

Information regarding Release

HiLCOS Software Version 10.12 RU12

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The **Hirschmann™** BAT Operating System

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1. Preface

HiLCOS is the operating system for the Hirschmann OpenBAT, BAT450, BAT450 11ac, BAT867 and BATWLC product. This document provides an overview of important information regarding HiLCOS software release 10.12 RU12.

If you like to update your device, please install the current LANtools-version first. **Prior to the firmware-upload, back up the access point configuration file.** After that, you start LANconfig and with the button “Firmware-Upload”, you load the new HiLCOS-version into your device.

Before upgrading the firmware, please pay close attention to chapter 3 of this document.

2. Supported Devices

You need the following files for these devices:

File	Device	Comment
HiLCOS-BAT-10.12.7389-RU12.upx	OpenBAT-R OpenBAT-F BAT450-F 11n	Firmware for BAT with 11n radios BAT450-FxxW...
HiLCOS-BAT867-10.12.7389-RU12.upx	BAT867-R, BAT867-F	-
HiLCOS-BAT450-10.12.7389-RU12.upx	BAT450-F 11ac	Firmware for BAT450-F with 11ac BAT450-Fxx5...
HiLCOS-BATWLC-10.12.7389-RU12.upx	BAT-Controller WLC25 BAT-Controller WLC50 BAT-Controller WLC100 BAT-Controller WLC200 BAT-Controller WLC500 BAT-Controller WLC1000	Firmware for WLAN controller

Revision information of earlier HiLCOS-versions is recorded in the Release Notes.

3. Important advice

Backing up the current configuration

Before upgrading your BAT devices to a new HiLCOS version it is essential to backup the configuration data!

Due to extensive features it is not possible to downgrade to a previous firmware without using the backup configuration.

If you want to upgrade devices which are only accessible via router connections or Wi-Fi bridges, please keep in mind to upgrade the remote device first and the local device afterwards.

Please see the HiLCOS reference manual for instructions on how to upgrade the firmware.

We strongly recommend updating productive systems only after internal tests in client environment.

Despite intense internal and external quality assurance procedures possibly not all risks can be eliminated by Hirschmann Automation and Control GmbH.

Upgrade to 10.12-RU9

HT and VHT transmission rates are set back to their default values when upgrading to 10.12 RU8 or later. Users can manually apply their settings again after the upgrade, which will then be preserved in future upgrades.

Syslog shall display it as below-

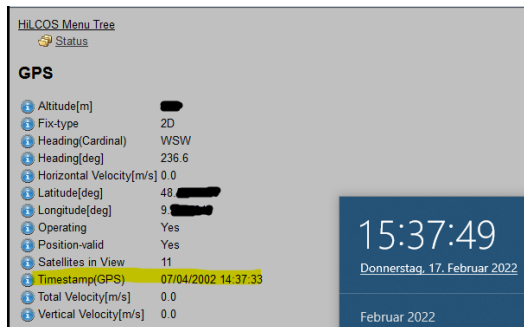
"Upgrading from 10.12 RU7 or lower version, HT/VHT rate config can't preserved and set to Default"

4. Instructions on fixing the GPS time week-number-rollover for the LTE module of the BAT450-F (BAT450-FXXW9LXX..)

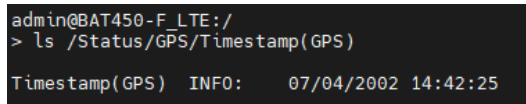
The GPS time week-number-rollover is a phenomenon that occurs approximately every 20 years. A counter overflow results in the GPS time being set back by 20 or 40 years. The fix described here is for the April 2019 occurrence.

1. The incorrect GPS time is visible as follows:

- In the graphical user interface WEBconfig with the corresponding IP address of the device:
<https://IP-ADDRESS/config/1/63/>



- In the Command Line Interface: `ls Status/GPS/Timestamp(GPS)`



For further details about the GPS settings, the graphical user interface WEBconfig or the Command Line Interface, please refer to the "User Manual Configuration Guide" and the "Reference Manual Command Line Interface (CLI)". The manuals are available for download on the Internet: <https://www.doc.hirschmann.com>

2. Fixing the issue

It is absolutely necessary to update HiLCOS to the recommended version first. Otherwise, the device may run in an inconsistent state that can only be resolved by a power cycle.

- Upgrade HiLCOS to either
 - 10.12-6710-RU9
 - 10.34-RU2
 - **or newer.**
- Upload the BAT450-LTE_GPS_rollover.upx

For further details about the firmware upload, please refer to the "User Manual Configuration Guide" and the "Reference Manual Command Line Interface (CLI)". The manuals are available for download on the Internet: <https://www.doc.hirschmann.com>.

3. Verifying the fix

The problem is solved with the first valid GPS timestamp (position-valid: yes). The timestamp shows the correct time.

- In the graphical user interface WEBconfig with the corresponding IP address of the device:
<https://IP-ADDRESS/config/1/63/>

GPS	
Altitude[m]	
Fix-type	2D
Heading(Cardinal)	N
Heading[deg]	0.0
Horizontal Velocity[m/s]	0.0
Latitude[deg]	48.2
Longitude[deg]	9.2
Operating	Yes
Position-valid	Yes
Satellites in View	14
Timestamp(GPS)	02/17/2022 15:36:45
Total Velocity[m/s]	0.0
Vertical Velocity[m/s]	0.0

16:36:46

Donnerstag, 17. Februar 2022

Februar 2022

- In the Command Line Interface: `ls Status/GPS/Timestamp(GPS)`

```
admin@BAT450-F_LTE:/  
> ls Status/GPS/Timestamp(GPS)  
  
Timestamp(GPS) INFO: 02/17/2022 15:37:52
```

5. Hirschmann Software Conditions

These Hirschmann Software Conditions constitute a legally-binding contract between Hirschmann Automation and Control GmbH, Stuttgarter Strasse 45-51, 72654 Neckartenzlingen (hereinafter referred to as "Hirschmann") and the Customer concerning the use of Hirschmann software products, i.e. machine-readable computer programs and associated files, whether in packaged form, or received electronically, and any modified version, upgrades, updates and other copies of such programs and files owned by Hirschmann as well as the associated media, printed materials and documentation in electronic format (hereinafter referred to as "**Software**"). Software shall include applications running as embedded software in a Hirschmann network infrastructure device (hereinafter referred to as the "**Embedded Software**").

By clicking the "I accept" button during the download or installation process or by using the Software in another way, the Customer agrees to all of the conditions of these Hirschmann Software Conditions. If the Customer does not agree to one of these Hirschmann Software Conditions, the Customer is not entitled to use the Software and is obliged to stop the download or installation process immediately and to return to Hirschmann or destroy all copies of the Software in the Customer's possession.

1. Definitions

"Customer"

A Customer for the purposes of this contract is a natural person who or a legal entity which agrees to these Hirschmann Software Conditions as stipulated above.

"Embedded Software"

Shall have the meaning ascribed to it above.

"Client-server Application"

A distributed application structure that partitions tasks or workloads between a service, called servers, and service requesters, called clients.

"Software"

Shall have the meaning ascribed to it above.

"Third party"

A third party for the purposes of this contract is a natural person who or a legal entity which receives Software deliveries from the Customer and not from Hirschmann. Apart from required acknowledgement of the third party to these Hirschmann Software Conditions, in the event of a transfer of the Software to a third party, agreement on the contract terms with the third party shall be incumbent upon the Customer, on its own responsibility.

2. Subject of the Contract

Pursuant to this contract, the Customer receives without time limit the right of use of the Software delivered to it on the hardware specified therefor, as well as the use of necessary literature and documentation. To the extent Embedded Software is concerned, the right of use granted under these Software Conditions is limited to use of the Hirschmann product, system or device specifically envisaged for this. The right of use is not exclusive and - insofar as nothing to the contrary arises from these Software Conditions - is not transferable.

To the extent that it is necessary and not otherwise agreed upon between the contractual partners, installation of the Software will be performed by the Customer on its own responsibility and in accordance with the installation instructions.

The selection of the Software and consultation regarding the applications intended by the Customer, and also instruction, training and other technical support of the Customer, are not a subject of this contract. They may be the subject of a separate contract. Without such agreement, only the Customer assumes the risk associated with the selection of programs and their suitability for the applications intended.

Hirschmann is liable in such an event only within the scope of sub-paragraph 10 of these Software Conditions.

3. Extent of Performance and Function

The extent of performance and function of the delivered programs is determined by the product descriptions valid at the time the contract is entered into.

4. Updates

Insofar as the Software is labelled or designated as an update, in order to use this, it is necessary to obtain a license for a product which is defined by Hirschmann as suitable for the update (hereinafter referred to as a "suitable product"). A Software product which is labelled as an update replaces and/or augments the starting product. The Customer may use the resulting updated product only in compliance with the provisions of these Software Conditions. Insofar as the Software is an update of a component of a software program package which the Customer has licensed as a unified product, the Software may be used only as part of that unified product package and may not be separated for use on more than one computer.

If the Software is a client-server application the client can be used on different hardware.

5. License Fees

Fees for the right of use of the delivered Software shall be agreed upon as a one-time license fee, plus the corresponding value-added tax as required by law. In the absence of a specific agreement to the contrary, the license fees for the Software provided are included as a once-off license fee in the purchase price of the products, systems or devices equipped with the Software.

6. Right of Use

The Software may only be used on one item of the hardware provided therefor. Any additional use of the Software on further hardware requires a separate agreement with Hirschmann and is only permissible after payment of the corresponding fee for right of use. Copies may only be made for archive purposes, as replacements, or for fault diagnosis. All rights to the Software (including documentation), especially the right of copying, distribution and translation, remain the rights of Hirschmann. The Customer must ensure that the Software and documentation are not accessible to third parties without Hirschmann's previous written permission. The copyright notice located on the original is to be affixed to all copies. The Customer may transfer the right of use of the Software to a third party (for instance, through a re-sale contract) only if the latter acknowledges these Hirschmann Software Conditions and the Customer proves to Hirschmann without being requested to do so that it has handed over to the third party, deleted, destroyed or otherwise made unusable all of the tangible and intangible copies of the Software (including all components, media and printed materials and all updates). If the Software to be transferred is an update, the proven transfer, deletion, destruction or deactivation must also encompass all of the previous versions of the Software. With the transfer, all rights of use of the Customer are cancelled, including the rights of any copies, which are to be transferred to the third party. The Customer may not transfer Software to a third party if there is a justifiable supposition that the third party might breach the conditions of the Hirschmann Software Conditions, especially that it might create unauthorized copies. This is also valid with regard to employees of the Customer.

The Customer is not entitled to grant sub-licenses concerning the Software to third parties.

In the event of a breach of the rights of use or upon a modification of the Software by the Customer, Hirschmann may withdraw the right of use from the Customer and - irrespective of other existing rights - demand the return or the destruction of the Software as well as that of any existing copies. The right of use of the Software may be terminated without notice by Hirschmann if a significant cause exists. A significant cause shall exist for Hirschmann especially if the Customer breaches the conditions of this contract and continues its actions in breach of contract, even though Hirschmann has warned it against such actions. The right of use is granted subject to the complete payment of the one-time license fee.

7. Proprietary Rights

With reservation of all rights of use granted under section 6, Hirschmann remains the proprietor of all rights, especially those of copyrighted exploitation rights, also those of copying, distribution and translation of the delivered programs, of the literature and documentation and similar items pertaining



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thereto, and of all complete or partial back-up copies made by the Customer within the scope of its use. If the program is delivered to the Customer only in machine code, then the Customer will not acquire access to the source code. The Customer is obligated to prevent unauthorized access by third parties to the Software, as well as to the documentation, by appropriate precautionary measures. Delivered original data carriers and back-up copies are to be maintained in a secure place to prevent unauthorized access by third parties. The Customer will instruct its employees in an appropriate manner concerning Hirschmann's proprietary rights.

8. Obligation to Inspect and Report Defects

The Customer is obliged to examine the delivered Software, including documentation, within 8 working days after delivery, especially with regard to data carriers and manuals, as well as to the operability of the basic program functions.

Defects which are thereby ascertained or ascertainable must be reported to Hirschmann without undue delay. The notification of defects must contain a best-efforts description in detail of the defects. Defects which are not ascertainable within the framework of the described and orderly examination must be reported within 8 working days after their discovery in compliance with the described defect requirements. Upon failure to fulfil the obligation to examine and inspect, the Software is considered as accepted with due regard for concerned defects.

9. Warranty

The Customer is aware that, in accordance with the state-of-the-art technology, it is not possible to produce a computer program which is completely free of errors. Hirschmann warrants that the programs delivered as Software will fulfil the functional and performance features which are contained in the valid product descriptions at the time of entry into the contract, or which are separately agreed to. Excepted from this are defects which represent only non-essential deviations from the respective valid product description. Hirschmann assumes no responsibility that the Software will run without interruption or error, that all Software errors can be eliminated by Hirschmann, and that the functions contained in the Software may be executed in all of the combinations selected by the Customer or that they correspond to its requirements. Hirschmann assumes the obligation to rectify Software errors which impair use in compliance with the contract and which are not of an immaterial nature, specifically at Hirschmann's selection and, depending on the significance of the error, by the delivery of improved software or through information regarding the elimination or through circumvention of the effects of the error.

The precondition for the rectification of errors is that the effects of the errors be reproducible, that they be adequately described by the Customer, and that the error be reported to Hirschmann within the term stipulated in section 8.

The warranty is excluded to the extent that the error is due to the Customer or a third party making modifications of any kind to the Software or data carriers or treating them in an improper manner.

Hirschmann warrants that the data carrier is free from material or manufacturing defects. Hirschmann will replace any defective data carriers with data carriers which are free of defects.

The Customer has the right to demand a reduction of the user's fee upon an unsuccessful replacement shipment, or to rescind the contract without cost. In the event of rescission, the Customer will return to Hirschmann any data carrier with the Software and documentation pertaining thereto or will destroy any existing copies.

For further claims, especially for compensation for damage which does not occur in the programs themselves, Hirschmann assumes liability pursuant to section 10.

10. Liability of the Licensor/Exclusion of Liability

Claims against Hirschmann as well as its employees or agents for compensation for damage, irrespective of the legal basis, are excluded, especially a claim for replacement of damage which does not occur to the Software itself.

This does not apply to the extent that Hirschmann is liable under mandatory law, e.g. in the case of (i) personal injury or damage to privately-used property pursuant to the German Product Liability Act, (ii) due to loss of life, personal injury or damage to health which is due to a negligent or intentional breach of duty by Hirschmann or one of Hirschmann's legal representatives or one of Hirschmann's vicarious agents, (iii) insofar as the cause of damage or loss is due to intentional behaviour or gross negligence



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by Hirschmann or a legal representative or a vicarious agent of Hirschmann, (iv) if the Customer asserts rights due to a deficiency under a quality guarantee or the particular duration of a quality, (v) Hirschmann negligently breaches a fundamental contract obligation whose fulfilment is what makes the due performance of the contract possible at all and on whose compliance the Customer may regularly rely (cardinal obligation), or (vi) claims for recourse in the purchase supply chain (§ 445a of the

German Civil Code (BGB)) are concerned.

Hirschmann is not liable for the replacement of data unless Hirschmann willfully or through gross negligence caused the data's destruction and the Customer has determined that that data can be reconstructed at reasonable cost from data material which is available in machine-readable form.

The provisions set out in these Software Conditions concerning the exclusion of liability (section 10) shall apply only if the Customer is a businessperson (§ 14 of the BGB), a legal entity under public law or a public-law special fund.

11. Statute of Limitation/Warranty Period

All claims directed against Hirschmann due to a quality defect or a defect in title become time-barred 12 months after the statutory warranty commencement, unless the German Product Liability Act or other legislation, particularly § 445b of the BGB (recourse claims in the purchase supply chain) prescribe longer periods. The period of limitations for claims based on liability for damage and loss arising out of loss of life, personal injury or damage to health which is due to a negligent or intentional breach of duty by Hirschmann or a legal representative or vicarious agent of Hirschmann, and for other damage and loss which is due to an intentional or grossly negligent breach of duty by Hirschmann or a legal representative or vicarious agent of Hirschmann, shall be determined in accordance with the statutory provisions.

12. Return of the Program

If the program delivered based on this contract is partially or wholly exchanged within the framework of the warranty performance, then the Customer is obligated to verifiably destroy the original of the program or to return it to Hirschmann.

13. Termination of the Contract

The Customer is able to terminate the contract at any time in whole or in part.

In the event of the termination of this contract, the Customer is obliged to return to Hirschmann or verifiably destroy the original as well as all copies and partial copies of the programs concerned and also modified copies of the pertinent programs associated with other software materials. This applies correspondingly for program documentation and other delivered literature. Retention of an archive copy for back-up reasons requires a separate, written agreement. The license fee paid - insofar as nothing to the contrary is agreed - will not be refunded.

14. Written Form

Supplementary agreements and modifications must be in written form. This applies also to a waiver of this written-form requirement.

15. Choice of Law, Legal Venue

The application of German law is hereby agreed. For any disputes which should arise as a result of the contractual relationship when the Customer is a fully-qualified merchant, a legal entity under public law or a special fund under public law, then the court at the place of Hirschmann's headquarters will have jurisdiction.

16. Partial Invalidity



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If a condition of this contract should be or become invalid, the validity of the remaining conditions shall not be affected thereby. In such an event, the invalid condition is to be understood, interpreted or replaced so that the economic purpose pursued through it is achieved.

17. Export

The Customer will comply with the German and American export regulations when exporting the Software.

6. Copyright of Integrated Software

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