# Lantronix AVL FIRMWARE RELEASE

**VERSION:**                                     avl_3.16.0_rc9

BIOS version:                          3.0.4

Official release date:             06/01/2022 (M/D/Y)

List of firmware files:            avl_3.16.0_rc9_20220406.frp

avl_3.16.0_rc9-Zc0a0b5e7.zip

avl_3.16.0_rc9_20220406.txt

Hardware compatibility:          This firmware applies to the following LANTRONIX products with Cortex processor:

| Devices | Hardware Revisions | Supported firmware versions | Notes |
| --- | --- | --- | --- |
| **FOX3-2G Series** | 13,15,17,19,20,21 | avl_3.x.x (only) | 1)      Use      the      PFAL      command $PFAL,MSG.Version.HardwareRev$ to get shown the hardware revision of your AVL device.  The device responses with (second line shows the hardware version):<br><br>    $<MSG.Version.HardwareRev><br>    $11-NUCHB<br>    $SUCCESS<br>2) The hardware revision is also printed on the product label, located on the back panel of the device. In the Serial Number (S/N) field there are 3 digits in parenthesis, for example, 60148(9XX)50600014, and the number "XX" is the hardware revision of the device. If the number is "11", it means that the hardware revision is 11. |
| **FOX3-3G Series** | 06,11,13,15,17,19,20,21 | avl_3.x.x (only) | |
| **FOX3-3G-BID\*** | | | |
| **FOX3-4G Series** | All | avl_3.x.x (only) | |
| **BOLERO40 Series** | All | avl_3.x.x (only) | |

\* On request

**IMPORTANT**

➢ This firmware version is ONLY for the LANTRONIX products explicitly Mentioned above! Do not try to update other LANTRONIX products with this firmware, otherwise, you will not be able to operate your device anymore.

➢ Before updating the new firmware on your FOX3 or BOLERO40 series, it is strongly recommended to back up the configuration with the command **$PFAL,CNF.Backup**

➢ Before upgrading the firmware on your FOX3 or BOLERO40 series, it is recommended to upload and back up all history data on your server (if needed) and finally delete this data on the device.

**NOTE**

➢ If FOX3-3G-BLE devices with older firmware versions (e.g. 3.0.0_xx) are upgraded to this new firmware version (3.3.0_xx), please contact LANTRONIX to receive the BLE activation codes and continue to use this feature without additional costs.

➢ The latest FW 3.16.0_rc9 is for FOX3-2G/3G/4G with the CORTEX CPU as well as BOLERO40 series.

➢ Sleep=Ring on BOLERO40 series works only by using SIM-SLOT2 (the upper SLOT) on BOLERO40 series

## DOCUMENTATION:

The following document(s) is (are) provided on7https://www.lantronix.com/ as part of the AVL firmware release "avl_3.16.0_rc9".

| Filename | Description |
|---|---|
| PFAL Command Reference | Lists and describes all PFAL commands supported by this firmware release. |

| Version | Description | Created by | Date (M/D/Y) |
|---|---|---|---|
| 3.16.0.0 | Firmware release "avl_3.16.0_rc9" | Lantronix | 06/01/2022 |
| 3.16.0.0 | Firmware release "avl_3.16.0_rc3" | Lantronix | 12/13/2021 |
| 3.15.0.0 | Firmware release "avl_3.15.0_rc4" | Lantronix | 16/09/2021 |
| 3.14.0.0 | Firmware release "avl_3.14.0_rc5" | Lantronix | 04/19/2021 |
| 3.14.0.0 | Firmware release "avl_3.14.0_rc4" | Lantronix | 04/09/2021 |
| 3.14.0.0 | Firmware release "avl_3.14.0_rc1" | Lantronix | 02/17/2021 |
| 3.13.0.0 | Firmware release "avl_3.13.0_rc5" | Lantronix | 01/12/2021 |
| 3.12.0.0 | Firmware release "avl_3.12.0_rc2" | Lantronix | 11/17/2020 |
| 3.11.0.0 | Firmware release "avl_3.11.0_rc4" | Lantronix | 10/14/2020 |
| 3.9.0.0 | Firmware release "avl_3.9.0_rc2" | Lantronix | 07/14/2020 |
| 3.8.0.0 | Firmware release "avl_3.8.0_rc3" | Lantronix | 06/03/2020 |
| 3.7.0.0 | Firmware release "avl_3.7.0_rc2" | Lantronix | 04/21/2020 |
| 3.6.0.0 | Firmware release "avl_3.6.0_rc2" | Lantronix | 03/10/2020 |
| 3.5.0.0 | Firmware release "avl_3.5.0_rc8" | Lantronix | 02/05/2020 |
| 3.4.0.0 | Firmware release "avl_3.4.0_rc8" | Lantronix | 12/03/2019 |
| 3.3.0.0 | Firmware release "avl_3.3.0_rc15" | Lantronix | 10/02/2019 |
| 3.2.0.3 | Firmware release "avl_3.2.0_rc39" | FALCOM | 07/04/2019 |
| 3.1.0.2 | Firmware release "avl_3.1.0_rc33" | FALCOM | 11/09/2018 |
| 3.1.0.1 | Firmware release "avl_3.1.0_rc20" | FALCOM | 05/15/2018 |

# 1) Preface

This release note describes the new functionalities of the firmware release "*avl_3.16.0_rc9*" and is

intended for use as a reference when updating an AVL device to version "***avl_3.16.0_rc9***".

# 2)   Important Notes

The firmware file with extension "**\*.frp**" is for the update through the **Workbench** and for the update remotely OTA (RUpdate). The firmware file with extension "**\*.txt**" is for the update through **terminal emulators** (e.g.: Hyperterminal, PComm Pro). The firmware file with extension "**\*.zip**" is for the WebUpdate. To update the firmware with the extension "**\*.frp**", please use the **Workbench** version **2.6.2_RC7** or higher. To update the firmware with the extension "**\*.txt**" you can use any **terminal emulator** (example: Hyper terminal, Pcomm Pro). To initiate a WebUpdate use the command **$PFAL,SYS.WebUpdate.Start,"http://url",80 or $PFAL,SYS.WebUpdate.Start,"http://url" or $PFAL,SYS.WebUpdate.Start,"https://url",443 or $PFAL,SYS.WebUpdate.Start,"https://url"** on the device. DON'T switch off the AVL device while it reboots after the firmware update. The duration of the reboot after the firmware update may take approx. 45 seconds.

# 3)   Firmware Installation Notes

The installation package consists of firmware in three different formats *.frp and *.zip. and *.txt. You can choose whether you want to update the firmware via following interfaces:

| Interfaces | File | Description | References |
| --- | --- | --- | --- |
| **RS-232 PORT** | *.frp | This is primarily intended for updating one device first, to ensure the process completes properly before rolling the update to a group of other devices. Use  " **Workbench** " and update the "*.frp"-file via the serial port. | |
| **WEB-SERVER** | *.zip | This is a perfect solution when multiple deployed AVL devices need updating. The firmware file is located in your web-server and you send to the AVL device the URL of a web server you have set up for downloading over-the-air the firmware file. | |
| **Remote with Workbench** | *.frp | This solution lets you update the firmware remotely on several AVL devices. More details can be found in the online help in the Workbench software. | |
| **TCP-SERVER** | *.frp | This solution lets you update the firmware remotely on several AVL devices. | |
| **Remote with Consoleflow** | *.zip | This solution lets you update the firmware remotely on several AVL devices. More details can be found in the online help in the Consoleflow software. | |
| **Terminal SW** | *.txt | You can upload the firmware with the extension *.txt serially over a terminal SW such as PComm Lite, Tera Term, etc. | |

# 4)   Prerequisites concerning the PC

A 32/64-bit-WINDOWS operating system (Windows XP, Vista, 7) or Linux is running on your PC and about 50 MByte free space on your hard disk is required. The RS-232 interface must be configured

with the following parameters:
- Baud rate: 115200
- Data Bits: 8

- Parity: None

- Stopbits: 1

- Flow Control: None

# 5) Firmware Update Process

These instructions are specific to updating your LANTRONIX AVL device via COM interface (Serial Port).

**(a) Download the firmware file and Workbench software needed from the following hyperlinks.**

1. https://www.lantronix.com/products/workbench/#tab-docs-downloads
2. https://www.lantronix.com/products/fox3-series/#tab-docs-downloads
3. Download "**avl_3.16.0_rc9.zip**" and extract the file you downloaded into a temporary folder on your PC.
4. Run the "**workbench**" software. If this software is still not installed on your PC, download it first and start the installation.
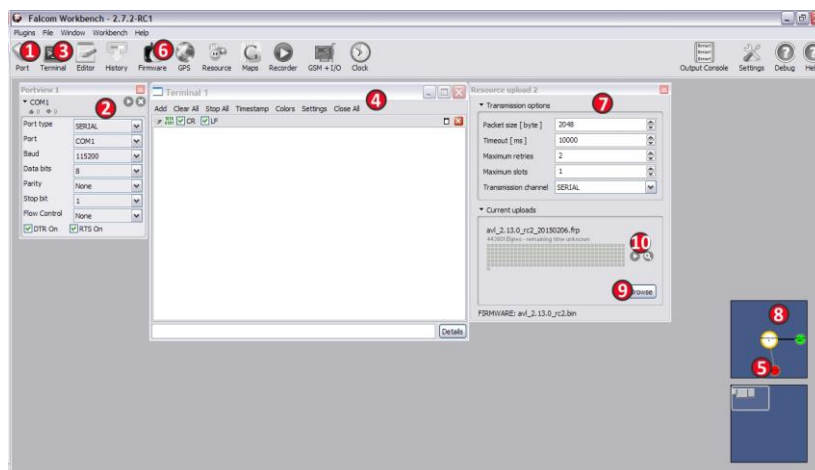


**(b) Begin the firmware update process (refer to the fig. above).**

1. Connect the AVL device to your PC either directly using the programming cable or the corresponding evaluation board.

2. Do **NOT** update the firmware version 3.x.x on FOX3-2G/3G/4G devices with an older processor. The firmware version 3.x.x is **ONLY** for FOX3-2G/3G/4G and BOLERO40 devices with the **CORTEX (CT)** processor. Please verify the hardware revision from the table "**Hardware compatibility**" above and make sure you are upgrading a FOX3-2G/3G/4G device with CORTEX processor. LANTRONIX takes no

liability and no responsibility for any cases, firmware versions have been flashed wrongly nor will LANTRONIX cover any costs associated with this happening.

3.   Click **Port** (1) icon, select the COM port settings from the **PortView1** (2) and click the **Play** button next to the text "COM.." to open the selected COM port.

4.   Click **Terminal** (3) icon, select the **TerminalView** 1 (4) and go to the **ConnectionView** (5) and connect it to the **Serial Port COM1**.

5.   Click **Firmware** (6) icon, select "SERIAL" from the **Transmission Options** (7), go to **ConnectionView** (8) and connect it to the **Serial Port COM1**.

6.   Click **Browse** (9) button and select the firmware file as "*.frp" from the temporary folder where the firmware was expanded.

7.   Click **Play** (10) button to start the firmware update. This button appears only if the firmware file has already been selected.

8.   Wait until the update process completes. While the update is running, do not send any command to the device and do not manually reboot it until the device restarts itself.

9.   After the update process successfully completes, a success message will appear. Click "OK" button to restart the AVL device.

10.   After device restarts and configuring the unit, you can execute the command **$PFAL,Cnf.Backup** to save the user configuration as factory settings. If the AVL device was already configured, you can execute the same command after the firmware update to save the user configuration as factory settings.

11.   LANTRONIX recommends that you update one device first, to ensure the process completes properly before rolling the update to a group of other devices.

# 6)   New and Modified Functions

### IMPROVEMENTS and BUGS FIXED:

-   AVL3-302 Too many GPSTATE:Enable TLS security for WebUpdate events on AVL device while updating FW using HTTPS Web update link with invalid port no
-   AVL3-307 LUA functions dofile() and loadfile() are implemented
-   AVL3-308 BOLERO43 does not connect to Docomo
-   AVL3-314 Lua Abort reason as dynamic variable and event eLuaAborted
-   AVL-300 Use MONPREF=100 as base for Verizon
-   Added command to clear MQTT certificates (PFAL Command:  TCP.MQTT.ClearCertificate)
-   AVL3-320 Increased size for PPP secrets (63 bytes)

### KNOWN ISSUES:

None