

TTPM2 Firmware No. 906/907-xxx

906-213 means program version 2.13, etc.

FW version Change

906-213	Start of FW history.
907-214	This FW version has only been used in dual ticket track applications. <ul style="list-style-type: none">• Handling of dual tracks modified.• Ticket will be erased magnetically before being striped or voided.• XON will be sent once every 30 second if XON / XOFF is selected.• Start up routine modified. Cutter no longer operates at start up since this may damage a ticket inserted from the front in case of a power failure in the middle of an operation.
906/907-216	<ul style="list-style-type: none">• Cutter can be initialized by the "3-button reset operation"• Time-outs are now implemented for the !L3 function.• Minor modifications to the front load sequence. <p>!L3 now answers with ACK if card is loaded correctly and with NAK + error code in case of a load failure.</p> <p>The following error codes have been defined:</p> <ul style="list-style-type: none">• - NAK + B No card inserted within 10 seconds after received !L3.• - NAK + C Card inserted and then removed.• - NAK + D Card jam when loading card (serious fault)• An error in FW version 2.16 caused problems if a ticket was read with !D and then printed without sending a new !M command before the !P. The ticket was then striped. This is now corrected.• Command !N has been introduced to allow encoding of up to approximately 50 characters on track 2 in hexadecimal format. Characters 0—9 and A—F are valid. The least significant bit is encoded first. No additional characters are added by the TTPM. It is, therefore, necessary to put approximately six ZERO digits at the beginning of the data to be encoded. Any start bits, stop bits, or check digit also have to be included in the data string.
906/907-217	
906/907-218	<ul style="list-style-type: none">• Reading a ticket encoded with !N, by the use of the !D command, will not work since !D expects a ticket to have a correct ISO format.• Read after write on track 2 has been slightly improved.• Cutter is now reset at power up if no ticket is present in any of the sensors close to the cutter. This prevents a ticket from being accidentally cut, but enables the cutter to be reset in the event of a failure, or after maintenance.
906/907-219	<ul style="list-style-type: none">• Command !O added. Reads track 2 of the magnetic stripe and reports the result by returning up to 240 characters (0 or 1) representing the bits encoded on the track. No decoding is made by the TTPM2. This command

is useful if a card has been encoded with an equipment that does not follow the ISO standards, or by a TTPM2 by the use of command !N.

- A separate version of the TTPM2 software, numbered 926-xxx, is introduced. This version is used with TTPM2 equipped with CD200 card dispenser.
 - A minor correction has been made to the routine used to enter variables. The correction eliminates a problem when users are sending empty lines, too many lines, or both, in relation to the number of defined variable parameters.
 - Encoding of the 210 bpi track 1 can now be done in ISO 7811 format. The new command !J + data defines the data to be encoded on track 1. Valid characters are ASCII space (20H) through to ASCII (5FH). Start, stop and checksum are automatically added by the TTPM2.
- 906/907-220
- The !D command has been given the extension !D1 defined so that a card encoded with !J can be read in the TTPM2.
 - If the digit 1 is left out, the !D command will read track 2 as usual. No modification is therefore necessary for customers using the old !D function.
- 906/907-221
- Correction of a bug in the !D1 routine causing reading to fail if the routine is not the first operation after a reset.
- 906/907-222
- A new command !L5 has been implemented. The command ejects a ticket forwards into the "waste bin". This is useful if the system decides to cancel a ticket. Only valid for printers with the optional front load function.
 - It is also possible to direct striped and voided tickets to the waste bin by including an @ character in the !M string.
 - The 24 V power supply relay is now being switched off after approximately 30 s of inactivity.
- 906/907-228
- This version includes support for bar code 39. If a bar code is selected, the print speed will be reduced in order to maintain the print quality.
- 906/907-229
- All versions of this FW release now include the command !I that correctly en-codes track 3 according to the ISO 7811 format. Reading can be done with command !D 3.
 - Firmware 907 (dual tracks): Handling has been modified slightly to prevent paper jam. It is also possible to use the printer with only one of the tracks loaded with paper. The self-test, however, uses only the lower input.
- 906-230
- This version is only released for firmware 906 (dual ticket tracks). Corrects a bug that caused the printer ignore the single ticket entry if the 24 V relay had been shut off.
 - New version of the dual fanfold ticket entry printer.
- 906/907-231
- In order to increase the flexibility, two new subcommands have been added to the !L command:
 - !L17 Loads the lower track into active position.
 - !L18 Loads the upper track into active position.

- Paper is automatically positioned at power on.
- 906/907-232
- The time-out for the !L3 command is increased.
 - The printer will automatically try to eject a ticket stuck in the machine during the !L3 command.
- 906/907-233
- The data string sent to the TTPM2 to encode track 2 (!M) can now have a check-sum digit added to it. This checksum will then be compared by the TTPM2 before encoding which guarantees that the magnetic code data is correctly received.
 - Combining the characters \$ and @ in the !M data string now results in normal behavior if the encoding was successful. If an error occurs then the ticket is transported back to the start position and NAK + 'E' is sent.
 - Adding a single digit after the !P makes it possible to set the maximum number of encoding retries for one ticket. The number given is the number of additional tries i.e. !P 1 means one normal attempt plus one retry. Default is 1, which is the value used if no digit is present.
 - Firmware 907 (dual ticket tracks): Various modifications to the paper load routines have been made. A paper jam during encoding no longer causes the printer to loose data.
- 906/907-234
- Some types of long tickets caused paper jam if the magnetic encoding failed. This is corrected by not allowing the long ticket to enter under the print head before checking the magnetic code.
- 906/907-235
- Filter included making it possible to use tickets with holes.
- 906/907-236
- !L3 also supports tickets with holes.
 - !L3 speed improved.
- 906/907-238
- Bug removed. Erased the magnetic code if a ticket was reprinted without any magnetic data.
- 906/907-240
- Bug in the !L4 routine removed. Rear motor now runs a bit longer to avoid jam after cut.
 - A new error code is defined "E" which means jam in the input feeder during an !L3 command.
 - Paper jam in the input feeder was previously reported as "D", which gave the same error code for two different jam situations.
- 906/907-250
- This correction primarily affects the dual track firmware 907.
- The definition of long and short ticket has been changed to approximately 95 mm instead of just below 110 mm.
 - Firmware No. 906 now includes all functions previously found in firmware 907 (for dual track) and 926 (for card dispenser).
- 906-270
- DIP-switches 7 and 8 now select single track, dual track, or card dispenser.
 - DIP-switches 1 and 2 now also select transmission speeds 1200, 1800

and 57600 bps in addition to the default speed 9600 bps.

- To enhance ticket handling speed, front load printers read track 2 data to memory when loading the ticket. Previously, a separate read movement was required when !D command read data to host computer.
- Support for Dallas 80C320 microprocessor (on control board) introduced.

Bug fixes

- This firmware version now supports both the old 80C32 processor, an enhanced ("incompatible") 80C32 processor, and the enhanced 80C320 microprocessor.
- An erroneous encoding with the !N command now results in NAK + F (15H + 46H).

Restrictions

906-280

- It is not possible to read track No. 2 on 110 mm long tickets inserted through the optional front load mechanism.
- Specifying text, graphics or bar code printing outside the valid coordinates makes the processor enter a loop with strange behavior of lamps, paper feed and cutting motors. Fortunately, you will discover this problem already during the design and testing of the application software. To recover from the error situation, clean the TTPM2 from any remaining paper particles and perform a "warm start" by holding all three operator control push buttons pressed while you power ON the unit.
- Transmission rate 9600 baud is always used even if 19200 or 57600 baud is selected.

Bug fixes

- Transmission speed 19200 baud can now be selected.

Restrictions

906-290

- Transmission rate 57600 baud cannot be selected.
- It is not possible to read track No. 2 on 110 mm long tickets inserted through the optional front load mechanism.
- Specifying text, graphics or bar code printing outside the valid coordinates makes the processor enter a loop with strange behavior of lamps, paper feed and cutting motors. Fortunately, you will discover this problem already during the design and testing of the application software. To recover from the error situation, clean the TTPM2 from any remaining paper particles and perform a "warm start" by holding all three operator control push buttons pressed while you power ON the unit.

Bug fixes

906-300

- Problems with long, thick tickets not loading and cutting correctly solved.
- Icelandic characters added.

Restrictions

- Same as 906-290.

Added functions

[3.20](#)

Added commands !Q, !U, !V, and !N+.

New magnetic encoding attributes added.

(|, {, and })

Only dual track version:

Does not accept ticket data **without** track selection command. !L1, !L2, !L17, or !L18 must always be sent prior to every !P command. Signals NAK 1 to indicate error and discards the received data.

Bug fixes

- Response to entry selection with one ACK instead of two ACK.
- Now responds to lower entry selection when there is no paper present.
- Response to paper jam while selecting entry is now NAK + 2 instead of NAK + 2 + ACK

Restrictions

Same as 906-290

- !W T modified with fixed spacing setting for font 1.
- New commands !Q, !U, !V and !N+
- 3.30 New error message NAK X
- Added power ON ticket detection routine that voids any ticket left in the printer at power OFF.
- An "ETX" (03H) is issued when the print cycle is completed.
- [3.50](#) !W print progress indication command added, and improvements to the power failure cleanup.
- Only barcodes of size 1 and 2 printed in east and west orientation will reduce print speed.
- [3.60](#) !Y "read ticket counter" command added
- 3.70 Characters added to positions 128 to 255 of fonts 1 and 4. Among them is the Euro symbol (€) in position 128. See Technical Specifications Manual for complete character set.
- 3.80 A ticket inserted in the rear upper slot before the TTPM2 has received a load command causes the red LED to start flashing and the TTPM2 waits for the ticket to be removed before continuing. To prevent a ticket that has been left sitting at the mouthpiece from being sucked in when a front load command (!L3) is received, the TTPM2 now senses if there is a ticket already in the mouthpiece when the !L3 is received and in that case it flashes the red LED until the ticket has been removed.
- Fix added for the problem where the printhead were left in a raised position Default burn time has been reduced. A new command (!Z n) controls the burn time (blackness).
- 3.90 **NOTE!** - After installing this firmware you MUST do a three-button reset for it to set the burn time to the default value. Failing to do so will generate blank tickets
- Inserting a ticket at the rear upper slot after an !L3 command is prevented in CD-mode.
- New transmission speed introduced: 115200 baud.
- 4.00 Default burn time is now automatically set after firmware upgrade.
- Upper solenoid activated during single ticket entry on Dual entry printers that are

used as single entry one's.

It is now possible to suspend operation after magnetic encoding by inserting a ~ character in the !M data string.

A bug in the error handling of command !T has been corrected. Sensors in the upper and lower entry are used to verify that the ticket the upper rear entry is backed out enough when using lower entry.

Now it is possible to send uneven No of characters for Code 2-of-5.

Improvements:

Delay when starting front motor after cut removed. This timeout caused problems on some printers where the front motor did not start immediately, causing a shift in print position.

Removing paper when loading now releases the feed solenoid. Paper out when sending !P results in the printer sending NAK + P and ignoring the P command.

New stepping-sequence when reversing feed.

Extended reset is now default.

Startup behavior in dual track mode corrected when only upper track inserted.

New cleaning routine that operates both motors if powered up with yellow button pressed. Also allows setting of burn time using buttons.

Speed improved when building the ticket image.

Problem fixed which could cause trailing ticket to be fed too long after cutter.

Extra reverse when positioning ticket removed. Activation of solenoid delayed to prevent it from being actuated during normal positioning.

!O n implemented. n=1 results in 512 bits read from track 1. . n=3 results in 512 bits read from track 3. Any other value including none gives the standard !O reply.

Both encode and print speed can be set. The third parameter decides what motor to address:

```
!C<CR><LF>
!F A E 30 250 1 "Encode speed (full-step)"<CR><LF>
!F A E 30 190 2 "Print speed (half-step)"<CR><LF>
!P<CR><LF>
```

Known bugs:

Encoding attribute { does not work on track 1. Use lower case **d** instead.

PIO Timing changed back to slow because of chip tolerances caused unpredictable behavior

The possibility to reset after a critical error has been removed because it caused problems when printing many small bitmaps.

4.50

4.70

When reading track 3, the string was only terminated with an LF. This is now corrected to CR/LF as it is on the other tracks.

Stepper motor for encoding now runs half-steps instead of full steps. This gives a smoother ride and improves encoding reliability.