

# RipEX - Release Notes

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Release version numbering - ver. 1.2.3.4 means:

- 1 - RipEX generation number.
- 2 - Update number (always accompanied by Release notes).
- 3 - Update sub-number (functionality unchanged, minor bug fixing, no Release notes).
- 4 - For internal use only (plus version). An official release always comes with 0 at this position. A 'Plus version' is released from time to time for special reasons (e.g. for testing an upcoming feature in advance). Plus release should not be used, except in the interim, all features are not 100% tested and its compatibility with older or newer fw versions is not guaranteed.

## Release 1.9.x.0

2021-07-23

- Warning:
  - If upgrading via Web or CLI interface from an original FW version lower than 1.5.1.0 it is necessary to upgrade to one of FW versions 1.5.1.0 - 1.5.7.0 prior to installing FW version 1.6.x.x or higher. Upgrading using a USB flash drive does not require this extra step.
- Major features:
  - Partially responsive Web interface
- Fixed bugs:
  - RDS protocol minor issues
  - IP optimization various fixes
  - NTP fixed
  - Serial port driver unwanted splitting of long frames
  - iPhone users were unable to upload firmware files via Web interface
  - Accidental deleting of Backup routes during Routing table updates
  - Backup routes usage together with Hot-standby configuration
  - Occasional occurrence of DQ=0 in monitoring fixed
  - Format of SNMP trap triggered by Alarm input fixed
  - Flexible protocol ACK message – channel access calculation fixed
  - Base driven - remote unit Status – modulation rate label fixed
- Miscellaneous:
  - Security related updates:
    - New versions of OpenSSL, IPsec and NTP libraries
  - Default RF power value changed to 0.1 W
  - New Flexible protocol parameter added: maximum distance of remote unit

## Release 1.8.x.0

2018-03-19

- Warning:
  - If upgrading via Web or CLI interface from an original FW version lower than 1.5.1.0 it is necessary to upgrade to one of FW versions 1.5.1.0 - 1.5.7.0 prior to installing FW version 1.6.x.x or higher. Upgrading using a USB flash drive does not require this extra step.
- Major features:
  - Nomadic mode

Flexible protocol is extended by a new Nomadic mode which is a method of building a network that offers easy addition of a new 'Nomadic Remote' station to the radio network or easy transfer of 'Nomadic Remote' stations within the network coverage of 'Nomadic Base' stations.

- NAT  
Network address translation, also referred to as NAPT (Network Address and Port Translation) is a technique in which private Internet Protocol (IP) addresses and port numbers are mapped from multiple internal hosts to one public IP address. Source NAT (SNAT) and Destination NAT (DNAT) were implemented. Ideal when all RTU's have the same IP address.
- QoS  
Quality of Service (QoS) is an advanced feature that allows the user to prioritize certain types of traffic stream over the Radio interface. Used to manage transmission of different traffic streams.
- Additional Enhancements:
  - CLI command set is expanded to support Nomadic mode, NAT, QoS, Routing and Backup routes
- Fixed bugs:
  - Backup routes
    - Default gateway did not function properly if it was used together with IPsec and/or NAT
    - Alternative path default settings are now displayed correctly
  - SNMP multiple Notification destinations can now be configured in any order. Previous version did not function properly if the first line item was not completed.
- Miscellaneous:
  - Security related updates:
    - New versions of ssl libraries
    - Web server ciphers containing RSA algorithm are now disabled to protect from "ROBOT" type security breaches in HTTPS (TLS library)
    - New version of IPsec libraries
    - New version of other components (SSH, sudo, zlib, tcpdump, NTP)
  - Text file containing backup configuration can now have any filename extension.
  - MIB table is updated to reflect new parameters - Nomadic mode, NAT and QoS
  - FW upgrade web interface dialog now also allows selection of non standard (.cpio) filename extension. Internal checks still used to confirm the validity of the uploaded file

## Release 1.7.x.0

2017-08-16

- Warning:
  - If upgrading via Web or CLI interface from an original FW version lower than 1.5.1.0 it is necessary to upgrade to one of FW versions 1.5.1.0 - 1.5.7.0 prior to installing FW version 1.6.x.x or higher. Upgrading using a USB flash drive does not require this extra step.
- Major features:
  - IPsec  
Internet Protocol Security is a network protocol suite that authenticates and encrypts the packets of data sent over a network. IPsec supports networklevel peer authentication, data-origin authentication, data integrity, data confidentiality (encryption), and replay protection. IPsec is an end-to-end security scheme operating in the Internet Layer of the Internet Protocol Suite.
  - GRE  
Generic Routing Encapsulation is a tunneling protocol that can encapsulate a wide variety of network layer protocols inside virtual point-to-point links over an Internet Protocol network.
  - SNMP Inform  
Only SNMP Trap was available in previous version of the FW. It is now possible to set SNMP Notification type: Trap, Inform or Off. The Inform frames are acknowledged and repeated if lost.
  - SNMP v3

It is now possible to select between SNMP v3, v2c, v1. Using SNMP v3, it is now possible to set Security User name and Security level.

- Guest account  
There are now 2 types of management account in RipEX: 'admin' and 'guest'. Guest has read-only privileges to protect against security risks and or unintentional configuration changes.
- Additional Enhancements:
  - RDS protocol  
RDS is a proprietary serial SCADA developed by RACOM and often used in MRxxx networks.
- Fixed bugs:
  - SNMP
    - ETH interface speed value (eSpeed) was not correct
    - Indexed items were not returned correctly when accessed by 'snmpget'
    - Sub-tree was not returned correctly when traced by 'snmpwalk'
    - 'snmpwalk' did not work correctly when accessing large tables
    - 'snmpget' and 'snmpgetnext' returned previous OID in certain circumstances
    - Dynamic items (for example Statistic) could not be accessed in certain circumstances
  - Sorting of multiple records in the Neighbours and Statistic tables did not function fully
  - Service messages were transmitted from the COM1 port during power up cycle
  - Radio data error graph displayed current values instead of average values
  - RSS ping did not operate when AES encryption was enabled
- Miscellaneous:
  - Security related updates:
    - Web servers cipher 3DES has been disabled due to it's weak algorithm
    - New versions of ssl libraries
  - New versions of NTP and tcpdump utilities
  - Drivers for the new version of the ETH/USB adapter have been added
  - Modbus RTU port protocol in Slave mode is capable of resending frames until acknowledged

## Release 1.6.x.0

2016-10-27

- Warning:
- If upgrading via Web or CLI interface from an original FW version lower than 1.5.1.0 it is necessary to upgrade to one of FW versions 1.5.1.0 - 1.5.7.0 prior to installing FW version 1.6.x.x or higher. Upgrading using a USB flash drive does not require this extra step.
- Major features:
  - Base Driven protocol  
Brand new protocol on Radio channel optimized for TCP/IP applications like IEC104 making them reliable and stable even with a high number of RTU's. Designed for Star topology with possibility of repeaters. Also suitable for collision networks when a remote is not be heard by other remotes and/or different Rx and Tx frequencies are used.
  - Individual radio links setup  
Original Radio protocol is called 'Flexible' now. It is also now possible to setup different modulations (data speeds) and other Radio protocol parameters for individual radio links from each radio modem.
  - PR 2000  
New SCADA serial protocol used mainly by Proteus RTU's implemented.
  - UNI protocol migration support  
HW contact for 'Carrier On' legacy base station transmissions supported by new 'CTS Envelope' parameter. This function makes it possible to use the CTS signal to control radio transmission in Base station in legacy radio networks where HW contact for 'Carrier On' (PTT) is required.
  - Security updates

System security libraries like e.g. OpenSSL were updated.

RSA key for SSH is now 2048 bits long.

Password for management access can be up to 32 characters long (it used to be 16 char.).

Technical support package no longer contains AES and Remote access keys.

When the "Physical security" mode is enabled, the Reset button on RipEX bottom-side performs "Total purge" and not 'Reset the device's access information to default'. It is then not possible to enable unauthorized access to the RipEX unit.

- Next Enhancements:

- Unit IP

- IP management access address (typically RipEX Ethernet IP) and respective menu item are permanently visible in Web browser Page title. It is very useful when a few units are configured simultaneously within individual tabs.

- Unit name

- It is possible to assign up to 32 characters instead of 16 for Unit name.

- SNMP

- There is OID according RFC1157 in SNMP replies generated by RipEX.

- VSWR

- Calculation algorithm improved for limit values.

- Fixed bugs:

- Bridge – Stream mode

- This mode didn't work properly when FEC was On. The first data block was OK, the following data blocks were cut.

- Bridge – very low signals

- In specific circumstances when CRC of packet header was not correct and packet length in sub-header of physical layer was also not correct, Radio protocol has been restarted.

- Booting

- System boot up sequence didn't operate correctly when excessive number of IP routing rules in Routing table were configured.

- Modbus protocol

- When Modbus packet was shorter than 5 Bytes, it was discarded. But shorter packets (4 Bytes) may occur for function 0x07.

- When Modbus TCP packet has got function 0x07 and length just 8 Bytes, it was discarded. All the other packets were OK.

- Miscellaneous:

- Web interface changes

- Because of Base Driven protocol implementation, some changes in configuration items have been made:

- Operation mode – now only List box, Bridge, Router.

- Radio protocol – new item in Radio parameters. Items from original Operation mode and FEC have been moved here.

- Neighbours/Statistics

- There used source/destination IP address from packet net layer header in Neighbours and Statistic tables displayed. Now Radio IP is used. When Radio IP is not known, Radio MAC is displayed.

- Compatibility:

- Fully compatible with version 1.1.1.0 and higher

## Release 1.5.x.0

2015-11-12

- Major features:

- Radio protocol improvements

Existing anti-collision algorithm has been improved, the total network throughput in heavy-collision environment is much higher now.

There are new parameters (Settings/Operating mode/Advance settings) in order to optimize Radio protocol settings for individual applications. For details read Settings/Device/Help.

- Security

Physical security – the device management can be now physically secured (Settings/Management). When “On”, the external flash disc use is disabled (It is not possible to download or upload the configuration automatically). When the HW reset button is pressed, the “Total purge” instead of “Factory settings” is applied. Total purge sets the very same settings as when the device is delivered from the factory, i.e. the Factory settings are set and in addition also all logs, statistics, archives, passwords, security keys etc. are deleted. Total purge can also be performed from the Maintenance/Configuration menu.

Remote access keys – there is a secured communication on Radio channel while using “Fast remote access” using a modified ssh protocol. It is possible to set own security keys for this communication now (Maintenance/Remote access keys).

- RSS sample

It is possible to read the actual value of RSS on Radio channel now (Maintenance/Miscellaneous). This could be used e.g. to find out a continuous interference (increased level of background noise) on Radio channel.

- Backup routes & HW alarm output

It is possible now to inform connected device via HW alarm output that any alternative path is used.

## Release 1.4.x.0

2014-02-05

- Major features:

- 166 kbps / 50 kHz

50 kHz channel spacing is now available.

There are different data rates provided to comply with different regulations. The maximum possible RF Data rate is 166 kbps.

Note: The 50 kHz channel spacing is HW dependent, it is available only in units with the Radio HW version higher than 1.1.90.0 or 1.2.50.0. (See the Status page). Units with older version boards will be in production for some time. When the 50 kHz is required, remember to specify it in the order, please.

- WiFi management

A WiFi adapter plugged into the USB port enables RipEX management over WiFi. It means that any smart phone, tablet or notebook can be used as a RipEX portable display now. The WPA2-PSK security is supported.

- Next Enhancements:

- Firewall

Layer 2 (MAC filtering) has been added to the existing Layer 3 (IP) in the Firewall.

- HTTP

Together with the existing HTTPS it is possible to access the RipEX web configuration pages via the plain HTTP protocol now. It is also possible to enable/disable management over the Web and/or the CLI completely. (Settings/Device/Management)

- Flash disc

Together with FW and SW keys it is possible to automatically upload also the unit configuration, the ssl certificate and ssh key(s). Moreover, when a USB flash disc is plugged in, the Unit configuration and the Technical support package are automatically saved on it.

- Unit ready

The Unit ready information has been added into the Alarm management. RipEX is now capable of providing information that it is booted and ready via an SNMP Trap or at the HW Alarm Output. The Unit ready status can also be read anytime over the SNMP.

- Save mode  
When the unit is in the Save mode, it is possible to wake it up also via a digital input. (The SI pin on the Power and control connector).
- Radio protocol improvements  
There are new Advance parameters available for Radio protocol improvements. (Settings/Device/Operating mode). For details read Settings/Device/Help.
- Optimization  
A new type of compression, a "stream" compression, has been added into the Optimization. It is very effective for data streams consisting of similar packets. E.g. when there are many remotes behind a single repeater, packets on the most loaded hop between the repeater and the central unit get very efficiently compressed.
- Monitoring
  1. RSS and DQ of packets monitored on the Radio channel is now displayed in the monitoring output.
  2. It is possible to hide corrupted packets when monitoring the Radio channel.
  3. The "Include reverse" check-box has been added to the Filter for the IP packets monitoring. When ticked, packets defined by IP src (or IP dst) and Port src (or Port dst) values will be displayed in both directions, i.e. the address/port pair applies to both "src" and "dst".
- Fixed bugs:
  - C24 protocol  
When Protocol frames = 1C and Frames format = Format1, Local ACK = Off, ACK packets were discarded.
  - Cactus protocol  
The Master/Slave Mode of the connected device was interpreted by its opposite: the Master behaved as the Slave and vice versa.
  - RP570 protocol  
When Mode of the connected device = Slave and Local simulation RB = On, RB commands were not transferred to the destination.
  - DF1 protocol
    1. There was a problem in CRC Block Control Mode depending on the 0x10 byte (ESC) presence in the CRC: when there was a sequence of packets without the ESC in CRC, every second packet was discarded. A packet with the ESC byte in CRC passed through correctly, as well as the next one.
    2. Advance parameters / ACK Locally. The value selected was interpreted by its opposite: The "On" behaved as "Off" and vice versa.
  - Siemens 3964R protocol  
There was a problem with escape sequence (0x10) implementation:
    1. T Escape sequences were not included in packets transmitted from RipEX via COM
    2. When BCC = On and when the packet received via COM or a Terminal server had BCC = 0x10, it was discarded.
  - IEC101 protocol  
When Advanced parameters / Address mode = 2B, broadcast address had been taken only from one byte (mask 0x00FF).
  - Log save period  
When Neighbours & Statistic Parameters were in Default, the Neighbours & Statistic log save period was not Default (1440 min.), but according to the Manual settings.
- Miscellaneous:
  - When the Reset button is pressed, the Default access parameters are set as follows:  
ETH IP and Mask: 192.168.169.169/24

ETH Default GW: 0.0.0.0  
 DHCP: Off  
 ETH Speed: Auto  
 ARP proxy &  
 VLAN: Off  
 Firewall: Off  
 Hot Standby: Off  
 Routing table: Deleted  
 Management: Default (Web server=HTTP+HTTPS, CLI=SSH)  
 Username: admin  
 Password: admin

- The SW feature key 83 kbps has been renamed to 166/83 kbps. The two highest rates for 25 and 50 kHz channel spacing are available only when either the 166/83 kbps key or the Master key is active.
- Compatibility:
  - Fully compatible with version 1.1.1.0 and higher
  - Upgrade – the standard procedure while upgrading from versions 1.1.x.x or 1.2.x.x or 1.3.x.x. For upgrades from earlier versions see 1.1.x.0 release notes.
  - Downgrade is possible down to 1.2.1.0 version. Following a downgrade, the whole configuration is reset to factory settings (default values).

## Release 1.3.x.0

2013-04-22

- Major features:
  - Backup routes, TCP proxy, ARP proxy & VLAN, automatic FW and SW keys upgrade from USB flash disk, SLIP and Siemens 3964(R) protocols.
- Compatibility:
  - Fully compatible with version 1.1.1.0 and higher.
  - Upgrade – standard procedure while upgrading from versions 1.1.x.x or 1.2.x.x. For upgrades from earlier versions see 1.1.x.0 release notes.
  - Downgrade is possible up to 1.2.1.0 version. When downgrade, the whole configuration is set to factory settings (default values).
- New features explained:
  - *Backup routes*<sup>1</sup> (Routing)  
RipEX is capable of testing the path between two RipEX IP addresses (even logically behind repeater or LAN). When the connection fails, RipEX automatically uses defined alternative prioritized gateways. Alternative path functionality can be permanently tested, thus switching only to a fully reliable path when the given path fails.
  - *TCP proxy*<sup>2</sup> (Settings/Device/ETH)  
Converts the TCP protocol into UDP, i.e. TCP is established, handled and terminated only locally between RipEX and its connected device, only payload (user) data are transferred further as UDP. It saves valuable bandwidth on the Radio channel and typically solves problems with TCP timeouts.
  - *ARP proxy & VLAN*<sup>3</sup> (Settings/Device/ETH)  
ARP proxy is typically used when RTU addresses behind different RipEX units need to be within the same IP subnet and RTUs do not have routing capabilities. Using ARP proxy, RipEX can mimic any IP address (it can reply to any ARP request).

<sup>1</sup> [https://www.racom.eu/eng/products/radio-modem-ripex.html#features\\_backup](https://www.racom.eu/eng/products/radio-modem-ripex.html#features_backup)

<sup>2</sup> [https://www.racom.eu/eng/products/radio-modem-ripex.html#features\\_ethernet](https://www.racom.eu/eng/products/radio-modem-ripex.html#features_ethernet)

<sup>3</sup> [https://www.racom.eu/eng/products/radio-modem-ripex.html#features\\_ethernet](https://www.racom.eu/eng/products/radio-modem-ripex.html#features_ethernet)

- VLAN - it is now possible to set unlimited number of VLAN's as well as Subnets (more IP aliases) on Ethernet interface.
- USB flash disk automatic FW and SW keys upgrade When a USB flash disk with the respective files is inserted, FW and SW keys are automatically uploaded without connecting via any computer.
- Serial SCADA - SLIP and Siemens 3964(R) are newly implemented.
- 'SNMP settings' is now an independent configuration item in Settings/Device/ETH. It is now also possible to configure the community name, two independent IP destinations and ports for SNMP traps. The *MIB table*<sup>4</sup> has also been significantly upgraded with new items for new features. It meets Severity level 3.
- RF transmission test (Maintenance)  
Carrier transmission can be set for defined period (intended for laboratory measurements or antenna testing).
- SSL certificate  
User SSL certificate can be uploaded into RipEX as a file. 2048, 1024, 512 bit certificates are supported.
- SW feature key can be uploaded as a file.
- Emergency status  
Emergency status is a RipEX status caused by an undefined SW or a HW problem when RipEX does not function properly. It is indicated on the LED panel – Status LED flashes quickly in red (5 times / sec.). The maintenance web page is usually accessible even during Emergency status so that the unit can be reset. If the problem does not disappear after a power cycle, send the unit to RACOM for repair.
- Should radio board temperature exceed 95°C (203°F), transmitting is blocked. When transmit is blocked, this is displayed in Monitoring (Radio).
- In the Hot Standby mode, Temperature alarm for switch-over to the backup unit (HW alarm output) cannot be set. It is internally set to active, if the radio board temperature exceeds 95°C (203°F).
- Bug fixes:
  - All known issues from releases 1.2.x.0 are resolved.
  - Serial SCADA protocols/Master/Address translation – when a 2-byte address was used (DNP3 or UNI) with an interval in the translation table, a misinterpretation could have occurred.
  - When the max. packet size of 1600 bytes (MRU) had been received on COM, the unit went into an indeterminate status and had to be rebooted.
  - When a packet with size bigger than 1472 bytes was received on COM or Terminal servers TS1-TS5 or Modbus TCP, only 1472 bytes were processed. 1600 bytes are now processed correctly, as per specification.
  - ITT Flygt protocol. The mode of a connected device was not being processed correctly.
  - IEC 101 protocol. When set to Slave, it was not possible to set Address mode in Advanced parameters.
  - Log save period in Neighbours and Statistic is displayed correctly now.
  - When power voltage was lower than 13 V or RF power was higher than 5 W, the measurement did not work properly.
  - SNMP trap is sent both when a parameter value exceeds the alarm threshold and when it returns back within its “normal” range. It was sent only when value exceeded the alarm threshold.
  - Status LED did not indicate Alarm. It is fixed now: green = no alarm, red = alarm.
- Other:
  - When the Reset button is utilized, Default access parameters are set as follows:  
ETH IP and Mask: 192.168.169.169/24  
ETH Default GW: 0.0.0.0  
ETH Speed: Auto  
ARP proxy & VLAN: Off  
Firewall: Off

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<sup>4</sup> <https://www.racom.eu/eng/products/m/ripex/app/snmp/index.html#MIB>

Hot Standby: Off  
 Routing table: Deleted  
 Web interface: On (Can be disabled form CLI only)  
 Username: admin  
 Password: admin

- When SNMP is configured using Fast remote access and older FW version is in remote unit, all items including even those that are not in the older FW version have to be filled in. Even if they don't apply to the remote unit, the local web requires all to be filled in, otherwise the page can't be saved.
- The Edit button is deleted in all configuration tables. When you now click on any item, the line can be edited. To finish editing, click on the top or bottom of the table, or on OK.
- In the Routing table the Interface column has been removed. It is always Auto, i.e. Radio IP subnet cannot overlap with any subnet defined on Ethernet or SLIP.
- There are some minor changes and improvements in the Save and Sleep modes, read the *respective help*<sup>5</sup>.
- When Hot Standby is On and the Operating mode is Bridge, switch-over time is 1-2 sec. now (It used to be 30 sec.). However this is still kept at 30 sec. (forward delay) for new counterparts in the network.

## Release 1.2.x.0

2012-06-01

- Major features:
  - This release supports RipEX-HS, redundant Hot Standby unit.
- Compatibility:
  - Fully compatible with version 1.1.1.0 and higher.
  - Upgrade – standard procedure while upgrading from versions 1.1.x.0. For upgrades from earlier versions see 1.1.x.0 release notes.
  - Downgrade from version 1.2.1.0 to earlier versions is not possible. However downgrade from future versions to 1.2.1.0 will be possible. Only when some configuration items are to be added/deleted, the whole configuration will be set to its default values.
- New features explained:
  - Hot Standby parameter in Settings/Device has been added.
  - Protocol address length can be 2 bytes for DNP3 and UNI protocols when Table is used for Address translation. (Settings/COM's/Protocol or Settings/ETH/Terminal servers/Protocol in Router mode). Valid from 1.2.5.0.
  - When Reset button on bottom side is pressed to set the access information of the device to default, Hot standby settings are also set to Off (its default value) among others.
  - Save mode - HW wake-up.  
 When in Save mode, RipEX could only be woken up by a packet from the Radio channel. With the current version, you can take RipEX in Save mode, cycle the power and during boot-up (approx. 25 sec.) LED Status starts to blink for approx. 10 sec. When Reset button is pressed for approx. 1 sec. during this blinking, Power supply mode is set to Always On and the unit can be accessed in the usual way (Ethernet or "X5" USB/ETH adapter).
- Bug fixes:
  - Web page is correctly refreshed when "Restore" or "Upload" on Maintenance page is clicked.
  - RP570 protocol - Local simulation RB is possible to switch On now. Broadcast packets are supported.
  - "VSWR" (Neighbours) could be in specific cases lower than "1" even though valid values are between 1.0 and 25.0. This is now corrected.

<sup>5</sup> <https://www.racom.eu/eng/products/m/ripex/h-menu.html#h-power>

- "Ucc" (Neighbours) displayed incorrect value (25.6V lower) when supply voltage was above 25.5V. This is now corrected.
- Even when the "Length [bytes]" for "ETH" interface in Monitoring was set to "0", data length value of 68 bytes was displayed. This is now corrected.
- Other:
  - In accordance with the latest findings, Modulation rate menu has been updated. However all Modulation rates are fully compatible.
  - DHCP for "X5" USB/ETH adapter can now handle up to five connected devices with different MAC addresses (it used to be only two). Lease timeout is now 1 hour (it used to be 24 hours). All leases are also deleted when "X5" USB/ETH adapter is disconnected (and connected again) or when RipEX is rebooted.
  - When the values of RSS, DQ, Ucc, Temp, PWR, VSWR are not known, N/A is displayed (it used to be "0"). These N/A values are not displayed in Graphs.
  - Ucc, Temp, PWR, VSWR are now refreshed every 1s (it used to be 15s). The other values in both, Neighbours and Statistic tables are refreshed every 20s (remains the same).
  - "ENERGO" has been renamed to "TELEGYR" in IEC101 protocol (Settings/Protocol/Advanced parameters/Address mode).
- Known issues:
  - There is a problem with the Protocol configuration in Settings/COM's/Protocol or Settings/ETH/Terminal servers/Protocol in Router mode. When Address translation is set to Table and Decimal format for Protocol address is selected, do not use the Cancel button nor close the pop-up window using „Cross“. If you do that, values in Translation table are randomly changed not only for this specific interface, but for all interfaces. When Hex format is selected, everything works fine. Solution – use Hex format. When Dec format is used, use only OK button to close the pop-up window.
  - Save mode – when RipEX is in transition from active to Save mode and it receives a packet which should wake it up during this transient time (2-5 seconds), RipEX is not woken-up, but it goes into an indeterminate status. In such a case, the completion of "going down" procedure (i.e. start of the Save mode) takes approx. 10 sec. When the next "wake-up" packet is received during this indeterminate status, the situation repeats, i.e. another 10 sec. of indeterminate status from packet reception. So there is a danger of cycle, when RipEX is neither in Active nor in Save mode.

## Release 1.1.x.0

2012-01-26

- Major features:
  - From 1.1.2012, PoE is not supported.
  - **This release is not compatible with any previous version, mainly in terms of the Radio channel protocol and configurations. It is strongly recommended to upgrade all RipEXes to this version, since the previous versions will not be maintained.**
- Update procedure:
  - The update to 1.1.4.0. is a non-standard procedure, valid for this version only. Future updates and upgrades will be possible according to the procedure described in the manual, including a remote update (upgrade).
  - It is not possible to upgrade units to this version remotely.
  - Connect your PC locally either via ETH or USB (using the X5 - ETH/USB adapter), go to the Maintenance page and follow instructions in the on-line help as follows: Upload fw file(s) to the Archive and then press the Archive to Active button.
  - Press the Factory settings button on Maintenance page. (We are sorry, configuration structures could not be kept compatible).
  - Since the RipEX is in Factory settings, configure your RipEX again.

- Note that a downgrade from 1.1.4.0 to any previous version is not possible (and not recommended). If you really need a downgrade, it may be necessary to ship the unit(s) to RACOM. Please contact the RACOM technical support first.
- New features explained:
  - Monitoring - a brand new on-line diagnostic tool, which enables a detailed analysis of communication over any of the interfaces of a RipEX router. In addition to all the physical interfaces (RADIO, ETH, COM1, COM2), some internal interfaces between software modules can be monitored when such advanced diagnostics is needed. For more info refer to the on-line help. The monitoring output can be viewed on-line or saved to a file in the RipEX (e.g. a remote RipEX) and downloaded later.
  - Terminal servers can also be used in the Bridge mode.
  - Terminal servers support application IP port dynamical changes.
  - RACOM ping report displays also the Data quality mdev (mean deviation).
  - When the Operating mode is changed, Statistic & Neighbours logs are saved and started for the new period.
  - Maintenance/Firmware/SW feature keys - the status of all feature keys is displayed. The Hold button enables to deactivate a time limited key for some period and the Activate button activates it again.
  - Maintenance/Firmware/Archive to Active - a new list box. Active firmware can be substituted by the Archive firmware. Either "All" or only "Only the different" versions can be replaced.
  - Maintenance/Configuration/Factory settings - when executed, also the Statistic & Neighbours logs and Graphs are cleared.
  - The Default button sets also the Ethernet speed to Auto now.
  - Settings/Radio/Modulation rate - only the highest rates for the respective modulation can be set from the web interface. The lower rates can be set from the CLI only.
  - Serial SCADA protocols
    - IEC101 now supports a special Address mode (Advanced parameters) for "IEC 101", "2B ADDR", "ENERGO", "SINAUT". More info can be found in the on-line help.
    - UNI - new Address mode options Binary (2B LSB first) and Binary (2B MSB first) have been added, featuring the Address mask which can be applied in these modes. New "Poll response control" parameter. More info in the on-line help.
    - New protocols implemented - RP570, C24 Melsec, ITT Flygt, Cactus.
- Bug fixes:
  - Serial SCADA protocols handle broadcasts correctly (according their settings) now. Serial protocol broadcasts can be also repeated according the Operating mode/Router mode/Repeat COM Broadcast setting.
  - Save mode - in the Router mode the unit wakes up only when it receives a packet where the IP destination equals either the Radio or Ethernet IP address. (any packet waked up the unit in previous versions). In the Bridge mode any packet (even an ARP) wakes up the unit.
  - The HW alarm input is fully functional now.
  - RF power measurement accuracy has been improved.
  - Statistic & Neighbours logs - ETH statistic is cleared when the log is saved or the Difference Clear button is executed.
  - Settings/Alarm management - when the "Default" item was selected in the Threshold listbox, all Alarms have been Off regardless of their respective tickboxes settings. This has been fixed.
  - The RACOM ping report now includes information about packets being forwarded by a repeater also in the Bridge mode.

## Release 1.0.4.0 - 1.0.10.0

2011-09-27

- Only small changes and bug fixing, nothing significant. All versions fully compatible.

### **Release 1.0.3.0**

2011-05-10

- The first released version.