

# Information regarding

## LCOS Software Release 8.60 RU1

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## 1. Preface

LCOS („LANCOM Operating System“) is the operating system for all LANCOM routers, wireless LAN access points and WLAN controllers. In the context of the hardware given by the products the at a time latest LCOS version is available for all LANCOM products and is available free of charge for download from LANCOM Systems.

This document describes the innovations within LCOS software release 8.60 RU1, as well as the changes since release 8.50

### **Warning hints – Backing up the current configuration**

Before upgrading your device to a new LCOS version it is **essential** to backup the configuration of your router. Due to extensive features it is **not possible to downgrade** to a previous firmware without using the backup configuration.

Please see the reference manual for instructions on how to backup the router configuration.

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

### **Warning hint – LCOS upgrade for devices LANCOM OAP/IAP-321-(3G) and LANCOM 1780EW-3G**

Some of the current LANCOM WLAN routers and access points with LCOS 8.5 or earlier, which are to receive new firmware or extensive new configurations over the wireless LAN interface, may under certain circumstances suffer from WLAN connection loss. The result of this error is that the wireless link is interrupted and, in the worst case —such as with an outdoor point-to-point link— the device may lose contact completely. In this case, re-establishing the radio link would require a manual restart of the remote device by pressing the reset button. To prevent this we recommend to configure an [alive test](#) before uploading a new firmware.

### **Note – Upgrading central site components**

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 LANCOM Systems.

### **Note – Using converter firmwares**

You will need enough free memory to use a firmware 6.0 and newer in your LANCOM 15x1, 1611+, 821+ and DSL/I-10+ and LCOS 8.0 in a LANCOM XAC or LANCOM 1823 VoIP.

Due to the implementation of several new features within the current build of the firmware, it is no longer possible to store two main firmware versions side by side. To gain more free space for the current version, it is now necessary to upload a converter firmware into your device. The converter-firmware has a much smaller size, so that it is now possible to store the main release of the firmware besides the converter-firmware.

This setup is only necessary once for a single device and is done with the so-called converter-firmware (see readme.pdf of the affected devices).

After having flashed the converter-firmware the firmsave function of the LANCOM device is available only on a limited scale. The update to a newer firmware is furthermore possible. However, in case of an update failure the LANCOM will only work with a minimal-firmware which allows just local access to the device. Any extended functionality, in particular remote administration, is not possible when running the minimal-firmware.

#### Note – Dynamic VPN registration

By reason of patent you have to register the functionality „Dynamic VPN“ with IP address transmission over ISDN. This operating mode is usually required when you configure a VPN tunnel with dynamic IP addresses on both sides without dynamic DNS services.

Any other Dynamic VPN operation mode (e.g. transmitting the IP address via ICMP, provoking a callback etc.) does not require registration.

The registration process is fully anonymous - no personal or company data will be transmitted.

The registration of the Dynamic VPN option requires administrator rights on the LANCOM device.

#### Note – Using VoIP options

VoIP options for LANCOM 1821 Wireless ADSL are discontinued with LCOS 7.20. The final version containing the VoIP Call Manager is LCOS 6.32.

As from LCOS 7.5x support for VoIP options for the devices LANCOM 1511 Wireless DSL and 1521 Wireless ADSL is discontinued. The final version containing the VoIP Call Manager is LCOS 7.30.

For the „VoIP ready“ routers LANCOM 1711 VPN, 1721 VPN and 1811 Wireless DSL support for the subsequently installed VoIP option will be discontinued with LCOS version 7.56. If you want to continue using your VoIP option, please do only use LCOS versions up to and including 7.54.

For T-Systems Business LAN R800+ VoIP functionality is discontinued in LCOS 7.60

LCOS 7.70 is the final version supporting VoIP options for the remaining „VoIP ready“ devices.

#### Note – Device specific support of the current LCOS version

As from LCOS 8.50 support for the following devices is discontinued:

- LANCOM 1811 Wireless
- LANCOM 1721 VPN

For the following devices the additional, LANconfig-like WEBconfig view is removed as from LCOS 8.60:

- LANCOM L-310
- LANCOM L-305
- LANCOM L-54dual
- T-Systems Business LAN R800+

Please use instead either LANconfig or use the configuration view “LCOS Menu Tree” in WEBconfig

## **2. Known Issues**

Latest support notes and known issues regarding the current LCOS version can be found in the download area of our website <http://www.lancom-systems.eu/Common-Support-Hints.64.0.html>

### 3. New Features, Changes and History

#### **LCOS changes 8.60.0189 Release ► 8.60.0194 RU1**

##### **Bugfixes / Changes:**

##### **Network Connectivity:**

- The DNS forwarder works again, even with disabled DNS module
- Script up- and downloads via HTTP(S) can be used again

#### **LCOS changes 8.60.0169 RC3 ► 8.60.0189 Release**

##### **Bugfixes / Changes:**

##### **WLAN:**

- The WLAN interfaces of the LANCOM IAP-321-3G and OAP-321-3G are no longer managed by a WLC by default

##### **VoIP:**

- SIP-ALG can now be used with all designated devices

##### **Network Connectivity:**

- Improvements in UMTS throughput
- A LANCOM router can be configured from LAN using its WAN address even if the content filter is active
- Corrected status display for the mobile radio interface
- The LANCOM 1721+ MIB can be loaded into MIB browsers again
- xAUTH connections which are authenticated via RADIUS are no longer limited to 250 negotiations
- The interface column of the TCP network table was enlarged for complete WLC tunnel specification

## **LCOS changes 8.60.0134 RC2 ► 8.60.0169 RC3**

### **New Features:**

#### **WLAN:**

- The new rate adopt mechanism „Minstrel“ is now activated by default

### **Bugfixes / Changes:**

#### **WLAN:**

- A user-dependent volume restriction specified in the Public Spot wizard is now saved to the configuration in the correct unit
- iOS devices can authenticate to a LANCOM Public Spot without error

#### **VoIP:**

- After a Re-Invite no codec is used which was not previously offered as possible codec
- SIP clients authenticated from WAN can do outgoing calls again

### **Network Connectivity:**

- A UMTS dial-in with a LANCOM 178XX-3G via private APN is now possible
- Using RSA keys bigger than 2k for an SSH session does not lead to an LCOS watchdog
- Additional administrators can be created with a password length of more than 16 characters using WEBconfig
- NAT-Traversal is activated by default (e.g. after configuration reset)

## **LCOS changes 8.60.0104 RC1 ► 8.60.0134 RC2**

### **New Features:**

#### **VoIP:**

- Implementation of a SIP proxy which allows SIP connections behind a NAT without STUN
- Restrictable SIP authentication via LAN

### **Bugfixes / Changes:**

#### **WLAN:**

- Possible sorting of the Public Spot user table in the 'Manage Public Spot account' wizard by „Expiry-Type“ or „Absolute Expiry“
- Corrected CSV export of the Public Spot user table
- Public Spot users which were created prior to LCOS 8.60 are displayed in WEBconfig's user management

### **Network Connectivity:**

- HTTPS connections are possible with disabled content filter if the corresponding firewall rule is active
- FCC devices can establish an IPoE connection again
- Fixed a memory leak for FCC devices
- T-Home Entertain can be used with IGMP Snooping again
- A LANCOM device can be used as a PPTP client with activated MPPE

## **LCOS changes 8.50.0161 RU2 ► 8.60.0104 RC1**

### **New Features:**

#### **WLAN:**

- Conformity of the 40 MHz mode approved by WiFi-Alliance
- Separate group keys for each VLAN can be allocated via 802.1x
- 16 Point-to-Point connections can be configured per WLAN module
- Improved rate-adaption algorithm
- Configurable maximum amount of clients in the PublicSpot module
- The voucher wizard within the Public-Spot module is now able to print multiple vouchers at the same time
- It is now possible to specify forwarding address URLs with a length up to 251 characters within the PublicSpot module
- Improved automatic radio field optimization

#### **Network Connectivity:**

- Support for TLS 1.1 and 1.2
- Table rows can be called recursively by „cd“ and „ls“ and thus be displayed well-arranged
- Fields „Location“ and „comment 1“ are passed to LANconfig in order to show this information in column view
- Wireshark compatible files can be generated
- The output of the „show“ command can be limited by using filters
- A broken VPN connection of the LANCOM Advanced VPN Client (Version 2.30 ff) can be re-used when dialing-in again; no need for complete connection clearing by DPD
- PPTP connections can be encrypted (MPPE)
- Configurable Vendor class identifier for DHCP
- Support for PPPoA and IPoA connections on the LANCOM 1781 devices with integrated ADSL modem
- The „ls“ console command can be called recursively
- A loopback address can be configured for communication with a Content filter rating server
- For memory usage optimization, the additional, Lanconfig-like WEBconfig was removed from the devices L-310, L-305, L-54dual and T-Systems Business LAN R800+ in LCOS 8.60

## Bugfixes / Changes:

### VoIP:

- No more changes in DTMF tone codecs
- Register packets are no longer sent with wrong sender address
- No more changes in DTMF tone codecs

### WLAN:

- When detecting radar on a Point to Point connection the 40MHz mode is considered when selecting new channels
- If client profiles with different encryptions are used (WEP and WPA), the client is able to authenticate correctly even after a fallback to WEP
- The serial number of a managed access point is displayed correctly
- 256 802.1x negotiations now possible at the same time
- TLS authentication no longer broken by beacon timeouts
- Using ist WAN interface, a LANCOM accesspoint can be connected to a WLC
- Further roaming improvements for Apple clients
- If client profiles with different encryptions are used (WEP and WPA), the client is able to authenticate correctly even after a fallback to WEP
- WLAN log table extended to 100 entries
- MAC broadcasts received via WLAN are no longer forwarded to the routing module
- When detecting radar on a Point to Point connection the 40MHz mode is considered when selecting new channels
- The serial number of a managed access point is displayed correctly

### Network Connectivity:

- No more device restart if a wrong password is used during ISDN admin dial-in
- Fixed the bug „Timeout on I2C transfer“, shown in syslog
- If a rating server of a content filter sends an invalid answer, another server is selected
- MC8705 UMTS modules which up to now could only establish HSUPA connections can now be used with HSPA+
- Single remote stations of a loadbalancer can be used in the firewall
- Packets with source- and destination address in the LANCOM device's IP (ARF) network are no longer forwarded (backrouting trap).
- The LANCOM itself is not displayed in accounting
- Fixed a possible LCOS watchdog when using VPN hardware acceleration
- Unnecessary packet retries are avoided if the client sends user data during TCP negotiation
- Fixed errors in the LANCOM 1721(+) MIB
- If a rating server of a content filter sends an invalid answer, another server is selected
- MC8705 UMTS modules which up to now could only establish HSUPA connections can now be used with HSPA+

#### 4. Comments

If you want to upgrade the firmware of your device to a new version, please install the latest LCMS version first. **Before running the firmware-upload you should save the router configuration to a file.** After that you can use LANconfig to load the latest LCOS-version into the device.

In principle, we suggest upgrading the firmware of your device only if you are in need of the latest features.

Please note that different firmware files might be available for your device. Further information can be found in the file README.PDF in the download area of our homepage.