

# Firmware and tools

## WCCLite firmware version 1.11.0 (released 21/03/2025)

To upgrade WCC Lite from older versions (up to 1.9.3), the user must first upgrade to 1.10 or unzip the firmware file twice to get a .bin file. This is because all firmware files are now signed.

RTU firmware v1.11.0 -> [Download](#)

WCC-excel-utility v1.11.0 -> [Download](#)

### ▼ 1.11.0 Changelog

Fixed majority of the bugs, device\_status signals functionality is now stable and working for all the protocols, simplified device\_status configuration. Changes in configuration, added or removed required parameter for some protocols. Improved error handling and device stability. Firmwares are now signed.

#### General:

- Fix: The integral\_threshold and absolute\_thresholds parameters now work identically for all slave protocols. This means that both thresholds now check the difference from the last value, not the sum of all the values that were sent before.
- Fix: The master protocols now set a value of 0 when nt flag is raised instead of -1.
- Fix: Device status signals now work correctly for all the protocols. When device is connected, device status signal returns 1, if disconnected - 2. Communication status signal is now configured identically for all the protocols and the only difference between configurations is that the communication\_status should be placed either on job\_todo or tag\_job\_todo column. The required parameters are signal\_name, device\_alias and signal\_alias. Below are the protocol list with the column name that should be used when configuring the communication status signal:

Windlog, Vestas, Vbus, Solplus, Sma Net, Powerone, Mbus TCP/Serial, Kostal, Kaco, Ginlong, Elgama, Delta, Comlynx, Aurora, At command, IEC 62056-21, Modbus Master TCP/RTU, IEC 61850 Server/Client, DNP3 Slave TCP/Serial, DNP3 Master TCP/Serial - **job\_todo**

DLMS Serial, Modbus Slave TCP/Serial, MQTT Client, IEC104 Slave/Master, IEC103 Master, IEC101 Slave/Master-**tag\_job\_todo**

#### Modbus Master:

- Fix: If there is more than one slave connected on the same port in Modbus master, scan rate determines the frequency of each job, not all connected slave devices. This eliminates delays in Modbus master communication.
- Fix: The scan\_rate\_ms and timeout\_ms parameters removed from required list and have a default integer value.
- Fix: Removed (UN)SIGNED64 and (UN)SIGNED8 support.

#### Modbus Slave:

- Add: A new respond\_delay parameter is added. By determining the response delay time in millisecond the modbus slave responds after the set amount of time before sending a response to the master.
- Fix: Improved error handling.
- Fix: Removed (UN)SIGNED8 support.

#### SMS Receiver:

- Fix: If there is a space before or after a command text, sms receiver now ignores it and accepts the command correctly.

#### Excel Utility:

- Fix: Validates cron job format for lua runner.
- Fix: For the protocols that require a serial number as a parameter, the Utility now accepts the name serial\_number for all of the protocols.
- Add: Limitation for configurations with more than 1000 signals.

#### IEC10x:

- Add: IEC101 slave timesync parameter field is no required when making a configuration.
- New: IEC101 and IEC103 master protocols now have broadcast timesync parameter that sends broadcast messages (with broadcast link address) and does not wait for a slave response, instead they wait for the timeout. After a broadcast timesync command all slave devices are synced to the same master time at once.
- New: IEC101 slave now has SBO commands, that can be configured by adding a select\_ms parameter to

command signals. This determines the time between select and execute commands.

- Add: IEC104 master gi\_interval\_sec parameter functionality changes. The negative value determined for this parameter disables the GI, 0 sends GI only on initialization, any other value determined the frequency of GI command.
- Fix: IEC101 slave fixed cache processing.

#### **DLMS:**

- Fix: The retry\_counter parameter is renamed to retry\_count and is now working according to the documentation.

#### **MQTT:**

- Add: The parameter gi\_interval\_ms is added to MQTT configuration. If configured, it determines the frequency of data transmission. After each set time frame all the values are being returned at once.

#### **DNP3 slave:**

- Fix: The command\_variation parameter is determined from the Excel configuration.

#### **Data Export:**

- Add: Added connection tracker. Data export connectivity is now visible on the web interface.

#### **IPSEC:**

- Add: New EC Diffie-Helman key change algorithms – ecp256 and ecp348.

#### **▼ Known issues**

- PLC does not start after reboot.

## **WCCLite firmware version 1.10.0 (released 19/12/2024)**

RTU firmware v1.10.0 -> [Download](#)

WCC-excel-utility v1.10.0 -> [Download](#)

#### **▼ 1.10.0 Changelog**

##### **General:**

- New: Some debug flags have been removed. Only -h (help), -V (version), -d<debug level>, -c (config), -e (redis) and -m (math) are left.
- New: Online debug functionality.
- Add: Firmware is being validated during sysupgrade. Unsigned firmware can also be uploaded by clicking "allow unsigned firmware".
- Fix: Services have been standardized to support shutdown control signals SIGINT and SIGTERM.

##### **Data Export:**

- Fix: Services have been standardized to support shutdown control signals SIGINT and SIGTERM.

##### **DLMS:**

- Fix: Change syslog level to 4 and remove warning messages.
- Add: Added device\_name to connection tracker.

##### **Excel Utility:**

- Fix: periodic\_update\_ms now accepts values up to 2147483647.
- Add: IEC101-Master add asdu\_size and asdu\_address limit validation
- New: sms-receiver new job type SET-RAT added.
- Fix: IEC104 slave sends spontaneous messages when cache size is set to 0.
- Fix: Modbus slave does not allow to configure SIGNED8 and UNSIGNED8 as number\_types.

##### **GSMD:**

- Fix: GSMD now uses debug messages to write to syslog.
- New: Ubus function for supported RAT indication.

#### IEC10x:

- Fix: Commands in IEC103 master now reacts to communication loss and sends cotn response.
- Fix: Commands would not be saved in IEC101 master with cotn response.
- Fix: Commands would not be force sent repeatedly after disconnect.
- Fix: Change syslog level to 4 and remove warning messages.
- Fix: Command spam would not crash service on disconnect.

#### Modbus Master:

- Fix: Commands on startup does not cause an abrupt exit of service.
- Fix: Change syslog level to 4 and remove warning messages.

#### SMS Receiver:

- New: RAT job functionality added.

#### Log:

- Add: Time format has changed and now fmt library for time logging is used.

#### Modbus slave:

- Fix: Change syslog level to 4 and remove warning messages.

#### Pooler:

- Fix: Change syslog level to 4 and remove warning messages.

#### Tag engine:

- Fix: Change syslog level to 4 and remove warning messages.

#### Web:

- New: Allow only signed software to be uploaded via api.
- Add: After the SIM card is blocked and PUK code is entered, a new PIN code is saved automatically.
- Add: online-debug validate time input field to only accept values from 1 to 100 000 seconds.
- Add: Protocol Logger webpage to Protocol Hub.
- Fix: Lua runner page changed to remove refreshing and added custom lua file loading.
- Fix: All of the log files are downloaded at once.

#### ▼ Known issues

- For some protocols device status signals might not work or work incorrectly.
- PLC does not start after reboot.
- If there is more than one slave connected on the same port in Modbus master, scan rate determines the frequency that all slave devices are scanned, not each job. This might cause slight delays in Modbus master communication.
- In Modbus, a scan rate of less than 200 ms for a single operation can occasionally result in repeated tasks due to timing limitations.

## WCCLite firmware version 1.9.3 (released 04/10/2024)

RTU firmware v1.9.3 -> [Download](#)

WCC-excel-utility v1.9.3 -> [Download](#)

Cloud Firmware v1.5.6 -> [Download](#)

#### ▼ 1.9.3 Changelog

##### Data Export:

- New: The existance of DUID is being checked, if one is not specified, 0 is being used.

##### DNP3:

- New: If communication was lost, but data is still being sent, DNP3 slave will get the lost values on startup when communication gets back to normal.
- Fix: DNP3 slave communication starts even with device status signal configured.

- Fix: When using localtime parameter, daylight savings time are now affected.

#### **Excel utility:**

- New: protocol\_control\_char and mode\_control\_char are added to IEC62056-21.
- New: After uploading a configuration to WCC Lite, the date of the upload is visible on the web interface.
- Fix: IEC61850 Client and server now supports the following cdc values: SPS, DPS, INS, ACT, ACD, SEC, MV, CMV, WYE, DEL, SEQ, SPG, ING, ASG, ENS, ENG.
- New: Utility now checks if there is no duplicate ports in slave protocols. This means that if there are more than one slave protocol configured they cannot have the same virtual port specified.

#### **GSMD:**

- New: WCC Lite with modems EC25 (hardware version 1.4) now tries to reconnect to operator if the service is lost.
- Fix: SIM card is detected automatically, even after it has been changed.
- New: If WCC Lite has no modem, a message indicating this is written to syslog only once.
- New: If SIM card's memory is full, it is automatically cleared on SIM initialization.
- Fix: GSMD now supports older modems (Ublox Sara/Lara, hardware 1.1 and 1.2).

#### **IEC10x:**

- Fix: IEC101 master does not change command object type according to telegram.
- Fix: Timesync is now indicated in events log as a separate signal.
- Fix: IEC101 slave Cache is now sending data in fragments after communication reconnects.
- New: IEC103 master validates asdu of a received message. This means that imported signals on web interface will show IEC103 master's signal's asdu instead of source signal's asdu.

#### **IEC61850 Server:**

- Fix: If communication was lost, server will save signals in cache. After the communication is established again, those values will be received at the start.

#### **Modbus:**

- Fix: Requests will now be sent in correct order and TCP transaction id is tracked correctly. If there's data with bad transaction ID it will be denied.
- New: If configured address size is more than 1 in read command, it will be converted to multiple registers.
- Fix: Update parameter always publishing when set to 0
- Fix: Endianess check added.
- Fix: Modbus no longer breaks on failed command when executing on disconnected device.
- Fix: Modbus Master communication is resistant to unsolicited messages.
- Fix: Modbus Master parses only messages from the correct slave id.

#### **SMS Logger:**

- New: New service on web interface that shows received messages.

#### **Libelseta-misc:**

- New: For all protocols if threshold is set to a negative number in Excel configuration, it is being ignored.

#### **Pooler:**

- New: All pooler protocols (Aurora, COMLYNX, Delta, GINLONG, Kaco, KOSTAL, M-Bus, POWERONE, SMA NET, SOLPLUS, VBUS, VESTAS, Windlog) now support connection\_tracker, which means every time the protocol is connected or disconnected it is represented on syslog and on the web.
- New: IEC62056-21 now supports protocol control and mode control characters.
- New: Removed support for legacy protocols (modbus, dlms, internal signals)

#### **▼ Known issues**

- For some protocols device status signals might not work or work incorrectly.
- PLC does not start after reboot.
- If SIM card was blocked and PUK code was required, new PIN code will not be saved automatically.
- If there is more than one slave connected on the same port in Modbus master, scan rate determines the frequency that all slave devices are scanned, not each job. This might cause slight delays in Modbus master communication.
- In Modbus, a scan rate of less than 200 ms for a single operation can occasionally result in repeated tasks due to timing limitations.
- In Modbus TCP, if a command is issued before the protocol fully initializes, it may cause the connection to fail at startup.

# WCCLite firmware version 1.9.0 (released 18/06/2024)

RTU firmware v1.9.0 -> [Download](#)

WCC-excel-utility v1.9.0 -> [Download](#)

## ▼ 1.9.0 Changelog

### Web interface:

New: Protocol connections now have added device name column therefore it is more clear to understand what exact device status is shown. That affects all protocols.

Imported signals are now significantly improved. We added additional columns and enabled the ability to hide unnecessary columns and filter more precisely.

### Excel-utility:

New: A new parameter called 'periodic\_update\_ms' has been added to send data periodically for all protocols and by default disabled.

New: Ignore Excel cells if their value is whitespace.

New: A new parameter called 'max\_command\_limit' has been added to the Modbus Master protocol. This parameter limits the command queue in the Modbus Master.

New: A common link complex schema has been added for the new Elseta-Modbus service.

Fix: Corrected the calculation of integral threshold differences and implemented periodic sending of these values.

Fix: Fixes suppression time for slave and master protocols—no more double suppression for the same signal.

Fix: Resolved issue with handling big numbers during Excel configuration upload. The software now validates values that do not exceed the int64 range.

Fix: Internal signals for SIM-Select and MODEM-RESET have been moved to the GSM job to-do list, as it now uses commands instead of gpio.

### Events log:

New: Extended logging functionality to log events even when only attributes changed.

New: Added functionality if signal comes with no time tag, current system time is attached to it.

New: Since this version all events of the time synchronisation signal are always logged.

### API changes:

New: Added Authentication to API. Now is the ability to secure API with ApiKey.

Fix: Fixed and improved all API endpoints, which helps integrate WCCLite into backend systems more easily.

Fix: Sync endpoint doesn't rename config. Previously when configuration was uploaded over API, the configuration file was renamed to a random name.

### Internal data:

Fix: SIM-SELECT and MODEM-RESET moved to GSM jobs and will now be executed when a signal is received in the input channel.

### Lua-runner:

Fix: Due to data type changes for execution\_parameter now can set interval time up to 49 days in milliseconds.

### Tag-engine:

New: periodic update parameter and functionality.

Fix: Fixed suppression timer functionality. Restart the suppression timer when a new value comes. Don't restart if the value is the same.

Fix: Change suppression\_time\_ms type to uint32\_t which will allow setup suppression time for longer than 65seconds.

### DNP3 Master:

New: Added new parameter "use\_local\_time" and a new feature to sync DNP3 Slave devices from WCC Lite with local time(with timezone) instead of UTC which is by the standard of DNP. That allows to use of local time on devices without time zone support.

### IEC 60870-5

New: A new parameter called 'periodic\_update\_ms' has been added to send data periodically.

New: An option to select the type of link reset Command in the IEC103 Master system has been added.

New: An option to turn off General Interrogation (GI) and time synchronisation in the IEC103 Master system has been added.

Fix: The issue with the IEC103 Master protocol crashing when sending a Cause of Transmission (COT) code 20 has been resolved.

### Modbus:

New: Introduced a new Modbus master service v.2.0.

New: Added configuration for the command queue waiting for execution. By default, the queue can hold 200 commands.

New: Added TCP frame length check.

New: Added response length check.

Fix: Communication stability improved link status control.

Fix: Enhanced protocol immunity to handle incomplete responses or incorrect responses from other slaves.

Fix: Resolved communication line noise in RTU and TCP.

Fix: Communication status indication is improved to show each device's status without delay.

Fix: Improved communication over Modbus with more than 10 slave devices.

**Other protocols fixes:**

Fix: Modbus Slave changes the error type when no data is available.

Fix: IEC62056-21 accepts a serial number as a string.

**▼ Known issues**

- GSMD does not work with hardware older than version 1.4.
- Some mathematical functions have been changed and might not work. Mathematical functions for slave protocols have been removed. More information can be found in the Manual, chapter 18.3 Mathematical functions.
- For some protocols device status signals might not work or work incorrectly.
- The IEC61850 server does not start automatically after uploading a configuration.
- Modbus Master UNSIGNED32 and SIGNED32 number types are represented incorrectly.
- Web column filters aren't working when more than one filter is applied.
- The Modbus master update parameter is not working.

**WCCLite firmware version 1.8.5 (released 16/04/2024)**

RTU Firmware v1.8.5 -> [Download](#)

**▼ 1.8.5 Changelog****Events log:**

- Fix: Timestamps are now represented correctly in millisecond precision.

**General:**

- Syslog now has messages indicating that the protocol is connected or disconnected.

**▼ Known issues**

- GSMD does not work with hardware older than version 1.4.
- Some mathematical functions have been changed and might not work. Mathematical functions for slave protocols have been removed. More information can be found in the Manual, chapter 18.3 Mathematical functions.
- For some protocols device status signals might not work or work incorrectly.
- Meter-bus signals are not displayed on the WCCLite web interface under the imported signals tab.

**WCCLite firmware version 1.8.4 (released 11/04/2024)**

RTU Firmware v1.8.4 -> [Download](#)

**▼ 1.8.4 Changelog****IEC103:**

- Fix: Initialization

**IEC104 slave:**

- New: support for broadcast time sync and general interrogation

**IEC101 slave:**

- New: support for broadcast time sync

**▼ Known issues**

- GSMD does not work with hardware older than version 1.4.
- Some mathematical functions have been changed and might not work. Mathematical functions for slave protocols have been removed. More information can be found in the Manual, chapter 18.3 Mathematical functions.
- For some protocols device status signals might not work or work incorrectly.
- Meter-bus signals are not displayed on the WCCLite web interface under the imported signals tab.

## WCCLite firmware version 1.8.3 (released 12/01/2024)

RTU Firmware v1.8.3 -> [Download](#)

### ▼ 1.8.3 Changelog

#### Events log:

- Fix: Master displays control events.

#### IEC10x:

- New: IEC104-Slave UID now consists of asdu, ioa, and type.
- Fix: IEC103-Master command transmission is now correct.
- Fix: IEC104-Slave add asdu type to cache message.
- Fix: IEC104-Master UID now consists of asdu, ioa, and type.

#### Modbus:

- Fix: Modbus-slave DIGITAL signal type size correction.

#### Libelseta-misc:

- New: integral threshold can send periodic data when the threshold is set to 0.

#### WCC-Web:

- New: Keep only the network settings button.
- Fix: Grammar mistakes.

#### Pooler:

- Fix: Pathing for config files.

### ▼ Known issues

- GSMD does not work with hardware older than version 1.4.
- Some mathematical functions have been changed and might not work. Mathematical functions for slave protocols have been removed. More information can be found in the Manual, chapter 18.3 Mathematical functions.
- For some protocols device status signals might not work or work incorrectly.
- Meter-bus signals are not displayed on the WCCLite web interface under the imported signals tab.

## WCCLite firmware version 1.8.1 (released 05/07/2023)

RTU Firmware v1.8.1 -> [Download](#)

WCC-excel-utility v1.8.1 -> [Download](#)

### ▼ 1.8.1 Changelog

#### Events log:

- Fix: Timestamp corrections like milliseconds separator changed to dot, removed DOW (Day of the week).

#### Excel-utility:

- Fix: MQTT functionality improvements.
- Fix: Fixed issue where invalid source\_device\_alias would be incorrectly reported.
- New: Utility now lists unused variables when creating the configuration.

#### Gsm-utils:

- New: Added APN setting before sim switch.
- Fix: GSMD service now informs the system when the modem is ready for work and clears the serial line on start.

#### IEC10x:

- New: IEC101-Master\* Multiple link support.
- Fix: IEC103-Master\* Correct responses to command ACK, NACK, and link-down situations.
- Fix: IEC103-Master\* Unset COT handling.
- Fix: IEC103-Master\* fixed initialization sequence.
- Fix: IEC103-Master\* General command correct response handling fixed.
- Fix: IEC101-Master, IEC103-Master\* NT flag is set to signals on normal service exit.
- Fix: IEC101-Master\* added SQ functionality.
- Fix: IEC101-Master\* Minor changes to message spam to syslog and NT signals set on every connect.
- Fix: IEC101-Master\* NT record time, NACK response logic, and communication status signal update.
- Fix: IEC101-Master\* fixed receive buffer clearing.

#### **Modbus:**

- New: Tags are set to NT on service shutdown.
- New: When the job is timed out an informative message is provided.
- Fix: Internal delay removed from TCP link.
- Fix: The command queue is cleared on the link down.
- Fix: Commands received on the link down are not added to the inner job queue and the correct ack/nack response is added.
- Fix: Scheduler timeout timer configured from config instead of maximum allowable time.
- Fix: Correct channel displayed in math debug messages.

#### **MQTT:**

- New: MQTT Client now supports TLS connection.
- New: MQTT protocol is now listed in protocol connections.

#### **SMS-receiver:**

- New: New service for SMS receive via GSM subsystem.

#### **SMS-sender:**

- Fix: The service now gives information in debug mode about starting.

#### **▼ Known issues**

- GSMD does not work with hardware older than version 1.4.
- Some mathematical functions have been changed and might not work. Mathematical functions for slave protocols have been removed. More information can be found in the Manual, chapter 18.3 Mathematical functions.
- For some protocols device status signals might not work or work incorrectly.
- Meter-bus signals are not displayed on the WCCLite web interface under the imported signals tab.

## **4diac development environment for integrated PLC.**

Download it from [here](#). (Since firmware 1.4.0)

## **WCCLite firmware version 1.7.0 (released 08/11/2022)**

RTU Firmware v1.7.0 -> [Download](#) (MD5sum: 9dd88b1a56cf485e60f87b34421fdbe0 )

WCC-excel-utility v1.7.0 -> [Download](#)

#### **▼ 1.7.0 Changelog**

##### **General:**

- NEW scripts engine on WCCLite - LUA Runner
- NEW: support of multiple Lua scripts with access to selected tags
- NEW: web interface to upload scripts and control (stop/run)
- NEW: Excel added functionality to control Lua scripts

##### **DLMS/Cosem Master v1.0.7**

- FIX: Syslog is written only once per error til the next successful read, Debug printing continues on subsequent errors.
- NEW: Error codes for register configuration and socket timeout.

##### **MQTT Publish v1.2.0**

- NEW: MQTT protocol is now listed in the protocol connections tab making it easy to debug link status.



- NEW: MQTT publish DNS support enables the use of domain names instead of IP addresses. Now supports both IP and DNS as host.

#### **WCC Excel utility (v1.7.0) and internal WCCLite Protocol HUB configuration upload:**

- NEW: MQTT publish DNS support enables using domain names instead of IP addresses only previously.
- NEW: IEC101-Slave Added default values for parameters like message\_size and respond\_delay now that can be not configured in Excel.
- NEW Lua-runner script running engine. Configurations are now available for the Lua script engine.
- FIX: Data-Export service logging\_period\_aligned now only supports integer type 1 and 0 as true or false.

## **WCCLite firmware version 1.6.3 (released 05/10/2022)**

RTU Firmware v1.6.3 -> [Download](#) (MD5sum: a682f29757f9ae163548b4c67da8951c)

WCC-excel-utility v1.6.3 -> [Download](#)

### **▼ 1.6.3 Changelog**

#### **General**

- New: Added new interface about network IP addresses [Status->Overview Interfaces table].
- New: Extended web interface width.
- New: Source math expressions added. Please check the WIKI page for more information.
- New: Virtual tags support added. Please check the WIKI page for more information.
- New: math expressions added: floor and mod(%).
- New: Redesigned internal data with faster data update and independent from other protocols' behaviour. Please check the WIKI page for more information.
- New: Internal signals based on the date are available (Years, months, days, hours, minutes, seconds).
- New: Syslog added milliseconds on-time printing.
- Fix: Wcclite time sync service improved.
- Fix: Signal linking performance improved.

#### **Data export v.1.1.1**

- New: Precision to 4th number after of float points added 10e-4 are converted to scientific format (e.g. 0.51e-6)

#### **DLMS/Cosem Master v1.0.5**

- New: Fully redesigned DLMS/Cosem service is separate from the pooler. Please check the WIKI page for more information.
- New: Improved debug information gives a better understanding of DLMS exchange.
- Fix: Improved data exchange between master and slave. Faster requests from master to slave.
- Fix: Reduced information in syslog about communication failure.

#### **DNP3.0 Master v1.1.1**

- New: Added into protocol connections information about DNP3.0 protocol.

#### **IEC 60870-5-101 Slave v.1.9.33**

- New: IEC 60870-5-101 added support for 58-63 data types
- Fix: The time quality bit is now set according to the time sync status.

#### **IEC 60870-5-104 Slave v1.10.0**

- New: DNV/KEMA IEC 60870-5-104 Slave certified.
- New: Command age handling added.
- Fix: Unsupported signals are acknowledged with negative COT7.
- Fix: Clock synchronization command fixed due to standard requirements.
- Fix: Double precision values and step commands fixed due to standard requirements.
- Fix: Timers t1, t2 and t3 improved timer accuracy.
- Fix: Improved response to invalid data packets.
- Fix: The time quality bit is now set according to the time sync status.

#### **Modbus Master v1.2.8**

- Fix: Enabled link restart after failed communication
- Fix: Internal timer update to prevent incorrect functionality after time sync.

#### **Modbus Slave v1.1.7**

- New: Communication status and Device running signals can now be configured.

- Fix: Writing functions now return the correct error.
- Fix: Forbidden write into not configured registers.
- Fix: Improved service stability.

#### **WCC Excel utility (v1.6.3) and internal WCCLite Protocol HUB configuration upload:**

- New: IEC 60870-5-101 added support for 58-63 data types
- New: Modbus Slave communication status and device running signals added.
- New: Modbus Master added a status parameter for each device.
- New: IEC 60870-5-104 Slave added command\_age parameter.
- Fix: improved and aligned to all protocols logging\_period\_aligned with integer 1(true) and 0
- Fix: Math expressions improved
- Fix: Missed default settings were added to the configuration.

## **WCCLite firmware version 1.6.2 (released 18/03/2022)**

RTU Firmware v1.6.2 -> [Download](#) (MD5sum: df583b3052f3e5a09b7ad3dfb8a3745b)

WCC-excel-utility v1.6.2 -> [Download](#)

### **▼ 1.6.2 Changelog**

#### **WEB interface improvements:**

- NEW: Excel configuration upload, now faster than ever and limited to 1000 signal lines in Excel.
- NEW: Chronosd and time synchronization window;
- NEW: Added additional GSM options to better control connection to the GSM network with a fixed IP;
- NEW: Events-log improved with Signal direction for visualization.
- FIX: Password changing error via the web interface.
- FIX: Login Security issues.

#### **Improved mobile connectivity:**

- NEW: Added GSM network support with fixed IP and custom APN at once;
- FIX: GSM network interface starting issues.

#### **NEW Time synchronization management service CRONOSD:**

- NEW: Prioritization of time sync sources;
- NEW: Information about current time master and status;
- NEW: Manage time sync sources;

#### **IEC 61850 Master:**

- NEW: IEC61850 client additional ACT/ACD structures variations;

#### **IEC 60870-5:**

- FIX: IEC-104 slave: data type conversion after GI;
- NEW: Chronosd support for IEC101-slave and IEC104-slave;

#### **IEC 60870-5-103 master:**

- FIX: Improved command processing speed;
- FIX: Single signal control with different SCADAs;
- FIX: Other bugfixes;

#### **DNP3:**

- NEW: Chronosd support;

#### **DATA EXPORT service:**

- NEW: Multiple devices support;

## **WCCLite firmware version 1.5.4 (released 27/08/2021)**

RTU Firmware v1.5.4 -> [Download](#) (MD5sum: bb5c9806b0202ff778851d642467ed65)

Cloud Firmware v1.5.4 -> [Download](#) (MD5sum: 5dcb6dc4c99f7e374f7b3120019d6ca1)

#### ▼ 1.5.4 Changelog

##### WEB interface improvements:

- NEW: Upgrade Events Log window with auto refresh and log record number options.
- NEW: PIN status view in GSM window.
- NEW: Remove the fboot file button in Protocol Hub.
- FIX: Small fixes for Switch SIM and Restart Modem buttons.
- FIX: Removed GSM-related sections from the web if the modem is not present in the device.
- FIX: Removed unused protocols from the network interfaces window.
- FIX: IP address display on GSM interface.
- FIX: Small style fixes.

##### Redesigned EVENTS LOG:

- NEW: New events log service (works with all protocols).

##### Extended functionality of DATA EXPORT service:

- NEW: Added csv-periodic, json-simple, json-samples format to data-export.
- NEW: Memory optimization (vmRSS) for data export.
- NEW: Added field separator and decimal number separator selection to data export.
- NEW: Enforcing additional rules for data-export folders.
- NEW: Multi-device support for data export.

##### Improved mobile connectivity:

- NEW: Enter the PUK code if the SIM card is blocked.
- FIX: Do not start GSM-related services if the modem is not present in the device.

##### IEC 60870-5-103 master:

- FIX: IEC103-master bugfix measurements with negative values.

##### MODBUS master:

- FIX: Bugfixes, memory handling issues.
- FIX: Bugfixes.

##### New SMS SENDER service:

- NEW: SMS sending functionality.

##### Other protocol improvements:

- FIX: TCP/IP sockets changed to nonblocking.
- NEW: DLMS prefix replaced with device alias in error and debug logs.
- FIX: DLMS library updated.
- NEW: DLMS connection tracker added.
- NEW: DLMS -raw command added to check packages in hex.
- FIX: DLMS reading speed increased.
- NEW: DLMS meter server address and register short names can now be specified with address\_size and short\_name columns in configuration Excels.

##### VPN functionality IPSEC:

- FIX: IPsec service not starting properly.

##### WCC EXCEL UTILITY v1.3.6:

- NEW: Added redesigned events log service.
- FIX: Added default value for data export.
- NEW: SMS sender protocol.
- NEW: Short name and address size columns for DLMS.

##### Known issues:

- **Events log:** The events log displays only raw signal values. Values processed with math expressions are omitted.
- **SMS sender:** The host parameter in the Devices sheet is required when configuring the SMS sender. WCC Excel utility does not report that as a problem.

## WCCLite firmware version 1.5.1 (released 10/2/2021)

RTU Firmware v1.5.1 -> [Download](#) (MD5sum: 023b30a2aa997818abada9cf4e0a515e)

WCC-excel-utility v1.3.3 -> [Download](#)

#### ▼ 1.5.1 Changelog

- **DLMS:**

- New: DLMS meter server address and register short names can now be specified with address\_size and short\_name columns in configuration Excel.
- Fix: DLMS reading speed increased.
- **Modbus Master:**
  - Fix: Incorrect connection status operation for serial instances.
  - Fix: Reconnection issues with TCP stations
- **WCC Excel Utility v1.3.3:**
  - New: Short name and address size columns for DLMS added.

## WCCLite firmware version 1.5.0 (released 20/1/2021)

RTU Firmware v1.5.0 -> [Download](#)

WCC-excel-utility v1.3.2 -> [Download](#)

### ▼ 1.5.0 Changelog

- **Remote debugging and protocol analysis of WCC Lite protocols on your PC:**
  - By using the WCC Excel utility you can monitor and observe real-time protocol communication between WCCLite and connected 3<sup>rd</sup> party devices;
- **New protocols:**
  - IEC 61850 Server protocol support:
    - Supported: edition 1, edition 2, edition 2.1;
    - Flexible ICD files;
    - TLS encapsulation;
    - Static Report control blocks;
    - Buffered and unbuffered Report Control blocks;
    - Command execution (all types).
  - IEC 61850 Client protocol support:
    - Supported: edition 1, edition 2, edition 2.1;
    - TLS encapsulation;
    - Static Report Control blocks;
    - Buffered and unbuffered Report Control blocks;
    - Execute commands (all types).
  - Data Export service:
    - Export data to remote FTP(s), HTTP(s) servers;
    - Authentication support (based on username and password);
    - Export formats CSV and JSON;
    - Compression function included;
    - Multiple servers support;
    - Perfectly fits into IoT and Cloud computing applications.
- **Cybersecurity functions:**
  - Password complexity support for local users:
    - Password complexity can be enabled or disabled by the administrator;
    - Freely configurable password policy including:
      - Minimum password length;
      - Upper case letters requirement;
      - Lower case letters requirement;
      - Digits use;
      - Special characters are used.
  - Protocol status window:
    - Shows configured protocols on the device;
    - Shows connected/disconnected client/server IP address;
    - Now supports IEC 60870-5, DNP 3.0, and Modbus protocols;
- **Bug fixes and major improvements:**
  - WCCLite internal signals
    - Solved problems with signal CPU usage;

## WCCLite firmware version v.1.4.7 (released 12/11/2020)

RTU Firmware v.1.4.7 -> [Download](#)

### ▼ 1.4.7 Changelog

- **Web UI:**
  - Fix: Signals update bug in Imported Signals window;
  - Event log window rework/fix.
- **Pooler/DLMS:**
  - Fix: CPU usage reading job always returns 0 (v2.16.2);
  - Fix: DLMS float/double endianness bug(v2.16.2).
- **DNP3.0:**
  - Fix: Lifetime issues under big data transfer rate for master (v2.2.1);

- Fix: Slave does not remove Buffer Overflow IIN bit (v2.2.1);
- Fix: Master does not send ACT\_TERM signal after the successful command(v2.2.1).
- **Wcc-excel-utility:**
  - Fix: DNP3 master integrity\_interval and exception\_interval variables reading(v1.3.1).

## WCCLite firmware version v.1.4.6 (released 24/9/2020)

RTU Firmware v.1.4.6 -> [Download](#)

### ▼ 1.4.6 Changelog

- **DNP 3.0 slave:**
  - fixed: Select/Operate behaviour (now accepts time gap between Select and Operate);
  - added: support Pulse On/Off and Trip/Close commands;
- **DNP 3.0 master:**
  - fixed: DirectNoAck command support;
  - added: support for Pulse On/Off and Trip/Close commands;
- **Pooler DLMS:**
  - fixed: timeout handling (now supports timeout and timeout\_ms);
  - fixed: WRAPPER layer support;
- **Pooler fix:** Added a configurable serial close delay;
- The administrator password window changed the name;

## WCCLite firmware version v.1.4.5 (released 4/7/2020)

RTU Firmware v.1.4.5 -> [Download](#)

### ▼ 1.4.5 Changelog

- Modbus fix: improved reconnect function for Modbus TCP;
- Modbus fix: reconnect default delay extended to 3 seconds for Modbus TCP;
- Self-check: Added IMEI scanning;
- updated interface name for the mobile modem from ublox to wwan;
- telemetry-agent: minor fixes to limit CPU usage;
- fboot upload mechanism of removing non-ASCII characters removed;
- if a duid-registering server returns a 500-like error, script handling it is killed;
- telemetry-agent kills every subprocess lasting than 4 seconds to not let CPU load skyrocket;
- FBOOT file starting successes/failures are now written to Syslog;
- Modbus fix: pulse tags can now be sent in parallel;
- Modbus fix: command buffer is now transformed to FIFO
- fboot file is no longer deleted after importing configuration;
- self-check has added checks for digital input;
- fixes for GSM while migrating from a version older than 1.4.0;
- process controlling LEDs is restarted after self-check;
- Modbus job in semicolon form interpretation problem solved;
- Modbus-slave now returns DATA\_ILLEGAL\_ADDRESS if no valid data can be found;
- WCC Excel utility now accepts uppercase, lowercase, and mixed versions of a protocol name;
- measurement units introduced to signal quality in the GSM status window;
- dropdown introduced for pinger communication interface;
- proper cleanup after an unsuccessful update of configuration;
- not letting import configuration via the front-end interface if a blank file is being forced;
- forcing synchronous communication when operating Modbus TCP;
- Fixes Sara-U270 modem technology select dropdown list;

## WCCLite firmware version 1.4.0 (released 4/4/2020)

RTU Firmware v.1.4.0 -> [Download](#)

WCC-excel-utility v1.2.19 -> [Download](#)

### ▼ 1.4.0 Changelog

- PLC logic. This logic is compatible with IEC 61499 and will be able to perform tasks distributed across several devices and aggregate their results.
- Official WCC Excel utility. The new utility will enable you to load configurations remotely, and overall speed up the configuration process.
- MQTT client. The functionality is currently available for unencrypted data and is recommended for use in local networks. There is also an LWT option.
- GSM status window. This will allow us to monitor the GSM parameter in real time, restart the modem, or switch SIM cards.
- GSM parameters, as well as GSM pinger parameters, have migrated to the Network graph. They were

given wider selection options.

- It is now possible to track signal quality history. Signal quality will also be shown for certain parameters for certain signals.
- Updates to Imported signals column filtering
- Imported signals now refresh signals by signal\_alias and device\_alias pair – instead of device\_name and signal\_name as before;
- Host parameter is no longer needed for Modbus Slave Serial;
- Previously, if operator selection was used in Excel - flags would be added incorrectly. This has been updated;
- For certain mathematical operations, some quotation symbols were incorrectly interpreted. They are automatically corrected at reading time to the format understandable for the software;
- All required updates to out-of-the-box support the upcoming 1.4 firmware version release;

## WCCLite firmware version 1.3.7 (released 23/03/2020)

**NOTE:** Unzip before putting it into the device!

RTU Firmware v.1.3.7 -> [Download](#)

Cloud Firmware v.1.3.7 -> [Download](#)

### ▼ 1.3.7 Changelog

- IEC 60870-5-103 process handles device connection/disconnection more robustly;
- Multiple Modbus commands can be sent without causing process crashes;
- Modbus commands can be executed one after another if that device is handled by the process at that moment;
- IEC 60870-5-103 endianness problems fixed;

Known issues:

- some quote (unquote) symbols may break math\_expression functionality

## WCCLite firmware version 1.3.6

**NOTE:** Unzip before putting it into the device!

RTU Firmware v.1.3.6 -> [Download](#)

### ▼ 1.3.6 Changelog

- IEC 60870-5-103 protocol error counting mechanism problem which hangs the process is fixed;

Known issues:

- IEC 60870-5-103 process might get overrun and hang if the device is disconnected for lengthy amounts of time;
- multiple Modbus commands in a row may cause a segmentation fault

## WCCLite firmware version 1.3.5

**NOTE:** Unzip before putting it into the device!

RTU Firmware v.1.3.5 -> [Download](#)

Cloud Firmware v.1.3.5 -> [Download](#)

### ▼ 1.3.5 Changelog

- Speedup 10x of an IEC 60870-5-103 Master protocol;
- IEC 60870-5-103 signals of the fleeting type introduced;
- System Diagnostic Report function introduced (System->Backup/Flash Firmware);
- Fixes for default protocol hub firewall rules;
- modem now are timed with timeouts to rule out any script going rogue on CPU;
- Last Will and Testament messages are now technically supported for MQTT (via rm-bridge) protocol.

Known issues:

- IEC 60870-5-103 error counting mechanism might hang the process.

🕒Revision #76

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