCO DEVICE CE for Windows' software package is shipped as a single zip-file, which should be extracted into user-chosen directory.

Note! There is no specific MS Windows installer and this allows user to have multiple side-by-side versions, of which only one can be started and used at any one time. Do not attempt to run multiple instances, this includes whether versions are the same or different.

2. USER PERMISSIONS

By default all users are welcomed to the easy-to-use User interface, with all the essential settings and functionality available, which are meant to be sufficient for common configuration needs.

Software controls the access with userlevels and elevation. Userlevel specifies which settings and functionality is available. Elevation means providing access code to gain access to a higher ('advanced') userlevel.

Depending on your maintenance organization - i.e. original equipment manufacturer or your local distributor - they can provide you with an organization specific 'Permission file', accompanied with a file-password and with elevation code to use for elevating to the 'Advanced' userlevel. File-password must be given only when importing the file and elevation code must be provided once per session, after which user can just select between the assisted and advanced userlevels.

If you need access to advanced settings or functionality and you don't have organization-specific Permission file, along with an advanced user password, which grants you access then please contact your maintenance organization for more information.

See more information about permissions file import and userlevel elevation in chapter 4.1 Software Keys and Change Userlevel screens

3. MAIN USE CASES

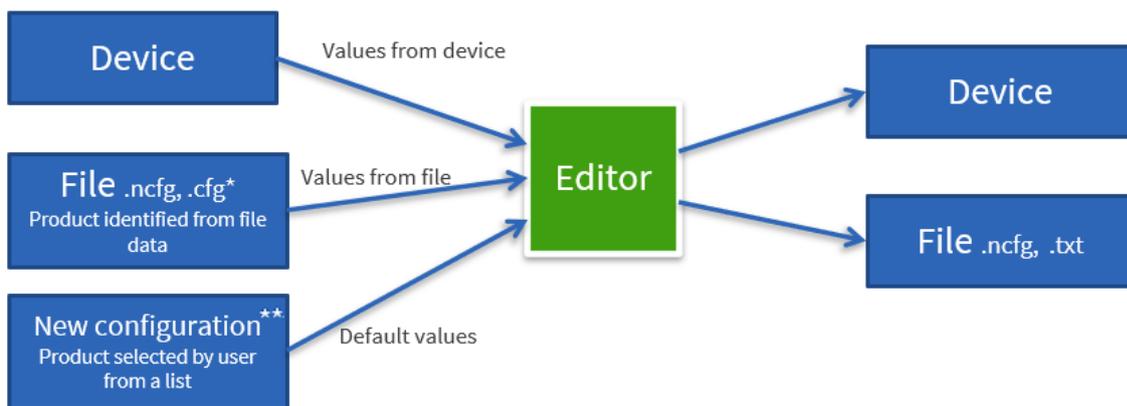
3.1 Product configuration

Basic scenarios of product configuration management are presented in the following diagram. User can select what will be starting point for configuration editing. It can be settings which are read from a device, settings from previously created file or new configuration created by NETCO and containing default values for the specific product.

After the product settings are modified, user can save the configuration to device (original or another one) or to a file.

Read configuration from:

Write configuration to:



*) .ncfg - Satel Configuration Manager file

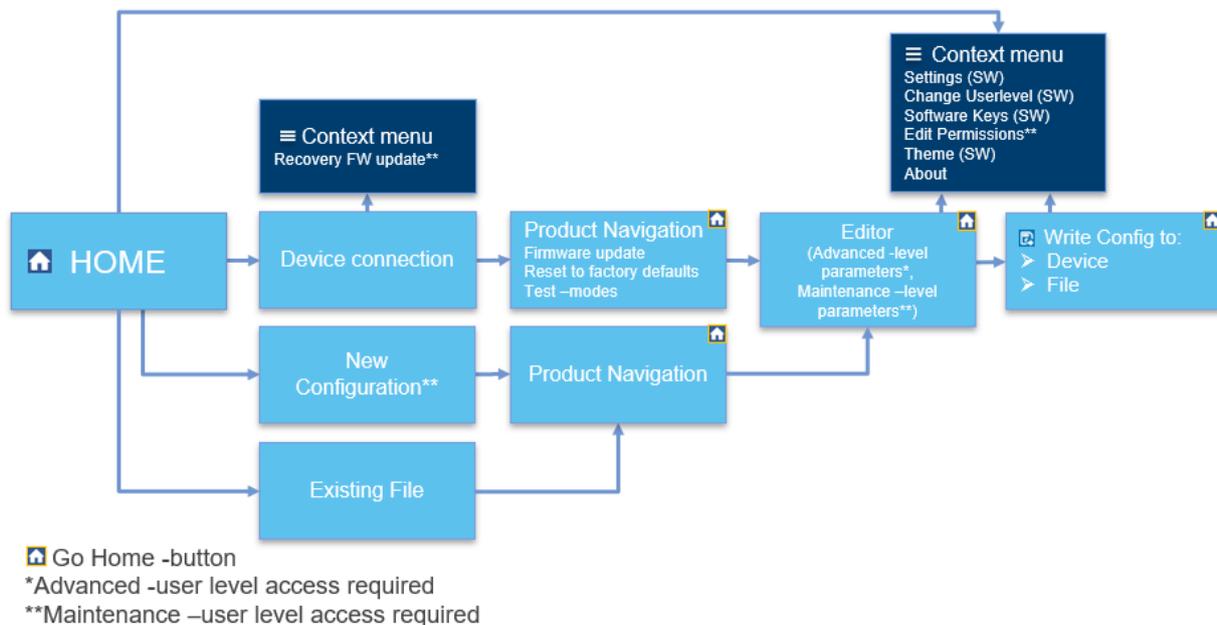
***) Maintenance user level access required

3.2 Firmware update

The 'Firmware update' button is located on the Product Navigation screen, which is accessible after identifying the connected device.

4. SCREENS AND NAVIGATION

SATEL NETCO DEVICE CE has a concept of a 'screen' or a view. Screens are opened on specific button or menu selection. User can go to previous screen by selecting <- ("Back") button in the header of each screen. "Home" icon opens the first screen. Special operations and screens are started/opened from so called "Hamburger menu"



4.1 Software Keys and Change Userlevel screens

4.1.1 Import user permissions from a file you manually choose

Once you receive

- Permission file
- Permission file password
- Userlevel elevation token

from your maintenance organization you should open a Software Keys screen from the 'Hamburger menu' and then

1. Enter the file password.
2. Either select the file from your file system or provide the http(s) link to the file.

After the file is successfully imported you can see your organization name at the trailer of the application.

Tip: Use Expose/Hide button from editor tool bar to verify the password you entered.

IMPORTANT: The permission file should be imported only once, as all the user access information is stored in your pc after the import completes. Even after you update SATEL NETCO DEVICE to a newer version, the permission information is sustained. In rare cases this might not be true, such as when a permission management feature change requires, that the earlier file or a new file must be imported.

4.12 Importing the user permissions automatically

If your NETCO DEVICE “maintenance organization” provided you a customized NETCO DEVICE software package .zip -file, the user permission file import -operation is much easier. Internally and technically, it works the same way as before, data is read from a file and stored to the pc where NETCO DEVICE was started, so it is not imported again, unless you receive an update to your package.

If your “maintenance organization” has provided you the customized package and you start the software for the first time, it will start normally but almost immediately navigate automatically to the “Software keys (custom)” screen, where you can enter the file password.

You can opt out from this and navigate back to the main screen, continuing as a basic assisted user. If you choose to enter the correct password, the permissions (software keys) will be loaded as if you had selected the file yourself. On next starts the software will arrive to the normal landing screen with the organization information shown at the bottom of the screen.

Note also, that changing userlevel works the same way in this method as if you had chosen the file manually.

4.13 Userlevel elevation

Once the permission file has been imported, you may elevate your user level by selecting the “Change Userlevel” option from the menu and entering the designated user password.

The user password must be entered each time you launch the NETCO DEVICE application in order to access advanced settings. If the password is not provided, only features available at the Assisted user level will be accessible.

4.14 Troubleshooting

Problem	Reasons	Solution
I cannot see other than assisted userlevel available	You have not received or imported permission file at the Software Keys - screen	Query possibility for obtaining permission file from your maintenance organization/dealer.
I have permission file,	Information lost or forgotten	You must contact your maintenance organization /dealer to provide the passwords. If they have

but I don't have the passwords		also lost information, then there is the only option to create a new permission file.
Permission file import failed	1) Invalid password	Verify the password using Expose/Hide button from editor tool bar
	2) You have already another permission file imported	Select "Reset ALL Permissions" (available with Advanced userlevel) and try to import the file again
User Password failed	Invalid password	Verify the password using Expose/Hide button from editor tool bar

4.2 Manage Using ('Read Config From') / Write Config To

This screen allows user to select the Media and method for Reading or Writing Device configuration data. The Manage using offerings in NETCO DEVICE CE for Windows are:

- Serial Interface - read from device connected to the serial port
- IP Interface - read from device using TCP/IP socket connection
- Existing File - read from NETCO file (.ncfg) or from Satel Configuration Manager file (.cfg).
- New Configuration - create new configuration from internal Product Database data. This option is available for Maintenance user level only

The "Write Config To" offerings in NETCO DEVICE CE for Windows are:

- Serial Interface - write to device connected to serial port. Settings are by default the same as in read.
- IP Interface - write to device using TCP/IP socket connection
- File - write/export to NETCO file (.ncfg or .txt)

NOTE! It is recommended to use 8 Data Bits, No Parity and 1 Stop Bits for device connection as other values are not commonly tested.

4.2.1 Device connection option

This selection is available for Serial or IP Interface cases only. Options are:

- 'Force configuration mode' - forces the device into command/programming mode before accessing the device. Safe connection method.
- 'None' - no specific mode set, radio interface can be used for data during configuration. Select this option in case direct connection to device NMS port or HW programming mode is used (eg. with NARS-adapter). Communication to device works faster, when this option is selected.

4.2.2 Send Serial Port/IP Prefix-Suffix (Experimental feature for advanced users only)

This selection is available for Serial or IP Interface cases only.

Sending Prefix-Suffix should be enabled when the tool cannot communicate with a device without first sending a prefix (request) byte sequence and optionally waiting for a prefix response byte sequence.

Additionally, it should be used before concluding the successfully established management session, where it is necessary to send a suffix (request) byte sequence and optionally expect a suffix response byte sequence. You can specify the request and response byte sequences in the Application settings page (see 4.5).

4.2.3 Button: Detect ports Media Connection

This button is available for Serial Interface cases only, and will re-detect Serial ports in the user's device, if available. Redetecting ports can be useful, when dynamically adding or removing USB serial ports during the session.

4.2.4 Button: Test Connection

This button tests opening the media connection. It can be used to check, if serial port or TCP/IP connection can be formed. This check does not use any management protocol, so it can help to isolate problems happening at the edge of media connection itself before the actual device interface and the used device management protocol are part of the equation.

4.2.5 Button: Identify (Detect device)

This button tries to open media connection (Serial Interface or IP Interface), then uses protocol messages based on all supported products and their product identification information.

Product will be queried for product identification dataobjects and the best match from database is offered. Product Identification can fail for these main reasons:

- Media connection cannot be created (missing device or broken connection)
- The protocol or media connection parameters are do not match the device interface
- Product responds, but is not supported by your current version and edition of the NETCO DEVICE If the product was not identified, please check the connection and port/interface configurations both in device and in NETCO in such a case. Please check also that you are using the newest SATEL NETCO DEVICE release.

4.2.6 Button: Product Navigator

After identification and selecting one of the identified product options ('Product profile') the navigator button is enabled and allows user to move to the Product Navigator screen. Product profile which was detected as active in your device is automatically selected in Identified

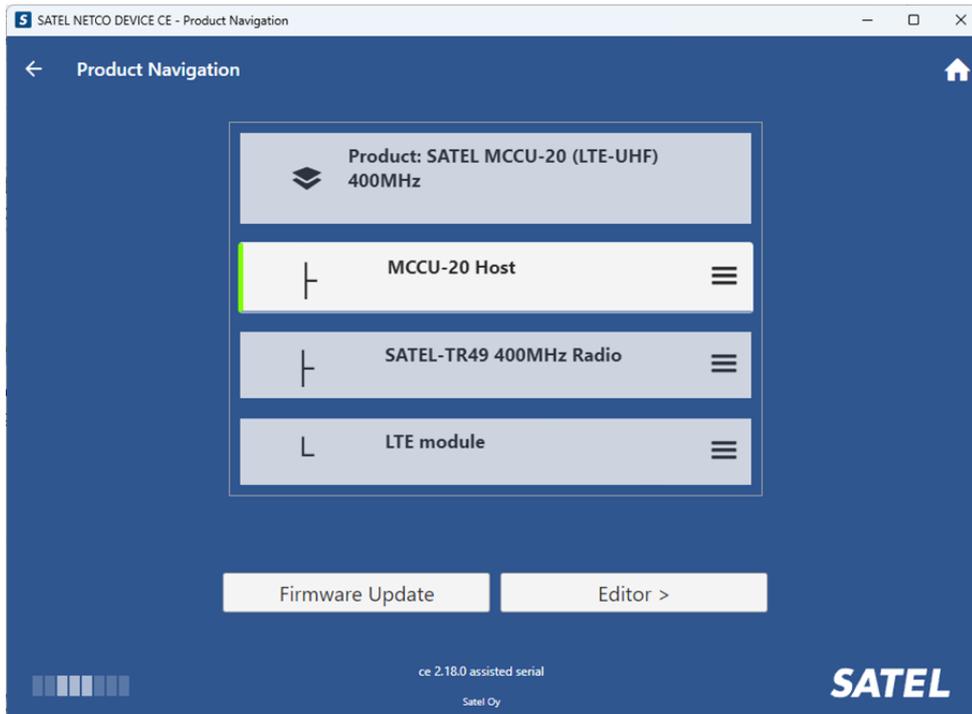
product-profile choice list. If you want to change the profile in your device, you should select another profile in the list. Please note, that the profile will be changed in the device only after NETCO reads the settings from the device, i.e. you should go to Editor screen to complete the product-profile change.

4.3 Product navigator

Product navigator screen is the place, where you can see the product structure and where you can choose to either call some Special Operation:

- Restart
- Reset to factory defaults
- Start/stop test modes
- Update firmware

or to load its settings into the Editor. Product navigator visualizes the identified product's internal modules, also called 'elements' or 'product elements'. Some SATEL products contain just one module -or- element, while others have more. Navigator screen allows to select which element to configure. Please note, that element specific "Hamburger menu" shows Special Operations only when "Manage Using" selection has been either Serial Interface or IP Interface. Most operations are available with Serial Interface, while there are less or no options for IP Interface, File or New Configuration. The topmost level represents the product level. It displays product name and some additional information, like average time when its support was added to the software code. The second level below it, relates to the first logical element in the first physical element -or- module of the product. In simple single-module products these two are equal; one logical element matches one physical element. This is not necessarily so in the future products, where on physical element, for example RU, could contain more than one logical elements. Product navigator, or "Navi", allows user to choose the element they want to edit and then edit that element's settings in simple Editor views, that resemble closely, but are not exact copies of legacy SATEL Configuration Manager software tabs.



4.3.1 **Button: Reread**

This button allows to reread -or- reload whole product's settings from the source data or connection. After successful reading, it will automatically navigate to the Editor.

(!) If you have edited settings already with the editor and wish to save those changes, please note that pressing this button will cause overwriting of your local changes in the editor.

4.3.2 **Button: Editor / Back to Editor**

This button reads product's setting from the source, if not yet read, but does not read again, if they are already read into the editor, and then navigates to the editor.

4.3.3 **Firmware Update error codes**

Error code	Description
2, 1011, 1014	FW file is corrupted
3	Serial port open failed
4	Prepare phase failed. Invalid init method in the FW file
5	Erase phase failed
6	FW write phase failed
10	Selected file is not compatible with the device
12	Invalid .pff file
14	Prefix handling failed

15	Suffix handling failed
1003	Prepare phase failed. Invalid response from the device
1006	Prepare phase failed. Invalid response from the device after flash mode was set
1008	Erase phase failed. Invalid response from the device after erase command sent
1010, 1013	Erase phase failed. Invalid response from the device after flashing started

4.4 Editor - TAB-based Element editor

Editor screen will have TABs according to identified product and element's NETCO product database information. Typically, there will be tabs such as 'General', 'Network protocol', 'Radio', 'Serial interface' and possibly more specific 'Source routing' and similar available, but the actual tabs and their content depend completely upon the product and element being edited.

TABs editor contains a list of settings, where editable settings can be edited. Not all settings (or "dataobjects") are editable or even shown, depending on current user's userlevel and the properties of the setting in the device.

When user selects dataobject name (label) field, the SETTING ASSIST Window shows additional database information about that setting, if available. The information shown is intended to help understanding the purpose of the setting. Some information may be, depending on userlevel, deeply technical or user may see essential information only.

When user changed the value of a setting, the setting is marked with orange indicator. After the settings are written to the device or to file, then the orange indicator disappears. A red indicator shown while the user is editing a setting value means that the current value is invalid. If user accepts the invalid value or exits the editor, then the invalid value is rejected and replaced with previous valid value.

4.4.1 Channel list

A Channel List TAB view is shown for Advanced user level and for products which support it. The user can add, edit and delete the list items.

The channel list can be exported to the file (.ncl) and then imported to NETCO from the file. Also, SATEL Configuration Manager channel list files (.csf) can be imported to NETCO.

4.5 Settings - Application/Manager settings

This page allows editing and viewing application settings, or 'manager settings'. Please note that not all settings are saved to persistent storage or taken in use dynamically. This view shows ALL application settings inside the SATEL NETCO DEVICE. Users are expected to normally mainly change the Theme. Other options/settings are mostly for diagnosing and special cases.

Especially communication endpoint related settings, such as Serial Interface From/To and IP Interface From/To and also the selected active interface (From/To) do not need to be configured here, since they can be configured from the media details screen (i.e. the next screen after selecting the media; serial, ip, file or new configuration). Please note also, that both Serial and IP interface "To" definitions will match the Serial and IP "From" definitions upon landing to details page i.e. the software copies and overwrites "To"-details just before the user lands to them. This is because we assume, that most often users want to write settings to same Serial or IP Interface from which they read the configuration from.

4.6 AboutScreen - Application about

This is static application text, listing:

- ABOUT SATEL NETCO DEVICE - version and other general information, including editions descriptions
- MAIN USE CASES - R.E.D.U.C.E
- ADVANCED USAGE - ABOUT USERLEVELS
- EULA - END USER LICENSE AGREEMENT
- LEGAL NOTICES
- OPEN SOURCE SOFTWARE - open source content listing and statements
- MAIN DESIGN PRINCIPLES - list of design principles and goals