

90000

JunglePAX – Release Notes

Firmware Package p/n 90000-01

Version: 1.26.33984

Release Date: Feb 06th, 2026

Type of Release: Production Release

Lentronics JunglePAX



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TABLE OF CONTENTS

Table of Contents.....	2
Release Summary.....	3
Requirements.....	3
Documentation Control.....	3
Product/Component.....	3
Core Unit Data Plane Firmware.....	4
Core Unit Management Plane Firmware.....	5
Core Unit Bootloader.....	6
Access Unit Firmware.....	6
Release Details.....	7
SUMMARY - New Features (1.26).....	7
RESOLVED Limitations.....	8
Engineering Rules Associated with JunglePAX operating modes.....	9
Firmware Upgrade Procedure.....	10
Contacts.....	10

RELEASE SUMMARY

REQUIREMENTS

- A networked PC with access to the JPAX subnet
- Web-browser (latest version of Chrome, IE or Firefox)
- Terminal session. Putty.exe
- Advanced NMS (p/n 90000-50, -50/G, -51, -50/G) versions 8.3.2, 8.4.5 or 8.5.0

DOCUMENTATION CONTROL

Document Version 1.00	PR 1.26. 33984	February 06 th , 2026
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PRODUCT/COMPONENT

This production firmware release is comprised of numerous individual firmware components packaged together and distributed as a controlled JunglePAX part number 90000-01. The overall product structure, including hardware and firmware contains the following sub-components

JPAX Firmware Package 1.26.33984

- CHASSIS, p/n 90001-01
 - Comprised of Backplane, daughter-card and mechanical
- CORE Module, p/n 90010-01

NMS	jpax_nms.itb	version=1.26
DP	jpax_dp.itb	version=1.26
FPGA	jpax_fpga.itb	version=1.26
UBOOT	jpax_uboot.itb	version=1.07

- ACCESS CARDS

EF-4A	ac9020001.bin	version=2.01.16
EC-4A	ac9020101.bin	version=2.01.11
T1E1-4A	ac9030002.bin	version=2.01.08
CBUS-4A	ac9030101.bin	version=2.01.08
C3794-1A	ac9036001.bin	version=2.01.15
C3794-4A	ac9036002.bin	version=2.01.15
C3794-1A-FPGA	af9036001.bin	version=1.13
C3794-4A-FPGA	af9036002.bin	version=1.13

DR-1A	ac9035001.bin	version=2.01.03
DR-4A	ac9035002.bin	version=2.01.03
DR-1A-FPGA	af9035001.bin	version=1.08
DR-4A-FPGA	af9035002.bin	version=1.08
G703D-4A	ac9036601.bin	version=1.00.00
G703D-4A-FPGA	af9036601.bin	version=1.03
DTT-2A-01	ac9034101.bin	version=1.14.00
DTT-2A-03	ac9034103.bin	version=1.14.00
DTT-2A-05	ac9034105.bin	version=1.14.00
DTT-2A-01-FPGA	af9034101.bin	version=1.06
DTT-2A-03-FPGA	af9034103.bin	version=1.06
DTT-2A-05-FPGA	af9034105.bin	version=1.06
XTDM-8A	ac9030801.bin	version=1.00.21
XTDM-8A-FPGA	af9030801.bi0	version=1.05
XTDM-8A-FPGA	af9030801.bi1	version=1.03
AC_BOOT08	ab90xxx08.bin	version=1.09.00
AC_BOOT50	ab90xxx50.bin	version=1.09.00
AC_BOOT24	ab90xxx24.bin	version=1.02.03

CORE UNIT DATA PLANE FIRMWARE

The data plane firmware provides the real-time operating environment responsible for the real-time components of the JPAX system and where all the time critical functionalities are implemented, including:

- data path configuration
- data path status monitoring
- alarm monitoring and reporting
- hardware drivers and control
- inter-core operation
- system initialization
- inventory
- node health status
- logging and event notification

The data plane is comprised of critical interfaces and associated systems that affect the flow of data within a JunglePAX node (Inter-core configuration and monitor) and across a JunglePAX network, including the CBUS Interface, TDM packetizer, MPLS capable switch, FPGA, Power Supply, DPLL, SFP status, alarm control and status, access unit control, and system logging functionality.

CORE UNIT MANAGEMENT PLANE FIRMWARE

The management plane firmware provides embedded management environment responsible for management plane functionality of the JunglePAX including:

- Configuration
- Alarm logging
- Status reporting
- Transaction and Session Management
- Security, including role-based access control
- Firmware upgrades
- Network discovery and remote management

The NMS is comprised of functional modules including the ConfD Infrastructure, Applications and Daemons, and the Interfaces that support the configuration of, and status/alarms-reporting from, the RTOS Components, which are also referred to as the Data Plane Components.

A JunglePAX model is created through the YANG modelling language and incorporated into the code build. The ConfD compilation infrastructure creates the north-bound interfaces (Netconf, CLI, HTTPS and SNMP). SNMP is not currently supported in this release. Each parameter set/get request is sent to the ConfD server, which will pass it via an Application or Daemon (often referred to as a Data Provider) to the Data Plane. The Data Provider uses functions in the Interfaces to send the requests to the Data Plane.

For this release of the NMS, access to the JunglePAX is via the **webui (aa.bb.cc.dd)**, where **abcd** represent the IP address of the locally connected CORE module. This release supports local and remote unit access, with remote navigation provided by a Network node list. Access to either left or right remote CORE units is offered through the network node list.

Physical access to the embedded manager is provided through the TOP NMS port (RJ-45) on either left or right CORE modules.

Access to the Command Line Interface (CLI) is accessible via the webUI interface by pressing the CLI button or using an SSH client like PuTTY on the standard SSH port 22. Connect to the IP address of the CORE unit. The advantage of the SSH client is better window size flexibility and text handling like pasting scripts.

CORE UNIT BOOTLOADER

The Core Unit Bootloader controls the boot process of JPAX. It is responsible for the following:

- Loading factory firmware images from TFTP or SD card
- Extracting/Verifying and Booting NMS and DP firmware images
- Extracting/verifying/flashing FPGA images to serial flash
- Configuring system memory map for all peripherals
- Storing default MAC addresses, default IP settings and factory calibration settings
- Low-level system debugging support

ACCESS UNIT FIRMWARE

The access unit firmware for the microprocessor consists of two parts: the bootloader and the user application. There are different user applications to support the nine types of access units

- 4-port Ethernet Optical (SFP),
- 4-port Ethernet Copper (RJ-45),
- T1/E1,
- CBUS,
- xTDM,
- 1 & 4-port C37.94
- 1 & 4-port Direct Relay unit supporting RS232 (up to 4 ports) and G.703 (1 port)
- 4-port G.703, and
- 48/130/250VDC Direct Transfer Trip modules

RELEASE DETAILS

SUMMARY - NEW FEATURES (1.26)

GE's JunglePAX is a purpose-built optical packet switched solution that's hardened through layers of redundancy for secure and dependable utility communications. This production release of the CORE units' firmware introduces a variety of new product features and fixes with the major items summarized below. The complete list is included along with their JIRA (issue tracking) number. Where a detailed description of the issue is required, please contact GE with the JIRA number.

Firmware version 1.26 new features

1. Fixed cyber security vulnerability CVE-2008-5161 SSH Server CBC Mode Ciphers Enabled.
2. Fixed cyber security vulnerability SSH Weak MAC Algorithms Enabled.
3. Fixed cyber security vulnerability SSH Weak Key Exchange Algorithms Enabled.
4. UI updates to colours, fonts, logos and layout to reflect the GE Vernova brand identity.

RESOLVED LIMITATIONS

The following is a list of limitations that have been resolved in JPAX firmware package 1.26.31594

Case	Title	Severity
JXKSO-3577	ems_cli and WebUI for EF-4A Access Card displays incorrect negative temperature values when the temperature drops below 0 C	Medium
JXKSO-3579	Configuring Sync-In Force Rx SSM SONET value may fail and when WAN ports are connected to another node causes "Aborted: the configuration database is locked by session..." error	Medium
JXKSO-3586	EC-4A: Bandwidth Utilization isn't displayed in WebUI	Medium
JXKSO-3587	ems_cli/WebUI do not display test status for EF-4A, EC-4A and EXC-6A	Medium
JXKSO-3594	Untag Does Not Work on Local-Ethernet Services	Medium
JXKSO-3605	Dynamic Power Management Mode still displays Power Threshold Type and Max Power Threshold [W] column headers	Medium
JXKSO-3631	EC-4A/EF-4A: Signal Status Declares BW Utilization Warning when traffic throughput exceeds 90% and BW Utilization Alarm when traffic throughput exceeds 95%	Medium
JXKSO-3632	EC-4A/EF-4A: VLANs Input Tagging and Output Tagging configurations are missing parameters	Medium
JXKSO-3640	EC-4A/EF-4A: Bandwidth Utilization Warnings in Main Tab are not displayed correctly	Medium

ENGINEERING RULES ASSOCIATED WITH JUNGLEPAX OPERATING MODES

GE allows for a mixture of firmware release 1.14a, 1.16d/e, 1.18, 1.18a/b, 1.20, 1.24 and 1.26 in the same network; however, network visibility is compromised when running multiple different firmware versions in the same network. Traffic is expected to work but GE can't guarantee highest performance when configured across differing firmware.

Ideally, all nodes within a JunglePAX network should be running the same firmware package.

FIRMWARE UPGRADE PROCEDURE

Contact GE technical support team for instruction on upgrading the unit firmware. There is currently no cost to customers to upgrade their JunglePAX firmware to release 1.26.

CONTACTS

For additional details or technical assistance, you may contact:

Customer Technical Service

Burnaby, BC Canada

Phone: 1-604-421-8610

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