

Milan / Paylink Firmware Version 4.1.10.9 Release Notice.

This is a **Full** (4) release of the Milan / Paylink Interface firmware - code version **1.10.9**. Although there have been interim releases, the last major release was 4.1.10.4 and so this release note describes all the significant changes since then to the firmware and associated PC support files

This release is the last release in the x.1.10.x series that will implement any new features / facilities.

All further releases will be to fix specific bugs, new features / facilities will be implemented in a new x.1.11.x series of releases.

Main New Features

The main features of this release as compared with 4.1.10.4 are:

- USB handling redesigned and new driver and firmware features added to overcome the problem of communications dropping out in a noisy environment.
The updated AESWDriver program will not load on older Windows 98 / ME systems, so a new AESW98Driver program is available for those.
- Support for the new Paylink Lite platform.
- Where a hopper has its coin value programmed into EPROM according to MCL's new standards, that value overrides that specified by the address
- Support for the run-time reassignment of the value of the coin in a dispenser by an application.
- Support for old (un-encrypted) hopper protocol.
- Hopper payout totals are preserved for hoppers that do not preserve them over a power cycle.
- Support for cctalk note acceptor barcodes. (For Ardac Elite)
- "Escrow Hold" commands are sent to cctalk bill acceptors (except for Innovative devices, which prior to 3.21 did not process these correctly.)
- cctalk coin identities starting with "TK" are regarded as having a value of zero.
- Support for multiple Paylink units connected to a single PC
- A "Reprogramming Kernel" provides for recovery from failed firmware upgrades.

PC code versions.

To obtain all of the new facilities described in this release document the following PC versions are required:

Aesimhei.dll	Version 1.4.0.0 or later
AESWDriver.exe	Version 1.1.3.2 or later
AESW98Driver.exe	Version 1.1.2.2 or later
Aesimhei.h	Dated 29/10/07 or later

Bug fixes from version 1.10.4

- Many USB synchronisation problems / bugs fixed in the USB handling re-write.
- Fixed SEC meter driver code timing problems that "encourage" faults in the meter such as incrementing the wrong counter. This release also detects and recovers from these faults.
- Note & coin values of > 50,000 are now handled correctly
- Fix for individual coin / note counts resetting to zero on USB problems.
- Fix for possible 5 sec delay when disabling acceptors.
- cctalk handler fixes:
 - Fix for crash when changing sorter paths for non-sorting cctalk coin acceptor.
 - Fix to allow for unknown cctalk coin acceptors not responding to routing messages.
 - Following a cctalk coin jam event the acceptor is then monitored until the problem clears.
 - Fix to cctalk note to handle up to 32 notes and a variable number of inhibit bytes.
 - Fix to cctalk note to correctly process stacker events.
 - Cleared bug introduced in 1.10.71 that crashes NVx series acceptors by issuing a self test at power on.
- ID-003 Handler fixes:
 - Following any problem, the ID-003 handler re-checks the enables of Barcodes & Notes.
 - Fix to handle an ID003 acceptor powered off whilst stacking.
 - Update to the ID-003 handler to only issue disable commands when the acceptor is idle
- Hopper fixes:
 - Returns a status PAY_US for hoppers that are not ready (comms timeout).
 - Fix to include the FAULT bit in hopper fault events

- Fix in firmware to handle NAK for unrecognised cctalk messages to hopper. (This is needed for the latest Azkoyen hopper)
- Following a disconnection, the hopper is re-identified “on-line” (It may have been replaced)
- Escrow / Barcode fixes:
 - Fix to cctalk note to handle disable while note in escrow
 - Fix the bug for any action other than stack or return done with a barcode in escrow and note escrow not turned on
 - Fix to Escrow system for "simultaneous" accept and auto reject
 - Fix for Escrow note return.
 - Revised handling of escrow commands, to remove bugs in barcode / note interaction.

Significant Side effects from version 1.10.4

None

Compatibility with 1.10.4

All software in this release can be freely mixed with that in 1.10.4, although the improved USB error handling is only obtained when running the latest driver **and** firmware.

Upgrade / Downgrades

Any earlier version of the firmware can be upgraded to this version without any problems. Downgrading to 1.10.4 / 6 / 7 or 1.9.x will not cause any problem

New Features in Detail.

New USB Protocol.

There is a new error checking and recovery protocol implemented in both the driver and firmware. If both are in use, then all communications are checked for consistency and completeness. If only one end is updated, then the old communications system continues to operate.

Alongside this the AESWDriver program provides significantly improved fault recovery features and can automatically continue past problems that used to require the USB cable to be removed or a Paylink or PC reboot. (These improved recovery features are available without the latest firmware.)

This does not require the update to Aesimhei.dll

Dispenser Coin Value Reassignment.

This will require the new Aesimhei.dll, the new firmware, and requires new constants defined in the latest AesImhei.h

To reassign the value for a dispenser:

1. Wait until the system is otherwise idle
2. Read the DispenserBlock for hopper you wish to change, using ReadDispenserDetails()
3. Modify the DispenserBlock->Value to that desired.
4. Set DispenserBlock->Status to DISPENSER_REASSIGN_VALUE.
5. Write the DispenserBlock for hopper you wish to change, using WriteDispenserDetails ()

To check that the update has taken place, the DispenserBlock->Status field will be read as DISPENSER_REASSIGN_VALUE if the DLL has processed your request, and becomes DISPENSER_VALUE_REASSIGNED after the firmware has actioned it.

*Note: This change will be **lost** each time that the Paylink unit is power cycled or otherwise reset.*

Multiple Paylinks with a single PC.

With this release, a different “USB Serial Number” can be assigned to a Paylink using a supplied utility. (The factory default is “AE000001”.) Multiple copies of the latest release of the driver program can then be started so that each only associate itself with a specific USB Serial Number, an extension to the Open command in the DLL allows the application to direct all subsequent calls to the named Paylink.

This does not require any update to the firmware.

Unencrypted Hopper Support.

This release also support hoppers that use the original, unencrypted, cctalk protocol for payment, such as the Asahi Seisho escalator hopper.

New “Reprogramming Kernel”.

With this and all future version of the firmware contain a “reprogramming kernel”, which means that partial firmware downloads of one of these version over another can no longer disable the Paylink. Following a failure, the download can always be restarted, regardless of the point at which it failed. This failure can extend to a complete cycling of the PC and Paylink power.

When this and future versions are used to download to an older version, a failure within the first 8% of the update will still disable the Paylink, a failure after this initial 8% can be successfully restarted.

The instant the downloading of an older version is started, the old situation returns and any failure will disable the Paylink.