

**FISCAL PRINTER**

# **TREMOL FP24**

**USER MANUAL**



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## GENERAL INFORMATION

### USED ABBREVIATIONS

- FPR – Fiscal printer
- EJ – Electronic Journal
- SA – Software application

### SAFETY REQUIREMENTS AND ENVIRONMENT CONTROL

#### Safety requirements

- Do not install the FPR near sources of water and do not allow contacts with water or other liquids.
- Do not install the FPR on unstable surfaces to avoid its overturning.
- Do not install the FPR near sources of heat.
- Do not install the FPR on vibrating or vibration-conducting surfaces if possible.
- Plug the FPR into electric outlets with 220V voltage and 50Hz frequency. Turn the FPR off from its power switch before plugging or unplugging it.
  - Use only standard electric plugs. If the plug does not meet, the requirements contact a qualified electrician to fix it.
  - Should an extension cord be used it must also meet the same standard requirements. Do not plug electric motors, heaters or other devices with high consumption of electricity into the same extension cord.
- Do not use defective power supply cables; do not press or bend the power supply cable of the FPR.
- Do not insert metal objects into the FPR – electrical shock hazard.
- Unplug the FPR before cleaning it and do not use aggressive detergents.
- Do not try to repair the FPR on your own. If there are any problems contact the authorized service organization.
  - Unplug the FPR and contact the authorized service organization in any of the following cases:
    - The power supply cable of the FPR is damaged;
    - The FPR is splashed with liquids;
    - There is a mechanical damage of the FPR;
    - FPR does not operate normally.

#### Environment control

- The icon on the right – struck out litter bin – means that this product must not be dumped together with the household trash. To protect the nature environment and human health, please separate this product from the other waste and recycle it. For more information about where to dump – contact local authorities or the seller of the item.
  - For printers out of use is forbidden to dump in mixed waste bins



### INTRODUCTION TO TREMOL FP24

**TREMOL FP24** fiscal printer is a fiscal device operating within a computer cash register system functioning as an Electronic Cash Register with Fiscal Memory with Electronic Journal. The width tape rolls is 57 mm.

#### External view and basic FPR parameters



1. Control panel
2. USB interface;
3. Cover holder;

#### Printer

Hi-speed, Low-Noise, Easy Load Line Thermal printer with resolution 8 dots per mm and speed up to 60 mm/sec.

#### RAM

An integral part of the FPR providing storage for the accumulation of sales registers, programmed parameters and other temporary information.

#### Real Time Clock

FPR have real time clock that is capable of keeping the accurate time for at least 1500 hours without external power supply. When RTC is lost FPR require entering of the actual date and time.

#### Fiscal Memory

All transactions are stored in a fiscal memory. All data stored in the fiscal memory cannot be destroyed or changed.

The Fiscal Memory (FM) block is an autonomous unit restricting the access to the stored records and protecting them from mechanical damages and other negative influences. The manufacturer "seals" the FM block preventing the unauthorized access to the records.

When the number of remaining Daily Fiscal Reports (DFR) is equal or less than 50, FPR printed a warning messages in each DFR with information about the number of

remaining records. FPR prohibit any future operation when there is no more storage capacity.

### Electronic Journal

Electronic Journal (EJ) is non-volatile memory, designed for storing copies of all receipts issued from the FPR. The EJ memory is an nonvolatile memory type Micro SD card with memory 16 GB.

FPR warning if the remaining capacity of EJ is less than 5% of total capacity. When the free lines in the EJ buffer are less than 300, the opened receipts is closed automatically and FPR allows printing only of daily report and Fiscal Memory report.

FPR can continue normal operation after replacing of EJ Micro SD card with new one.

FPR allows reading of the EJ through the PC port by external application. Reading can be full or partial. Partial reading is by date period or by daily report number.

### FUNCTIONAL SPECIFICATIONS

FCR functional registers:

|                    |  |
|--------------------|--|
| <b>VAT Classes</b> | <b>Up to 5</b>   |
| <b>FM Records</b>  | Total <b>2000</b> for daily reports, <b>200</b> for RAM resets, <b>50</b> changes of decimal point, <b>50</b> VAT rates changes, <b>30</b> EJ changes and 12 header changes                                    |
| <b>Cashiers</b>    | To <b>20</b> with programmable name (20 characters) and password (up to 6 digits)  |
| <b>Pay types</b>   | Total <b>5</b><br><b>1</b> main IN CASH (national currency)<br><b>4</b> additional (without exchange rate)<br><b>1</b> currency (with programmable rate towards the main pay type)                             |
| <b>Departments</b> | 20 with programmable: name (20 characters), price, VAT Class, price type parameter, single sale  |
| <b>Article</b>     | <b>Up to 10000</b> with programmable: name (34 characters), price, price type parameter, VAT Class, Department attachment, HSCode, HSDesc, quantity in stock, parameter for quantity watch and barcode number. |

### INTERFACE SPECIFICATIONS

The FCR has the ability to connect to / on a variety of external devices via various types of wired and wireless interfaces:

- USB VCP** (virtual com port);
- BlueTooth SPP** (serial port profile);
- WiFi**.

### Control panel. Buttons. Led indicators

On the control panel are the buttons for turning on and moving the paper, as well as the three LED indicators.

LED indicators allow quick diagnosis of FPR results. The meaning is as follows:

- Status** (green) is on and no error is selected;
- Error** (red) presence of an error;
- BATT** level according to battery color:

|                  |                 |                |               |
|------------------|-----------------|----------------|---------------|
| Color            | Red             | Yellow         | Green         |
| Level of battery | Must be charged | Medium charged | Fully charged |

### FPR POWER SUPPLY

FPR work with built-in Li-Ion battery 7.4V/ 1600mAh. The battery are charged through universal USB interface. Full charge cycle is about 10 hours. With fully charged accumulators FPR prints at least 1500 notes with single sale each and can endure 12 hours in stand-by mode.

### FPR CONSUMABLES AND THEIR REPLACEMENT

FPR use paper rolls with outer thermosensitive layer with following specifications:  
Diameter Ø 40mm (max)                      Paper wide ⇔ 57mm

#### Paper roll replacement (feeding)

FPR monitors the availability of paper and when it runs out its operation is suspended and the Red LED lit.

To restore the operation of the FPR perform the following step by step guide:

- Open the printer cover.
- ▼        To feed the new roll remove the remains of the old ones. Place the new roll with their thermosensitive surface upside.
- ▼        Pull the new paper loose end outside the printer.
- ▼        Close the printer cover.
- FPR automatically resumes interrupted operation if there.

### INSTALLATION AND PUTTING INTO OPERATION

The FPR should be installed by an authorized specialist. Using a software application the specialist will program the obligatory parameters of the fiscal receipt, the tax groups as well as the desired parameters of the articles, operators, etc.

The putting into operation (a.k.a. fiscalization) is a procedure for activation of the fiscal memory of the FPR. It is performed by a representative of the authorized service organization entered into the passport of the fiscal device in the presence of the tax-liable person.

### TYPES OF DOCUMENTS ISSUED BY THE FPR

Until its putting into operation all documents issued by the FPR are marked **“RECEIPT”**. The turnover data is stored only in the operative memory of the device.

After its setting in operation all customer receipts, daily financial reports with zeroing and the FM reports issued by the FPR are marked **“FISCAL RECEIPT”**. The turnover data is stored into the fiscal memory of the device. All other documents issued by the FPR are marked **“SERVICE RECEIPT”**.

# FUNCTIONAL DESCRIPTION OF TREMOL FP24

## FUNCTIONS OF FPR

The FPR is controlled by a software application (SA) through an USB port , Bluetooth interface or WiFi. The device is designed to follow set of commands, arranged logically depending on the operations to be performed. The software application does not have a direct access to the resources of the FPR but may obtain information about all data related to the status of the fiscal device and its fiscal memory.

The FPR is intended to perform the following functions:

- To record and store (under the control of the SA) the data input upon its putting into operation (tax number, date and hour of fiscalization);
- To record and store (under the control of the SA) the rates of 5 tax groups designated with the letters A, B,C,D and E and the date of their update;
- To record and store (under the control of the SA) the header containing information about its owner – name and address of the company/POS;
- To set (under the control of the SA) the correct date and hour (only in zero daily reports) and to update the real-time clock;
- To print (under the control of the SA) fiscal customer receipts and refund receipts;
- To record and store the accumulated daily turnovers of the 5 tax groups;
- To print (under the control of the SA) various fiscal and non-fiscal reports;
- To print (under the control of the SA) unofficial reports including reports for received on account (RA) and paid out (PO) amounts as well as fiscal reports of sales;
- To print (under the control of the SA) diagnostic and other unofficial information.

The FPR remembers its status in cases of power supply failure. If there is a power supply failure during the printing operation the FPR will resume printing when the power supply is restored and will print out an additional line with the report **Power down**.

## PRINTING DOCUMENTS WITH FPR

All fiscal documents issued by the FPR start with the title (pre-programmed lines) and type of voucher and end with the receipt number and the date and time of its printing.

### Customer fiscal receipts

These are the most common documents issued by the FPR. They give an account of the sale transactions, corrections, types of payment and other relevant information.

The fiscal receipts are printed in the following sequence: open a fiscal receipt/refund receipt , the sale transactions are registered, payment is transferred and the receipt is finalized. This is usually done with the following commands 30h, 31h, 32h, 35h, 37h and 38h.

FPR has two optional printing formats for printing the information in the standard customer fiscal receipts – detailed and brief. In the detailed format the information for article name, quantity, single price and total amount is printed in separate lines.

### Copy of the last issued fiscal customer receipt

FPR can print a copy of the last issued fiscal customer receipt. The operation is performed with the command 3Ah. FPR prints a customer receipt marked **"COPY"**.

### Non Fiscal receipts for received on account RA or paid out and PO

FPR keeps track of the cash on hand both for the FPR in general and for the individual operators. It registers all payments received, the types of the individual payments as well as the so called RA and PO amounts. These operations are issued prior to initiation of a receipt with the command 3Bh.

### Reports

The reports are generated by the fiscal printer in response of the corresponding command of the SA. The SA cannot change the type of the report. The following types of reports are supported:

- Daily Report (reading only)
- Daily Fiscal Report with zeroing and record in FM.
- Fiscal Memory report by dates
- Fiscal Memory report by blocks
- Department report ;
- Article report;
- Operator report ;
- Customer report;
- EJ content by dates;
- EJ content by Z Reports;
- EJ content by Receipts;
- Full EJ content.

### Non Fiscal receipts for diagnostic

Diagnostic of the whole FPR. Printing firmware version and checksum, fiscalization status, serial numbers, etc...

### AUTONOMOUS MODE OF THE FPR

This is operation mode that is not driven by the application. To enter in such mode press and hold the paper feed button during turning ON the device. After initialisation FPR start beeping continuously, then the button should be released.

FPR print message for guiding how to reach the functions. The manner is:

- Pressing Feed button lead to printing current action;
- Pressing Feed button again go to the next action;
- Press and hold Feed button start the action

The possible actions are:

- Print Diagnostic
- Print Daily Report (Z)
- Print Daily Report (X)
- Print Fiscal Memory Report (for whole content)
- Bluetooth Enable
- Bluetooth Disable
- Bluetooth forget Paired
- Exit

When the FPR is in open receipt status, only closing of the receipt is possible. Holding the Feed button until beep lead to closing of the open receipt. If there is fiscal receipt - the closure is with payment in cash. If there is non-fiscal receipt it will be closed too.

**Caution!!!** FPR not communicate during autonomous mode. Use the exit action or turn OFF and ON the device



## Protocol of communication with FPR

The manner of data exchange with FPR is Master / Slave. Initiator of the communication is always Application Software (SA). FPR execute the comant sent by SA and return a message depent of the result.

The command could be splitted is few groups, depending of their properties:

- common commands;
- fiscal commands;
- programming commands;
- reading commands;
- printing commands
- receipt operations comands.

For all that their implementation takes place immediately after sending in the presence of the necessary conditions and in compliance with the relevant restrictions and blockages.

An essential feature of the protocol is the manner of issuing fiscal receipts: first a fiscal voucher should be opened; sales and / or other operations are registered (discounts, surcharges, corrections, free text, etc.); finally a payment is made (one or more sufficient to cover the total amount in the voucher), after which the voucher is closed.

For convenience, a command is provided, causing two actions - payment in cash equal to the amount due and subsequent closing

More information about the communication protocols is available at the manufacturer webpage: [www.tremol.bg](http://www.tremol.bg).

For the convenience of the programmers, a library of commands for working with TREMOL FED, with the common name ZFPLab, has been created.

The ZFPLab software package is an automated solution for generating libraries for the main programming languages C #, Java, Visual Basic, JavaScript, Python, etc. and adapting to different platforms (Windows, Linux, Android, Web browser). The latest version can be found on the manufacturer's website <https://tremol.bg/bg/support/zfplab/bg>,

The package also contains a programmer's manual, protocol descriptions, user interface and demo applications of the main commands in different programming languages.