

Fiscal module FM3000

Service manual

1. INTRODUCTION

An intelligent fiscal module FM 3000 is going to enable the use of your computer and open homologised cash register system. An open cash register system is a system that enables to make operations on PC cash register and also operations that are not related to sale as are letters and faxes writing, accounting of the salaries and so on. In other words it will extend computer attributes with the cash register system according the Regulation No. 55/1994 of the Statute roll. The main advantage of the fiscal module is that in the past, you used for business software convenient for you, you do not need to replace it with another, homologised software. It is only necessary to put managing ESC sequences into printing masks of the direct sale, which are used for the communication with fiscal module FM 3000. By means of this simple step is your computer prepared for the usage as a cash register system.

2. The conditions for the certificate acknowledgement

Due to the Certificate for cash register system is not issued for fiscal module but for the whole set (the computer cash register system), user is obliged to:

During the whole period of the cash register system registration on the Tax office is necessary to use only the devices with the electric homologation from the Slovak State Laboratory, particularly for computer, screen, and also for printer of the bills. The user guarantees that these devices would not be replaced with the ones that are not electrically homologised. When used other than electrically homologised device in the set of the computer cash register system, the user is endangered with the sanctions due to certification conditions violation, and also user is endangered with the not-acknowledgement of the certification with all possible consequences. In case you are obliged backup sale records, the tape has to be stored on dark and dry place because of the data has to be readable for five years from the date of the receipt (stub) issuance. If is the control tape stored in electronic form, data has to be achieved on permanent inerasable media CD ROM for e.g.

3. General information

The device is introduced under a business name FM3000. Device FM3000 is an intelligent fiscal module with its won processor that communicates with the computer through serial interface RS232 or USB 2.0 interface. FM 3000 sends processed documents directly to connected printer. Module enables and independent sales records administration and following calculation of balances, which are stated in Regulation no. 33/1994 of the Statute roll. Module does not communicate with computer if the printer is disconnected for document printing. Fiscal module is a computer using input and output peripheral units of superior computer, but is entirely independent from it. If we want to define functions of the module FM3000, it is basically a small electronic cash register without keyboard, display and printer. Fiscal module is powered by source of superior computer. Module does not have own switch, so it is turned on/off when is superior computer or source turned on/off too.

Since the module communicates with a superior system through standard serial interface RS232, the best option of the installation is in three basic areas:

- UNIX, QNIX and terminal networks (external version),
- Computer network Nowell,
- Applications, where the software used for sale and stock records is suitable for the user and user intents to use it in future without a supplementary homologation of the cash register system;
- For the users who want to expand the attributes of their computer with ones of cash register that meet the standard of Regulation no. 55/1994 of the Statute roll, about ways of keeping sale records using a cash register.

4. Attributes of the fiscal module

From the construction point of view, it is an independent microcomputer system, which passes only the correct data and registers them in a voltage independent memory EEPROM. This memory is not erasable, without the fiscal module opening. Fiscal module cooperates with all operation systems, which are able to communicate through serial port RS232 (MS DOS, MS Windows 9x, 2000, XP, OS2, UNIX, QNIX ...). Since fiscal module does not require **any resident program** neither a **link** module it is not dependant on a programming language used for creating of a cash receipt (slip, stub). F3000 controls and records independently from computer program only tax correct data sent to the receipt printer. So far, the problem consisted in homologation of UNIX cash register systems that are not adjustable for fiscal module installation, because the terminal does not have disc neither free slots for expansion cards. Based on these facts, VAROS union started to develop and manufacture an **external kit** (set of components, which modifies the internal module to external). FM 3000 is placed between printer and computer. The module can download characters sent from the computer to printer and it stores them in its memory and evaluates them according to standard ESC sequences (control characters). If the data are correct, it processes them and sends them to the printer. At the same time it actualises figures in tax registers (GT1, GT2, GT3, ordinal number of receipt, taxable income for 0% and 19%). FM3000 enables processing of daily, monthly and annual balances, while all the data needed for executing these balances derives from its internal memory and not the computer memory. All tax data are stored in the non-erasable memory and whatever access or change is not possible unless the seal is damaged and module opened. Every authorized service engineer has their own password assigned and through which he can alter the data. That means it is possible to identify the last person who changed the data, which are not accessible to a common user, who can access the tax data only by damaging the seal.

The above-mentioned brief description results in necessity of printing masks modification enabling printing of receipts on printer, It is self-active in printing the header, date, time and numbering of the slips. It also calculates VAT on the receipts and balance sheets, continuous daily, monthly and annual balance values, as well as values of GT1-GT3 receipts printing program only sends basic information and through managing ESC sequences, it informs FM3000 about their importance. Said in the other words, if you are satisfied with your current business managing software and the program providers are willing to modify printing output slot in accordance with this guide, the installation of FM3000 is and ideal solution for you.

5. Technical description

Fiscal module is a device that monitors and stores data of cash receipts. Fiscal module on the base of input data evaluates type of input file. If there is a cash receipt on the input, connected printer prints it. If there is not a cash receipt or if there is a file that fiscal module is not able to identify, document is filtered and printer does not print it.

Fiscal module is a device with own processor, memory modules, and timer and input/output ports. Incoming input data are evaluated by program that is permanently stored in the processor of the fiscal module. According to the processor evaluation are particular fiscal data stored in voltage independent memory with 64MB capacity.

In this memory are stored daily monthly and annual balances. Balances are stored in memory permanently. It is possible to print any balance using command from superior application. In memory is created also so-called "electronic control tape" Particular receipts are stored through system FIFO and after overflowing capacity system overwrites the oldest receipts. Printing copy of the receipt from control tape can call command from superior application.

Fiscal module is device with own logic and evaluation. As input device we can use computer, terminal or other type of hardware able to communicate through serial line.

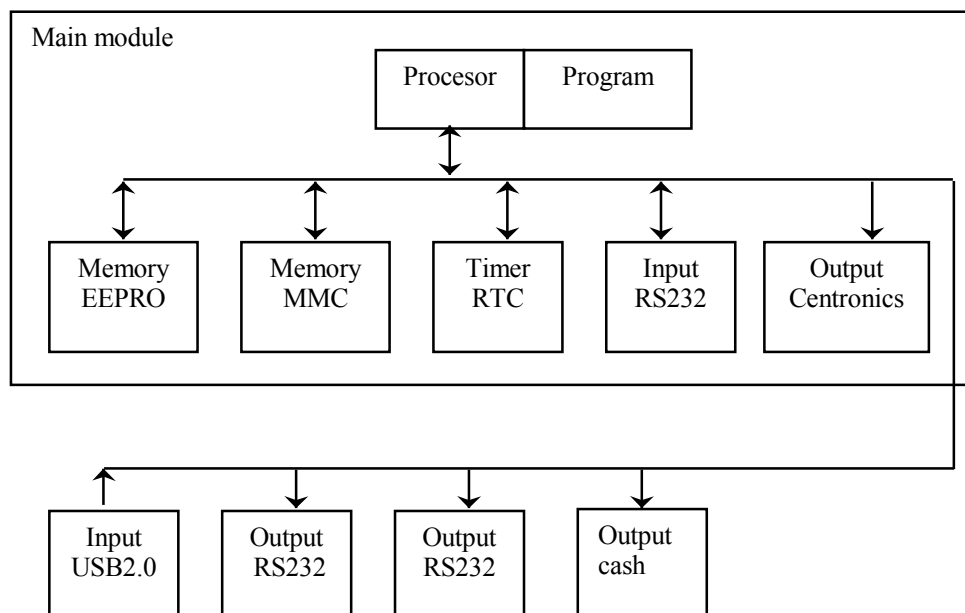
The fiscal module configuration is stored into 32 kB EEPROM memory. This memory has hardware protection and change of any data is possible only through mechanical permission of writing. Timer in fiscal module has backup battery CR2032 in case the supply voltage disconnection.

There is following information stored in EPROM memory:

- Name and address of tax subject- text heading
- Document footing
- Tax identification number
- Tax code of the cash register
- Printing mask for VAT summary of receipts
- Graphic heading (seal)
- Text chains in particular balances
- Particular rates of VAT
- History with time information about performed change of VAT rate
- 5 types of means of payment (cash, cheques, cards, meal tickets...)

Fiscal module has own timer (real time clock – RTC). Date and time printed on particular receipts is automatically supplied from internal timer.

Picture No.1. Block diagram of the fiscal module



Picture No.2: EEPROM memory.

Whole memory is protected. Writing to EEPROM is possible only after mechanic short circuit of jumper SW1.

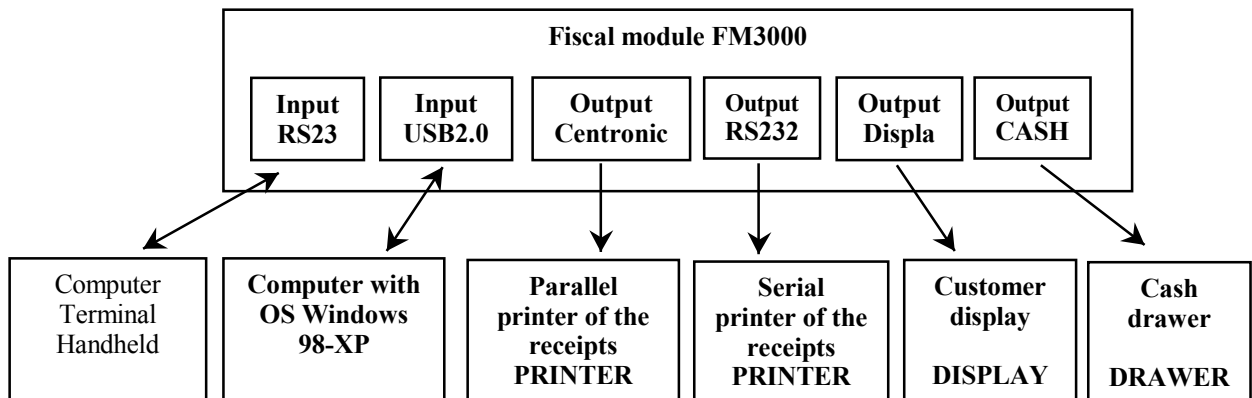
Memory EEPROM 32kB
Time history of VAT changes
5 VAT rates per program
5 means of payment per program
Permanent text chains in receipts and particular balance
Printing mask of VAT summary ram
Text footing of receipt 1024B per
Text heading of receipt 2048B Tax number Cash register code
Graphic heading 10240B per

Picture No. 3: Memory MultiMediaCard.

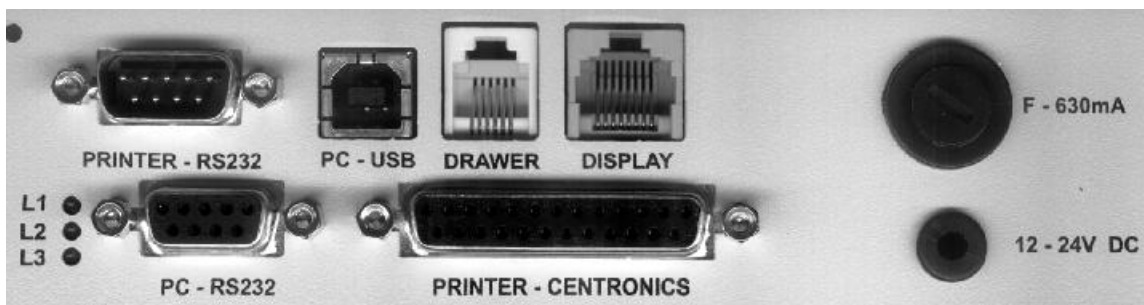
The CRC16 code controls all memory operation (writing/reading).

Memory MMC 64MB
Storage- 50 annual balances per program
Storage 200 monthly balances per program
Storage 3,000 daily balances per program
Storage of receipts (30,000.00 receipts, maximum 50 MB of electronic tape)

Picture No. 4: Cooperation of the fiscal module with other devices

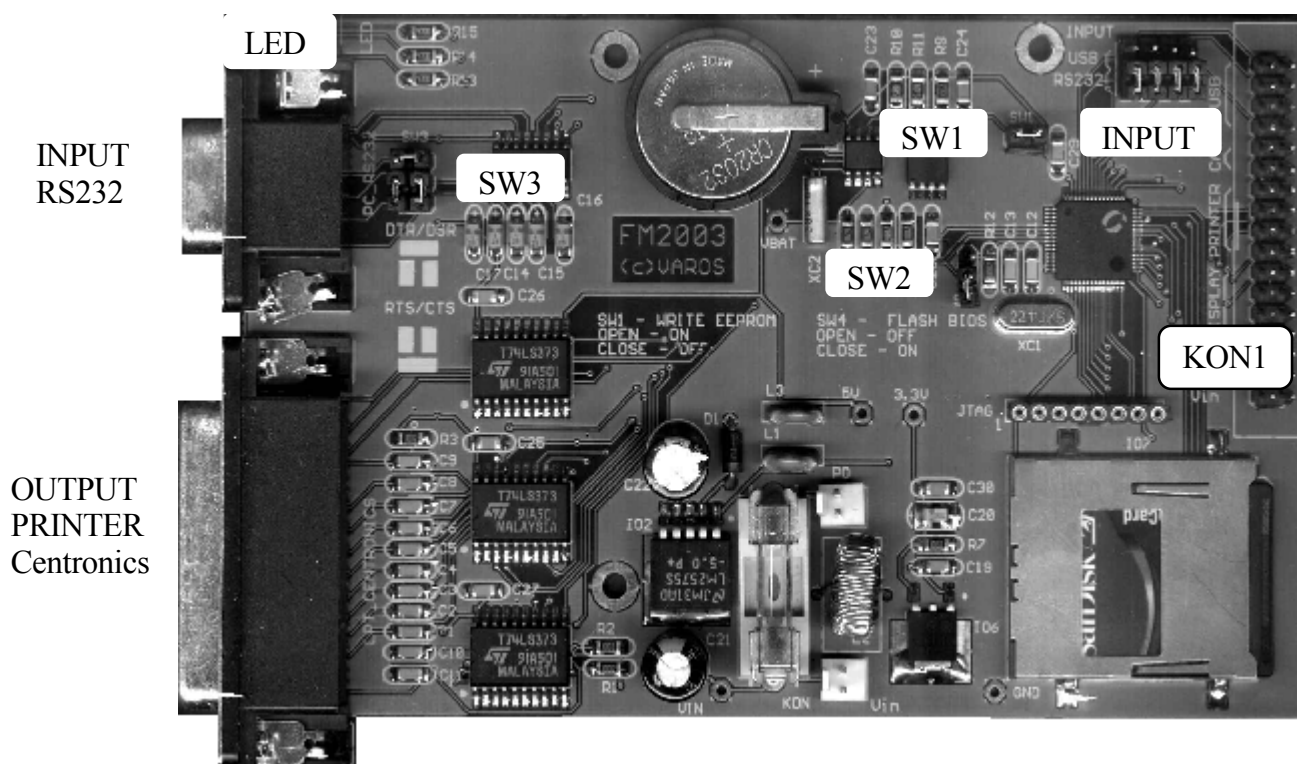


Picture No.5: Connectors of fiscal module for external device connecting

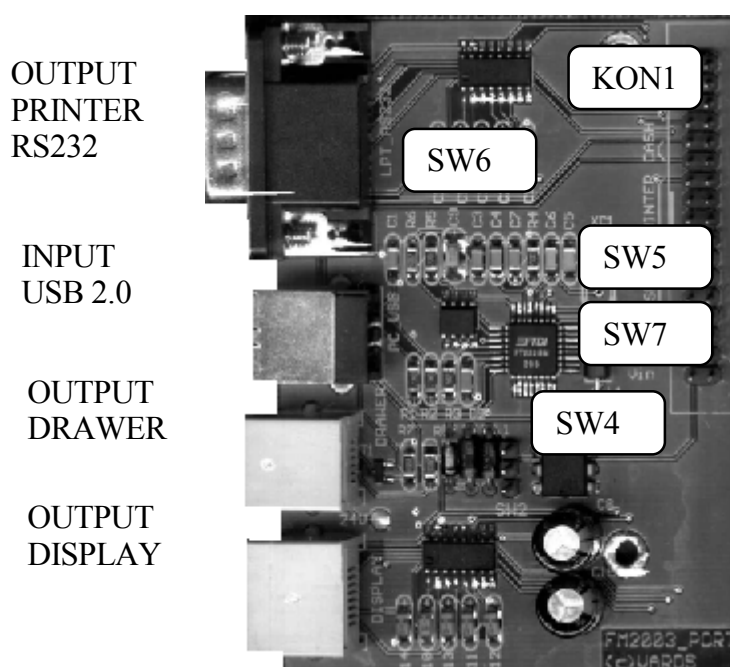


6. Meaning of the connectors and switchers of fiscal module.

Fiscal module FM3000 – switch base. Serial input RS232, output to paralel printer.



Fiscal module FM3000 is extending input/output module. Extended with USB 2.0, input to serial printer, connector to connect cash display RS232, connector for cash drawer opening with 12-24V coil.



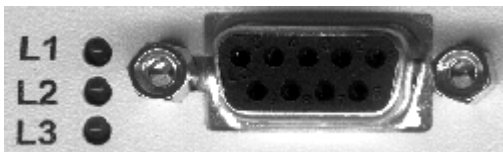
Meaning of the connectors

SW1 - data protection in EEPROM
 OPEN – writing disabled
 CLOSE – writing enabled
 Default CLOSE.

SW2 - Flash BIOS.
 Enables BIOS burning in fiscal module.
 OPEN - BIOS is protected HW
 CLOSE – it is possible burn BIOS. After burning it is necessary to switch writing protection on.
 Default OPEN.

SW3 - HW managing data output.
 Managing setups DTR/DSR or RTS/CTS. For correct characters reception it is necessary to adjust managing supported by application for receipts printing
 Jumpers is necessary adjust according white mark on

- switch base Default DTR/DSR.
- SW4 - output voltage for opening of the cash drawer
 For supply voltage of fiscal module 12V
 CLOSE 1-2 - voltage 24V for the cash drawer
 CLOSE 2-3 - voltage 12V for the cash drawer
 For supply voltage of fiscal module 24V
 CLOSE 1-2 - *** **Do not use this option, it can destroy rectifier doublet** ***
 CLOSE 2-3 - voltage 24V for the cash drawer
 Default CLOSE 1-2.
- SW5 - Fiscal module supply from USB port. If is the module supplied from USB port, connector for cash drawer opening is out of function.
If fiscal module is not supplied from USB port, SW5 has to be opened !
 OPEN - fiscal module is supplied from external source.
 CLOSE - fiscal module is supplied from USB port of computer
 Default OPEN.
- SW6 - Input of 5V voltage supply to 9 pin of connector LPT_RS232.
 OPEN - 9 PIN of the connector is not connected
 CLOSE – the 5V voltage input on 9 PIN of the connector
 Default OPEN.
- SW7 - Data flow managing on virtual serial port that created by USB driver in computer during communication of the fiscal module through USB port.
 CLOSE 1-2 - DTR/DSR
 CLOSE 2-3 - RTS/CTS
 Default CLOSE 1-2.
- INPUT - Options for data input: from RS232 or USB port.
 It is necessary adjust jumpers according to the legend on switch base.
 USB input is possible to use for operation systems Apple OS-8, OS-9 and OS-X,
 Linux Kernel 2.4.0 and higher, Windows 98 / ME / 2000 / XP, Open BSD version 3.2 and higher, Free BSD version 4.7 and higher. Default RS232.UT - RS232
- KON1 - Connector for connection fiscal module with extending input/output module.
- LED - After voltage connection fiscal module performs its auto test of proper functionality of



particular internal components. Tests check connection of the printer for printing receipts.
If printer does not respond or is offline, fiscal module does not respond any command.

LEDs indicate mode of fiscal module. During the test are LEDs on in compliance with running test. After the tests finish LED diodes indicates status of fiscal module.

ON - LED is on, OFF – LED is off

LED1	LED2	LED3	Condition of fiscal module FM3000
ON	OFF	ON	The MMC memory does give any response or is not initialised.
OFF	ON	OFF	Normal situation. Module is OK printer is connected.
ON	OFF	OFF	Timer error.
ON	ON	OFF	Printer is in mode BUSY. Test is performed before each printing.
OFF	ON	ON	EEPROM memory does not respond.
OFF	OFF	ON	Loading of the turnover from issued receipts in MMC memory.
ON	ON	ON	The MMC memory formatting or burning new BIOS. During the MMC memory formatting computer screen shows message MASTER RESET ZAC. After formatting ended screen shows text MASTER RESET END. After BIOS burning shows text FLASH.

7. Features of communication ports

There are two connectors on fiscal module. Input RS232 and output Centronics.

Input port.

Standard serial port RS232. Connector CANNON 9F

- Parameter of port
- number of bits (8)
 - number of stop bits (1)
 - Transmission speed (9600 or 57600) it is possible adjust in service program
 - parity none (N)
 - Data flow control DTR/DSR or RTS/CTS it is possible adjust with help of jumpers.

Specification of serial RS -232C compatible port .

- Signal level
- Logic „1“ -3 up to -15 V
 - Logic „0“ 3 up to 15 V

Output port.

Standard parallel port Centronics. Connector CANNON 25F

- Data flow control STROBE/BUSY

Description of pins (male) of Cannon 9PIN connector

Pin number	Pin name	Flow orientation	Function
1	CD	Input	Carrier signal detector
2	RxD	Input	Data reception
3	TxD	Output	Data transmission
4	DTR	Output	Data terminal ready. „0“ – fiscal module informs of ability to receive from PC (PC can send data only if state „0“ is detected on this pin)
5	SG		Signal ground
6	DSR	Input	Data terminal ready. „0“ - PC informs of ability to receive from fiscal module (module can send data to PC only if „0“ state is detected on this pin).
7	RTS	Output	Call on transmission
8	CTS	Input	Readiness for transmission
9	RI	Input	Calling indicator

Description of connecting cable between fiscal module and computer

For connection is used direct serial cable. On side of fiscal module is connector Cannon 9F (female) and on side of computer is connector Cannon 9M (pins-male), or Cannon 25M (pins).

Side of fiscal module Cannon 9F	Side of computer Cannon 9M	Side of computer Cannon 25M
1 CD	1 CD	8 CD
2 RxD	2 RxD	3 RxD
3 TxD	3 TxD	2 TxD
4 DTR	4 DTR	20 DTR
5 SG	5 SG	7 SG
6 DSR	6 DSR	6 DSR
7 RTS	7 RTS	4 RTS
8 CTS	8 CTS	5 CTS

Description of connecting cable between fiscal module and serial printer

Intersected serial cable is used for connection. On side of fiscal module is connector Cannon 9M (pins) and on side of computer is connector Cannon 25F (female).

Side of fiscal module Cannon 9M	Side of printer Cannon 25F
1 CD	4 RTS
2 RxD	2 TxD
3 TxD	3 RxD
4 DTR	6 DSR connect with 5 CTS
5 SG	7 SG
6 DSR connect with 8 CTS	20 DTR
7 RTS	8 CD

Description of connecting cable between fiscal module and parallel printer

Classical cable so called Centronics cable is used for connection. On side of module is connector Cannon 25PIN/F (female) and on printer side is connector MC36SP.

! Never use other type of interface than specified!
! Connect the port only when power off!

Description of connector RJ11 for cash drawer connecting

Connector RJ11 connects cash drawer with coil 12/24V with fiscal module. Fiscal module automatically sends impulse for cash drawer opening before printing of the receipt. Command for drawer opening is possible to call also from superior application by sequence ESC "o", (see programmer manual).

Before connecting into the socket it is necessary to adjust SW4 value voltage for coil. If on SW4 is connected pin 1-2 the output voltage for coil is double than feeding voltage of fiscal module.

SW4 - output voltage value for cash drawer.

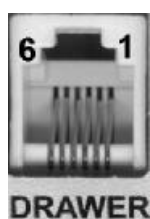
If is fiscal module fed from USB port the connector for cash drawer opening does not work.

Feeding voltage of fiscal module 12V.

- CLOSE 1-2 - 24V voltage for cash drawer
- CLOSE 2-3 - 12V voltage for cash drawer

Feeding voltage of fiscal module 24V.

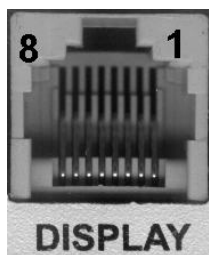
- CLOSE 1-2 - *** **Do not use this option, it can destroy rectifier doublet** ***
- CLOSE 2-3 - 24V voltage for cash drawer



PIN	DESCRIPTION
1, 2	NC - unconnected
3	State of cash drawer. Some drawers are supplied with state switch (open-closed). Fiscal module detects pin status and sends this information back to the computer.
4	Drawer IN. Input to coil – voltage for coil 12/24V; see SW4.
5	Drawer OUT. Output from coil – coil switching. Maximum current of coil is 0,8A.
6	GND- grounding. Between 3 rd and 6 th pin of connector is connected switcher of cash drawer. If it is connected on 3 rd pin, level is 5V.

Description of connector RJ45 for connecting cash register display

Connector RJ45 connects cash register display to fiscal module. From connector RJ45 comes outlet of serial port RS232. Data to be shown on display are sent with prefix ESC ">" (see programmer manual)



PIN	DESCRIPTION
1, 2	Display feeding voltage 5V
3, 4	GND
5	DSR
6	RxD
7	DTR
8	TxD

8. Programmer manual

Control of fiscal module FM3000 is very similar to control and driving of printers. It means that it has defined operate characters called also **ESC** sequences. All defined functions are called by these sequences.

Programmer does no program heading, tax number, cash register number, he/she also does not calculate daily, monthly and annual balances nor calculates tax on receipts. Module with its processor ensures above-mentioned functions. Programmer programs particular text items of receipt and operate ESC sequences that define to module what to perform. If the module does not receive in text chains ESC sequences that are commands what is to be performed module poses as a perfect filter. It means that module does not release any data and filters all text chains (it does release anything to printer). If module receives operate sequences and recognizes them it performs demanded task. For example, if we want to make annual balance we send ESCd and other things provide FM3000.

Allowed ESC sequences

Sequences used for creating receipts

- ESC b - start of receipt
- ESC k - information about that comes total sum per receipt
- ESC e - end of receipt
- ESC Px - x=<1-5>, defines mean of payment that were used to pay receipt (cash, cheques, and total. More means of payment can be used to pay a receipt.
- ESC > - chain that follows after ESC sequence is not processed but it is redirected to display connector. Redirecting is cancelled after acceptance of characters CR+LF
- ESC F - short operate sequences transfer to printer

Positive ESC sequences

- ESC 1 - information that item has to be added to turnover in tax rate number 1 (19%)
- ESC 2 - information that item has to be added to turnover in tax rate number 2 (x %)
- ESC 3 - information that item has to be added to turnover in tax rate number 3 (0 %)
- ESC 7 - information that item has to be added to turnover in tax rate number 4 (x %)
- ESC 0 - information that item has to be added to turnover in tax rate number 5 (x %)

Negative ESC sequences

- ESC 4 x - information that item has to be deducted from turnover in tax rate number 1 (19%)
- ESC 5 x - information that item has to be deducted from turnover in tax rate number 2 (x %)
- ESC 6 x - information that item has to be deducted from turnover in tax rate number 3 (0 %)
- ESC 8 x - information that item has to be deducted from turnover in tax rate number 4 (x %)
- ESC 9 x - information that item has to be deducted from turnover in tax rate number 5 (x %)

x - / A, B , C / - specifies information about negative item.

A - cancel

B - discount

C – negative item

In negative ESC sequences is possible specify type of negative turnover x. In the framework of negative ESC sequences is sent more detailed information /A, B, C/. If the negative item is not specified, it is automatically cumulated in variable negative item.

Sequences used for printing balance

ESC x - running x- balance
ESC d - daily balance
ESC D - copy of last daily balance
ESC m - monthly balance
ESC M - copy of last monthly balance
ESC y - annual balance
ESC Y - copy of last annual balance
ESC CxYYYYMMDDyyyy - copy of defined document or balance stored in MMC memory

Sequences used for the auxiliary functions

ESC c - last document copy
ESC s - condition of printer
ESC t - time setting
ESC n - non- fiscal document
ESC i - identification of fiscal module building
ESC I - information file building
ESC Q - the last document transfer into PC
ESC F - transfer of short operate sequences for printer
ESC o - cash drawer opening (that is connected to fiscal module connector)
ESC > - chain following after ESC sequence is not processed; it is redirected to display connector. Redirecting is cancelled after acceptance of characters ETX
ESC ~ - erasing of the documents from MMC memory after daily balance performing

Meaning and interpretation of characters in instruction:

ESC	- character 1B <H> = 27 <D>	operate character ESCape
CR	- character 0D <H> = 13 <D>	cursor home
LF	- character 0A <H> = 10 <D>	enter
ETX	- character 03 <H> = 3 <D>	end of chain
FF	- character 0C <H> = 12 <D>	pagination
<H>	- hexa symbol value	
<D>	- decimal symbol value	

9. Balance and auxiliary ESC sequences

Function: Daily balance accomplishing

Command: ESC d
ESC d Yes - extended mode

Format: 1B<H>64<H>
1B<H>64<H>59<H>65<H>73<H>

Description: After particular setting of this sequence the daily balance is automatically accomplished. During daily balance are calculated particular daily turnovers and subsistent taxes. Also are accounted daily and cumulated grand totals. A number of daily balances are increased and daily balance is printed. A number of daily balances are increased. The values of running balance and ordinal numbers of receipts are cancelled out. If receipts contained data about means of payment, daily balance will print summary of means of payment. If it is activated extended mode (protected against overwriting) after sending ESC d / fiscal module would print daily balance only after extended command ESC d Yes.

Form of document:

VAROS - združenie Rudlovska cesta 53 974 00 Banská Bystrica			
IC VAT: _____	DKP: _____		
Docum.: 210	Poc. DB: 5/2		
Date: 5.05.2004	Time: 15:55		
DAILY BALANCE			
[Rate]	[Tax base]	[Tax]	[Turnover]
19%	1000.00	190.00	1190.00
0 %	500.00	0.00	500.00
Turnover summary			
Turnover total:			1690.00
From that rounded off			5.40
Cancelled:			300.00
Discount:			100.00
Negative:			100.00
M. of pay. 1:			1000.00
M. of pay. 2:			690.00
CUMMULATED			
GT1 Gross:			2190.00
GT2 Net:			1690.00
GT3 Negative:			500.00

Ordinal number of daily balance in month/ number of

In balance are only tax rates with non-zero turnover. Max. 5. If the receipts were round off there is expressed round of per day

If the negative items were defined it will be printed summary of particular negative items.

If were means of payment defined in receipt the summary of them will be printed Max. 5

Cumulated values of grand totals from last annual balance

Function: Monthly balance accomplishing

Command: ESC m

ESC m Yes - extended mode

Format: 1B<H>6D<H>

1B<H>6D<H>59<H>65<H>73<H>

Description: After particular setting of this sequence the monthly balance is automatically accomplished. During monthly balance are calculated particular monthly turnovers and subsistent taxes. Also are accounted monthly and cumulated grand totals. A number of monthly balances are increased and monthly balance is printed. A number of daily balances are increased. The new values of grand totals are stored in independent memory. The values of current and daily balance are cancelled out. The ordinal numbers of daily balances and receipts are cancelled out. If receipts contained data about means of payment, daily balance will print summary of means of payment.

If it is activated extended mode (protected against overwriting) after sending ESC m / fiscal module would print monthly balance only after extended command ESC m Yes.

Form of document:

VAROS - združenie Rudlovska cesta 53 974 00 Banská Bystrica IC VAT: _____ DKP: _____ Poc. MB:2 Date: 31.05.2004 Time:18:00			
MONTHLY BALANCE			
[Rate]	[Tax base]	[Tax]	[Turnover]
19%	10000.00	1900.00	11900.00
0 %	5000.00	0.00	5000.00
Turnover summary			
Turnover total:			16900.00
Cancelled:			3000.00
Discount:			1000.00
Negative:			1000.00
M. of pay. 1:			10000.00
M. of pay. 2:			6900.00
CUMULATED			
GT1 Gross:			21900.00
GT2 Net: :			16900.00
GT3 Negative:			5000.00

Poc.MB = ordinal number of monthly balance. The number is annulled after annual balance

In balance are only tax rates with non-zero turnover. Max. 5.

If the negative items were defined it will be printed summary of particular negative items.

If were means of payment defined in receipt the summary of them will be printed Max. 5

Cumulated values of grand totals from last annual balance

Note: Monthly balance automatically controls accomplishing of daily balance. If user forgets to accomplish last daily balance after calling monthly balance device will automatically accomplish daily balance first.

Function: Accomplishing of current X_balance

Command: ESC x

Format: 1B<H>78<H>

Description: After particular setting of this sequence the current X-balance is automatically accomplished. During X-balance are calculated particular current turnovers from last daily balance also are accounted current cumulated. Values in particular turnovers will stay unchanged.

Form of document:

VAROS - združenie Rudlovska cesta 53 974 00 Banská Bystrica			
IC VAT: _____	DKP: _____		
Document: 210	Poc. DB: 5/2		
Date: 5.05.2004	Time:15:55		
<hr/>			
X - BALANCE			
<hr/>			
[Rate]	[Tax base]	[Tax]	[Turnover]
19%	1000.00	190.00	1190.00
Turnover summary			_____
Turnover total:			1190.00
Cancelled:			300.00
<hr/>			
M. of pay. 1:			1190.00
CUMULATED			
GT1 Gross			1490.00
GT2 Net:			1190.00
GT3 Negative:			300.00
<hr/>			

Ordinal number of following daily balance in month/ number of balances in current day

In balance are only tax rates with non-zero turnover. Max. 5.

Summary of particular negative items and means of payment.

Cumulated values of grand totals from last annual balance

Function: Annual balance accomplishing

Command: ESC y

ESC y Yes - extended mode

Format: 1B<H>79<H>

1B<H>79<H>59<H>65<H>73<H>

Description: After particular setting of this sequence the annual balance is automatically accomplished. During monthly balance are calculated particular annual turnovers and annual grand totals. A number of annual balances are increased and annual balance is printed. Values of current, daily and monthly balances are cancelled out. The ordinal numbers of daily balances and monthly balances and receipts are cancelled out. Values of particular turnovers and grand totals are cancelled out. It is so called *fast reset of fiscal module*. Copies of previous daily, monthly and annual balances stay unchanged. It is possible to print them or read them through service program. If it is activated extended mode (protected against overwriting) after sending ESC y / fiscal module would print monthly balance only after extended command ESC y Yes.

! WARNING ! This balance can accomplish only service centre!

The annual balance accomplishing has to be recorded in service book of the cash register!

Form of document:

VAROS - združenie		
Rudlovska cesta 53		
974 00 Banská Bystrica		
IC VAT: _____	DKP: _____	
Poc. RU:2	Date31.12.2004	Time:24:00

ANNUAL BALANCE		

_____ C U M U L A T E D _____		
GT1 Gross		40200.00
GT2 Net:		24100.00
GT3 Negative:		-16100.00

Poc.AB – ordinal number of annual balance.

Cumulated values of grand totals since last annual balance.

Note : Annual balance automatically controls accomplishing of monthly and daily balance. If user forgets to accomplish last daily or monthly balance after calling monthly balance device will automatically accomplish daily and monthly balance first.

Function: Accomplishing of daily balance copy

Command: ESC D

Format: 1B<H>44<H>

Description: After particular sequences is automatically accomplished copy of last daily balance. Difference between copy and original is that on the balance copy is printed current date and time when was the copy of daily balance accomplished.

Form of document: Look at the form of the daily balance!

Note : Copy of daily balance can be called whenever during the sale until accomplishing following daily balance. Copy of last daily balance is stored also after monthly balance accomplishing.

Function: Accomplishing of monthly balance copy

Command: ESC M

Format: 1B<H>4D<H>

Description: After particular sequences is automatically accomplished copy of last monthly balance. Difference between copy and original is that on the balance copy is printed current date and time when was copy of monthly balance accomplished.

Form of document: Look at the form of the monthly balance!

Note: Copy of monthly balance can be called whenever during the sale until accomplishing following monthly balance.

Function: Accomplishing of annual balance copy

Command: ESC Y

Format: 1B<H>59<H>

Description: After particular sequences is automatically accomplished copy of last annual balance. Difference between copy and original is that on the balance copy is printed current date and time when was copy of annual balance accomplished.

Form of document: Look at the form of the annual balance!

Note: Copy of annual balance can be called whenever during sale until accomplishing following annual balance.

Function: Copy of the document from electronic tape

Command: ESC C x YYYYMMDDyyyy CR

Format: 1B<H>43<H> xYYYYMMDDyyyy 0D<H>

Description: Fiscal module enables copy of the document printing or balance from electronic control tape. Module stores 50 annual, 200 monthly and 3,000 daily balances and 20,000 (or maximum 50 MB) documents. After particular sequence setting is automatically printed copy of demanded document. Parameters specify selection of the document. Receipt has to be defined by all parameters. Parameter yyyy of balances is empty. It demanded document does not exist printer will be printing it.

x – type of document	B	- cash receipt
	D	- daily balance
	M	- monthly balance
	Y	- annual balance

YYYY - year of document issuance <2000 - 2999>. It has to contain four digits.

MM - month of document issuance <01 - 12>. It has to contain two digits.

DD - day of document issuance <01 - 31>. It has to contain two digits.

yyyy - number of cash receipt <1-9998>.

Balances do not have this parameter. If is as the number of the document set value 9999 device will print all documents performed in particular day. (It is possible to use this function during printing control tape at the end of the day).

Example: Printing of receipt number 777 issued on 9th May 2004

```
ESC C B 2 0 0 4 0 5 0 9 7 7 7 CR
1B<H>43<H>42<H>32<H>30<H>30<H>34<H>30<H>35<H>30<H>39<H>37<H>
37<H>37<H>0D<H>
```

Printing of all cash receipts from 10th May 2004

```
ESC C B 2 0 0 4 0 5 1 0 9 9 9 9 CR
1B<H>43<H>42<H>32<H>30<H>30<H>34<H>30<H>35<H>31<H>30<H>39<H>
39<H>39<H>39<H>0D<H>
```

Printing of daily balance from 16th August 2004

```
ESC C D 2 0 0 4 0 8 1 6 CR
1B<H>43<H>44<H>32<H>30<H>30<H>34<H>30<H>38<H>31<H>36<H>0D<H>
```

Printing of monthly balance from 31st December 2003

```
ESC C M 2 0 0 3 1 2 3 1 CR
1B<H>43<H>4D<H>32<H>30<H>30<H>33<H>31<H>32<H>33<H>31<H>0D<H>
```

Printing of annual balance from 31st December 2004

```
ESC C Y 2 0 0 4 1 2 3 1 CR
1B<H>43<H>59<H>32<H>30<H>30<H>34<H>31<H>32<H>33<H>31<H>0D<H>
```

Function: How to detect printer status

Command: ESC s

Format: 1B<H>73<H>

Description: After sending of sequences fiscal module sets up DSR /CTS/ signal as active if it is printer on and prepared for receiving data and non- active if the printer is not prepared to receive data. This signal is automatically switched on active state if printer is active and connected. Sequence can test parallel and serial printers.

Note: DSR /CTS/ signal response time is approximately 300 mS.

Function: The internal timer date and time of adjustment.

Command: ESC t 1 1 1 1 1 6 "day ones" 7 "day tens" 8 "month ones"
9 "month tens" : "year ones" ; "year tens" 4 "hour ones"
5 "hour tens" 2 "minutes ones" 3 "minutes tens" CR

Format: 1B<H>74<H>31<H>31<H>31<H>31<H>31<H>36<H>"day ones"
37<H> "day tens"38<H>"month ones"39<H>"month tens"
A<H>"year ones"3B<H>"year tens"34<H>hour ones"
35<H> hour tens 32<H>"minutes ones"33<H>"minutes tens"0D<H>

Description: Function can adjust only one of the parameters or more parameters at once. Command has to start with ECS t 11111 and after could decide which of the parameters should be adjusted. The quoted numbers can have values<0,1,2,3,4,5,6,7,8,9 >. Command has to finish with 0D<H>.

Note: Fiscal module has its own timer that is not depending from the feeding voltage. This sequence is used when is synchronized time with PC or when is change to daylight saving and vice versa.

Function: Non-fiscal document printing

Command: ESC n ,, text to be printed “ FF

Format: 1B<H>51<H>“Text to be printed“ 0C<H>

Description: With the help of this sequence are printed short non-fiscal documents. Sequence is used to print lists of coins; withdrawal and deposit cash in cash desk, description of the recipes in pharmacies etc. After enter this sequence fiscal module prints non-fiscal document. This kind of the document starts with the text: **This is not fiscal document** and this text is periodically repeated after each 15 lines of the entered text.

Note: Text has to finish with characters 0C<H>. If you want to send character of pagination it is entered character FF<H>. Module converts this character automatically to 0C<H>

Function: Accomplishing of the copy of last document

Command: ESC c

Format: 1B<H>63<H>

Description: After enter of this sequence is accomplished copy of cash receipt. In the first line of document is printed text. *** Cash receipt copy ***
Date and time of document is like in the original.

Note: This command can call only copy of cash receipt and not copy of balances.

Function: Fiscal module identification

Command: ESC i

Format: 1B<H>69<H>

Description: After sending of this sequence fiscal module gives back information, it provides identification data: name of fiscal module "FM3000" and firmware version /2Byte/. The new firmware version can be burnt into module with the help of service program. Fiscal module communicates with computer through serial or USB interface with HW data flow control.

Note: Fiscal module communicates with whatever terminal adjust as communication parameters of the port - 9600,N, 8,1

Function: Short operate sequences transfer

Command: ESC F ,, operate sequence “ ETX

Format: 1B<H>46<H>“Operate sequence“ 03<H>

Description: With this sequence are sent short operate sequences to printer. It is used to command switch to print head of writing recipes, for opening cash register drawer without printing, for change of fonts ...

Note: Operate sequence has to be ended with characters 03<H>. If the character 03<H>, does not come, module prints automatically informing text chain, if exceeds 17 characters. Sequence can be used also in framework of cash receipt printing.

Function: The last document transfer in the PC

Command: ESC Q

Format: 1B<H>51<H>

Description: After sequence sending fiscal module sends to the computer last receipt. Module communicates with PC through serial or USB interface with HW data flow control.

Note: This command can transfer to the computer whatever document last printed in cash register printer.

Function: Info file creation

Command: ESC I

Format: 1B<H>49<H>

Description: After particular sequence sending fiscal module accounts and sends to the computer information file about particular turnovers running values. Module communicates with computer through serial or USB interface with HW data flow control.

This file contains following data:

- Fiscal module identification code
- Document ordinal number
- Daily and monthly balance ordinal number
- Running turnovers of particular VAT taxes
- Running minus turnover
- Date and time from fiscal module timer

Form of document:	1	Fiscal module identification code
	5	Document ordinal number
	3	Last daily balance ordinal number
	4	Last monthly balance ordinal number
	100,00	Running turnover in tax no.1
	1000,00	Running turnover in tax no.2
	500,00	Running turnover in tax no.3
	1500,00	Running turnover in tax no.4 / tax rate 0% /
	50,00	Running minus turnover
	14.07.2003 13:50	Date and time from fiscal module timer

Note: This command can bring into the computer running data and ordinal numbers of particular balances. Fiscal module communicates with whatever terminal adjusted for the port communication parameters - 9600,N, 8,1

Function: Cash register drawer opening

Command: ESC o

Format: 1B<H>6F<H>

Description: After sequences is sent impulse for cash register drawer opening that is connected to connector RJ11 /DRAWER/ of fiscal module.

Note: Impulse for cash register drawer opening is sent automatically during the printing of each receipt and balance.

Function: Sending characters to display connected to fiscal module

Command: ESC > "characters to be sent to display " ETX

Format: 1B<H>3E<H>"text chain"03<H>

Description: Through sequences sending are send text chains to connector RJ45 /DISPLAY/ of fiscal module. Fiscal module does not process text chains; it only redirects them to cash register display

Note: Redirecting is automatically ended after characters ETX are received. It is possible to use sequence also in the framework of cash register document.

Function: Control tape deletion

Command: ESC ~

Format: 1B<H>7E<H>

Description: Through sequence are deleted all cash register documents from electronic control tape. Fiscal module does not erase balances. Function is used after are cash sale document downloaded to PC and stored on DVD or CD medium.

Note: Deletion of cash receipts is possible to perform only after daily balance accomplishing.

10. The creating of the cash register receipt

During the receipt creating are all entering characters loaded into the fiscal module internal memory. The fiscal module is processing and evaluating them on the basis of the operate ESC sequences. According above- mentioned evaluation module prints receipt or filters incoming characters. Incoming receipt is processed and it is printed consequently as processed

Fiscal module evaluates module evaluates if the end sum of the receipt coming after **Esc k** equals the sum accounted by module itself on the basis of the prices of particular items (following the ESC0-ESC9 sequence.)

If sent the sum following ESC does not equal accounted value, fiscal module creates error report and receipt is not included into daily or cumulated turnovers GT1-GT3.

If is the difference between amounts 0, fiscal modulo prints receipt and includes it into daily and cumulated turnovers GT1-GT3. If the final sum is not round off 0.50 SKK fiscal module rounds off automatically. Value of round of is added to turnover.

In service program is defined to which tax group has to be added rounding of cash receipts.

ESC0 - ESC9 sequences define the tax group where will be included the sum following particular ESCV sequence. Module automatically recognizes (on the base of ESC sequences) tax rate of particular items. This rate is printed before each item instead of coming ESC0 - ESC9 sequences.

In the document framework is possible to use also auxiliary ESC sequences.

ESC > - chain following ESC sequence is not processed, it is re-directed to display connector. The acceptance of the ETX character is cancelling redirection.

ESC F - transfer of short operate sequence to printer (change of the fonts, change oh printing head..)

With the help of this sequence are sent operate ESC sequences of the printer that are sequences colliding with ESC sequences of fiscal module.

Structure of the cash receipt:

- 1, cash receipt heading
- 2, date, time, ordinal number of receipt
- 3, body of receipt
- 4, total sum of receipt
- 5, VAT summary
- 6, means of payment summary
- 7, variable footing of cash receipt
- 8, constant footing of cash receipt

- *Cash receipt heading* - it is a stabile heading, programmed by service technician to the independent EEPROM memory of the fiscal module. In the service program is possible to define graphic and text heading. The parts of text heading are the tax number (DIČ), registration cash register number and VAT number. When printed, graphic heading is printed before text heading. Receipt heading is printed after sequences ESC b.
- *Date, time and ordinal number of the document* - enters fiscal module automatically after the receipt heading. Date and time is loaded from internal timer that works independently from computer timer. Date and time is printed after sequences ESC b.
- *The body of the receipt* itself consists of the particular items of the goods.
The sum for the particular goods should be preceded by ESC sequence, which informs fiscal

module about the tax category of the goods.

In sum can be also characters <+ - , . >. Module ignores these characters and selects only characters 0 - 9. The characters <+/-> are not relevant for the sum. Module decides only on the base of ESC coming before the sum.

It means that value 10,000.00 could be expressed as:

+ 10,000,00 SKK + 10,000.00 SKK 10 000.00 SKK + 10,000.00 SKK etc...

Positive items sent with ESC sequences are positive turnovers ESC1, ESC2, ESC3, ESC7, ESC0/.

ESC 1 - information that item has to be added to turnover in tax rate number 1 (19%)

ESC 2 - information that item has to be added to turnover in tax rate number 2 (x %)

ESC 3 - information that item has to be added to turnover in tax rate number 3 (0 %)

ESC 7 - information that item has to be added to turnover in tax rate number 4 (x %)

ESC 0 - information that item has to be added to turnover in tax rate number 5 (x %)

Negative items are sent with ESC sequences in compliance with negative turnovers /ESC4, ESC5, ESC6, ESC8, ESC9/. In negative ESC sequences is possible to specify type of negative turnover x.

ESC 4 x - information that item has to be deducted from turnover in tax rate number 1 (19%)

ESC 5 x - information that item has to be deducted from turnover in tax rate number 2 (x %)

ESC 6 x - information that item has to be deducted from turnover in tax rate number 3 (0 %)

ESC 8 x - information that item has to be deducted from turnover in tax rate number 4 (x %)

ESC 9 x - information that item has to be deducted from turnover in tax rate number 5 (x %)

A – cancel

B – discount

C – negative item

If in item is not used specific information “x” about negative item, negative items are automatically cumulated in variable negative item.

In case the negative item x is used in footing of receipt in daily balance is printed summary of negative items in structure cancelled/discounts/negative items.

- *Final sum of cash receipt* – the sum has to be written with two decimals. The sum is preceded by ESC k. If the final sum is not rounded off to 0.5 SKK, fiscal module automatically rounds off receipt as follow:

The decimal sum interval	Rounding	Example
y = <0,00-0,24>	y = 0,00	15,24 = 15,00
y = <0,25-0,74>	y = 0,50	15,25 = 15,50 15,74 = 15,50
y = <0,75-0,99>	y = 1,00	15,75 = 16,00 15,99 = 16,00
- *VAT summary* – performed by fiscal module. Tax sum is in particular rates rounded of to one decimal.

The decimal sum interval	Rounding	Example
VAT <0,00-0,049>	VAT = 0,00	15,049 = 15,00
VAT <0,05-0,099>	VAT = 0,10	15,05 = 15,10 15,099 = 15.10

Printed are only these VAR rates with non-zero interval.
- *Means of payment of summary* – fiscal module can monitor means of payment (cash, cheques, meal tickets, bank card....) used for cash receipt payment. Through service program is possible to define 5 means of payment types. Paid sum for particular mean of payment is sent through sequence ESC P. Paying with particular means of payment is not checked by fiscal module for final sum, it is just for information. Payment with various means of payment is printed in the footing of cash receipts. Cumulated values are in daily and running balances.
ESC P 1 - information about payment with mean number 1

- ESC P 2 - information about payment with mean number 2
- ESC P 3 - information about payment with mean number 3
- ESC P 4 - information about payment with mean number 4
- ESC P 5 - information about payment with mean number 5

Printed are only these means that were used in payment.

- *Variable footing of cash receipt* – superior program can put in the receipt footing variable text. (Identification data for customer, thanks for purchase...
- *Constant footing of cash receipt* – it is the chain programmed by service technician into independent EEPROM memory of fiscal module. It is constant chain printed automatically at the end of each cash receipt. It helps to adjust operate sequences for cash drawer opening, cutting and releasing paper...
Document footing is printed after receiving sequences of the end receipt ESC e.

An example of the receipt creating

Chains and variables in the fiscal module could be change through service program. Preset values of producer are as follows:

Defined means of payment

Mean of payment	Text	Maximum length	Adequate ESC sequence	Currency code
Mean of payment 1	Cash:	32 Bytes	ESC P1	SKK
Mean of payment 2	Bankcard:	32 Bytes	ESC P2	SKK
Mean of payment 3	Meal tickets:	32 Bytes	ESC P3	SKK
Mean of payment 4	Cheques:	32 Bytes	ESC P4	SKK
Mean of payment 5	EURO:	32 Bytes	ESC P5	EURO

Defined VAT rates and text in the receipt footing

Tax	Currency code / permanent length	Variable for accounting length 3Byte /	Adequate ESC sequences	
			Positive	negative
Tax number 1	SKK	19%	ESC 1	ESC 4
Tax number 2	SKK	0%	ESC 2	ESC 5
Tax number 3	SKK	0%	ESC 3	ESC 6
Tax number 4	SKK	0%	ESC 7	ESC 8
Tax number 5	SKK	0%	ESC 0	ESC 9

Rounding value is adjusted that is added to 19% tax rate.

Text following hyphen is only description for programmer, it is not sent to fiscal module.

In following examples are created more types of receipts. According to used ESC sequences in document is possible sent additional information to fiscal module about distinguished positive and negative items (cancelled/discount/negative items), about mean of payment (Cash/Bank card/Meal tickets/Cheques/EURO). These information uses fiscal module during summary, daily and monthly and running balances. Means of payment are also printed in cash receipts.

Receipt No.1 – without summary of negative items.

Document sent to fiscal module

ESCb						; ESCb receipt heading
Name	Pcs	Prc/PU	Tax	Sum	<CR><LF>	; Document body, description line
butter	3ks	25.50	ESC1	51.00	Sk<CR><LF>	; Positive item tax 1
milk 1L	1ks	20.50	ESC1	20.50	Sk<CR><LF>	; Positive item tax 1
bottle	10ks	5.00	ESC3	50.00	Sk<CR><LF>	; Positive item tax 3
bottle	1ks	5.00	ESC6	-5.00	Sk<CR><LF>	; Negative item tax 3
butter	1pcs	25.50	ESC4	-25.50	Sk<CR><LF>	; Negative item tax 1
ESCK				91.00	Sk<CR><LF>	; Total sum
.....						; Variable document footing.
.....						Here is information
.....						; about customer
ESCe						; End of cash receipt

If is accepted sum following ESC equal sum calculated by fiscal module (considered are only numbers following ESCx sequence, positive x=1,2,3,7,0 or negative x=4,5,6,8,9), the complete receipt footing is printed. At the same moment is receipt stored on electronic control tape.

The length of one receipt line is not limited. So it is possible to use for receipts printing wide paper and documents can be wider than 40 characters.

Document printed by fiscal module printer:

Product of VAROS union 53 Rudlovska cesta AURIS 974 01 Banska Bystrica DIC :1020555294 IC VAT:SK1020555294 DKP: xxxxxxxxxxxxxx Document: 4/1 Date:25.05.2004 Time:10:45					According to ESC b fiscal module prints graphic and text heading, ordinal receipt number/or																															
<hr/> <table border="0"> <thead> <tr> <th>Name</th> <th>Pcs</th> <th>Prc/PU</th> <th>Tax</th> <th>Sum</th> </tr> </thead> <tbody> <tr> <td>butter</td> <td>3pcs</td> <td>25.50</td> <td>19%</td> <td>51.00 Sk</td> </tr> <tr> <td>milk 1L</td> <td>1pcs</td> <td>20.50</td> <td>19%</td> <td>20.50 Sk</td> </tr> <tr> <td>bottle</td> <td>10pcs</td> <td>5.00</td> <td>0%</td> <td>50.00 Sk</td> </tr> <tr> <td>bottle</td> <td>1pcs</td> <td>5.00</td> <td>- 0%</td> <td>-5.00 Sk</td> </tr> <tr> <td>butter</td> <td>1pcs</td> <td>25.50</td> <td>-19%</td> <td>-25.50 Sk</td> </tr> </tbody> </table> <hr/> Price total: 91.00 Sk						Name	Pcs	Prc/PU	Tax	Sum	butter	3pcs	25.50	19%	51.00 Sk	milk 1L	1pcs	20.50	19%	20.50 Sk	bottle	10pcs	5.00	0%	50.00 Sk	bottle	1pcs	5.00	- 0%	-5.00 Sk	butter	1pcs	25.50	-19%	-25.50 Sk	Body of cash receipt. Sequences ESC 0 - ESC 9 are replaced with defined VAT rate.
Name	Pcs	Prc/PU	Tax	Sum																																
butter	3pcs	25.50	19%	51.00 Sk																																
milk 1L	1pcs	20.50	19%	20.50 Sk																																
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bottle	1pcs	5.00	- 0%	-5.00 Sk																																
butter	1pcs	25.50	-19%	-25.50 Sk																																
<hr/> <table border="0"> <thead> <tr> <th></th> <th>[Rate]</th> <th>[Base]</th> <th>[Tax]</th> <th>[Turnover]</th> </tr> </thead> <tbody> <tr> <td>VAT1</td> <td>19%</td> <td>38.70</td> <td>7.30</td> <td>46.00 Sk</td> </tr> <tr> <td>VAT3</td> <td>0%</td> <td>45.00</td> <td>0.00</td> <td>45.00 Sk</td> </tr> </tbody> </table> <hr/>						[Rate]	[Base]	[Tax]	[Turnover]	VAT1	19%	38.70	7.30	46.00 Sk	VAT3	0%	45.00	0.00	45.00 Sk	If is the final sum equal to calculated amount for particular items, device prints VAT summary. Document is stored on electronic																
	[Rate]	[Base]	[Tax]	[Turnover]																																
VAT1	19%	38.70	7.30	46.00 Sk																																
VAT3	0%	45.00	0.00	45.00 Sk																																
-----					Here is printed variable footing of the document sent from superior																															

Receipt No .3 – wrong document - total sum is not equal sum of particular items

Document sent to fiscal module

ESCb						; ESCb receipt heading
Name	Pcs	Prc/PU	Tax	Sum<CR><LF>		; Receipt body, descriptive line
butter	3pcs	25.50	ESC1	51.00 Sk<CR><LF>		; Positive item tax 1
milk 1L	1pcs	20.50	ESC1	20.50 Sk<CR><LF>		; Positive item tax 1
bottle	10pcs	5.00	ESC3	50.00 Sk<CR><LF>		; Positive item tax 3
bottle	1pcs	5.00	ESC6	-5.00 Sk<CR><LF>		; Negative item tax 3
butter	1pcs	25.50	ESC4	-25.50 Sk<CR><LF>		; Negative item tax 1
		ESCK		91.10 Sk<CR><LF>		; Total sum is not equal to ; particular items sum
.....						; Variable document footing.
.....						; Here is information about ; customer.
ESCe						; End of cash receipt

Document printed by printer connected to fiscal module

Product of VAROS union 53 Rudlovska cesta AURIS 974 01 Banska Bystrica DIC :1020555294 IC VAT:SK1020555294 DKP: xxxxxxxxxxxxxx Document: 4/1 Date:25.05.2004 Time:10:45				

Name	Pcs	Prc/PU	Tax	Sum
butter	3pcs	25.50	19%	51.00 Sk
milk 1L	1pcs	20.50	19%	20.50 Sk
bottle	10pcs	5.00	0%	50.00 Sk
bottle	1pcs	5.00	- 0%	-5.00 Sk
butter	1pcs	25.50	-19%	-25.50 Sk
Price total:				91.00 Sk
> Nezhoda SUM				
SUM_IN: 91.10 - SUM_TOTAL:				91.00

According to ESC b fiscal module prints graphic and text heading, ordinal receipt number/ordinal number of daily balance, where will be receipt included, date and time of the receipt.

Body of cash receipt. Sequences ESC 0 - ESC 9 are replaced with defined VAT rate.

If the final sum is no equal sum of particular items, the correct sum is shown. Receipt is considered wrong and it is not stored on tape. Information about sum non- equality is printed SUM_IN – sum from PC SUM_TOTAL – sum calculated.

Receipt No.4 – with negative items specification

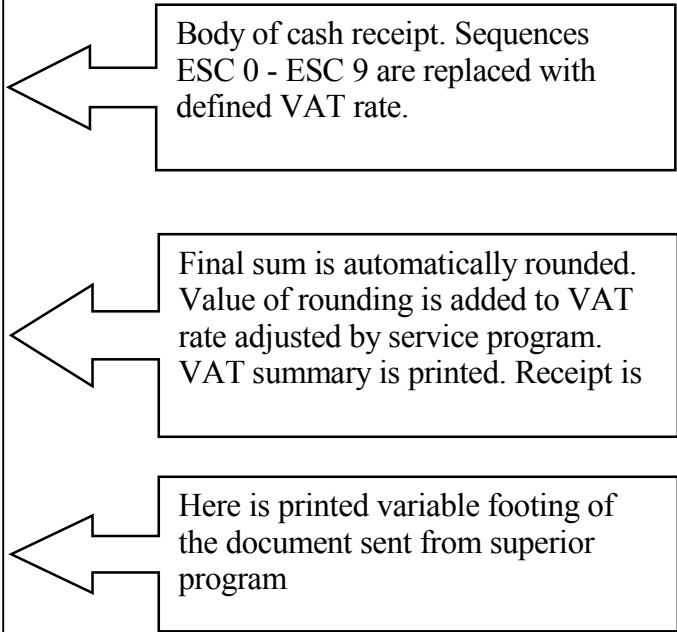
Document sent to fiscal module

ESCb						; ESCb receipt heading
Name	Pcs	Prc/PU	Tax	Sum<CR><LF>		; Receipt body, descriptive line
butter	3pcs	25.50	ESC1	51.00 Sk<CR><LF>		; Positive item tax 1
milk 1L	1pcs	20.50	ESC1	20.50 Sk<CR><LF>		; Positive item tax 1
bottle	10pcs	5.00	ESC3	50.00 Sk<CR><LF>		; Positive item tax 3
bottle	1pcs	5.00	ESC6A	-5.00 Sk<CR><LF>		; Negative item tax 3 cancelled
butter	1pcs	25.50	ESC4A	-25.50 Sk<CR><LF>		; Negative item tax 1 cancelled
Discount 10%		5.00	ESC4B	-9.10 Sk<CR><LF>		; Negative item tax 1 discount
ESCk				81.90 Sk<CR><LF>		; Total sum
.....						; Variable document footing.
.....						; Here is information about customer
.....						; about customer
ESCe						; End of cash receipt

Document printed by printer connected to fiscal module

Product of VAROS union 53 Rudlovska cesta AURIS 974 01 Banska Bystrica DIC :1020555294 IC VAT:SK1020555294 DKP: xxxxxxxxxxxxxx Document: 4/1 Date:25.05.2004 Time:10:45				

Name	Pcs	Prc/PU	Tax	Sum
butter	3pcs	25.50	19%	51.00 Sk
milk 1L	1pcs	20.50	19%	20.50 Sk
bottle	10pcs	5.00	0%	50.00 Sk
bottle	1pcs	5.00	-0%	-5.00 Sk
butter	1pcs	25.50	-19%	-25.50 Sk
Discount 10%			-19%	- 9.10 Sk
Rounding:				0.10 Sk
Price total:				82.00 Sk
=====				
	[Rate]	[Base]	[Tax]	[Turnover]
VAT1	19%	31.10	5.90	37.00 Sk
VAT3	0%	45.00	0.00	45.00 Sk



Note: When you print daily and running balance, negative item are divided into groups as cancelled/discounts/negative items. Only non-zero items are printed
See example of daily and running balance.

Receipt No.5 – with means of payment specification

Document sent to fiscal module

```

ESCb                                     ; ESCb receipt heading
Name      Pcs  Prc/PU      TaxSum<CR><LF> ; Receipt body, descriptive line
Bicycle BMX 1pcs  50 000.00 ESC1  50 000.00 Sk<CR><LF> ; Positive item tax 1
Allowed discount  5 000.00 ESC4A  5 000.00 Sk<CR><LF> ; Negative item tax 1
ESCk                                     45 000.00 Sk<CR><LF> ; Total sum
ESCP1                                     5 000.00 Sk<CR><LF> ; Mean of payment1
ESCP2                                     30 000.00 Sk<CR><LF> ; Mean of payment2
ESCP4                                     10 000.00 Sk<CR><LF> ; Mean of payment4
.....                                   ; Variable document footing.
.....                                   ; Here is information
.....                                   ; about customer
ESCe                                     ; End of cash receipt
    
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Document printed by printer connected to fiscal module

<p style="text-align: center;">Product of VAROS union 53 Rudlovska cesta AURIS 974 01 Banska Bystrica DIC :1020555294 IC VAT:SK1020555294 DKP: xxxxxxxxxxxxxx Document: 4/1 Date:25.05.2004 Time:10:45</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Name</th> <th style="text-align: left;">Pcs</th> <th style="text-align: left;">Prc/PU</th> <th style="text-align: left;">Tax</th> <th style="text-align: left;">Sum</th> </tr> </thead> <tbody> <tr> <td>Bicycle BMX</td> <td>1pcs</td> <td>50 000.00</td> <td>19%</td> <td>50 000.00 Sk</td> </tr> <tr> <td>Allowed discount</td> <td></td> <td></td> <td>-19%</td> <td>- 5 000.00 Sk</td> </tr> </tbody> </table> <hr/> <p>Price total: 45 000.00 Sk</p> <hr/> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: left;">[Rate]</th> <th style="text-align: left;">[Base]</th> <th style="text-align: left;">[Tax]</th> <th style="text-align: left;">[Turnover]</th> </tr> </thead> <tbody> <tr> <td>VAT1</td> <td>19%</td> <td>37815.10</td> <td>7184.90</td> <td>45000.00 Sk</td> </tr> </tbody> </table> <hr/> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Cash:</td> <td style="text-align: right;">5 000.00 Sk</td> </tr> <tr> <td>Bank card</td> <td style="text-align: right;">30 000.00 Sk</td> </tr> <tr> <td>Cheques</td> <td style="text-align: right;">10 000.00 Sk</td> </tr> </tbody> </table> <hr/>	Name	Pcs	Prc/PU	Tax	Sum	Bicycle BMX	1pcs	50 000.00	19%	50 000.00 Sk	Allowed discount			-19%	- 5 000.00 Sk		[Rate]	[Base]	[Tax]	[Turnover]	VAT1	19%	37815.10	7184.90	45000.00 Sk	Cash:	5 000.00 Sk	Bank card	30 000.00 Sk	Cheques	10 000.00 Sk	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>According to ESC b fiscal module prints graphic and text heading, ordinal receipt number/ordinal number of daily balance, where will be receipt included, date and time of the receipt.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Body of cash receipt. Sequences ESC 0 - ESC 9 are replaced with defined VAT rate.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Final sum is automatically rounded. Value of rounding is added to VAT rate adjusted by service program. VAT summary is printed. Receipt is</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Here is printed summary of means payment used for paying receipt.</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Here is printed variable footing of the document sent from superior</p> </div>
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Note: When you print daily and running balance, the cumulated value of used means of payment id printed. Only non- zero values are printed. See example of daily and running balance.

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Name	Pcs	Prc/PU	Tax	Sum
Goods 1	10pcs	10.00	19%	100.00 Sk
Goods 2	10pcs	10.00	0%	100.00 Sk
Cancelled 1	1pcs	- 10.00	-19%	- 10.00 Sk
Cancelled 2	1pcs	- 10.00	- 0%	- 10.00 Sk
Discount tax 1			-19%	-10.00 Sk
Negative item tax1			-19%	- 9.90 Sk

Rounding: - 0.10 Sk
 Price total: 160.00 Sk

	[Rate]	[Base]	[Tax]	[Turnover]
VAT1	19%	58.80	11.20	70.00 Sk
VAT3	0%	90.00	0.00	90.00 Sk

Cash: 10.00Sk
 Bankcard: 20.00 Sk
 Meal tickets: 30.00 Sk
 Cheques: 60.00 Sk
 EURO: 1.00 EURO

Body of cash receipt. Sequences ESC 0 - ESC 9 are replaced with defined VAT rate.

Final sum is automatically rounded. Value of rounding is added to VAT rate adjusted by service program. VAT summary is printed. Receipt is

Here is printed summary of means payment used for paying receipt.

Here is printed variable footing of the document sent from superior

Note: When you print daily and running balance, negative item are divided into groups as cancelled/discounts/negative items. Only non-zero items are printed
 When you print daily and running balance, the cumulated value of used means of payment id printed. Only non- zero values are printed.
 See example of daily and running balance.

11. Error messages of receipt printing.

Fiscal module during the voltage beginning performs detecting of proper functionality of particular hardware components. Error state is indicated with light of LEDs and connected printer prints error message. Printed are only error messages that are possible to print.

Text of error message is possible to change through service program so it can be different from following message. If fiscal module detects HW error it stops its activity until the error removal.

	LED1	LED2	LED3	Text of error message printed by printer
1.	ON	OFF	ON	Error 1 - MMC memory
2.	OFF	ON	OFF	* Normal state FM3000 is OK, printer is connected.
3.	ON	OFF	OFF	Error 2 - Timer error
4.	ON	ON	OFF	* Printer is in state BUSY
5.	OFF	ON	ON	Error3 - EEPROM error
6.	OFF	OFF	ON	* Loading of turnover from issued receipts in MMC memory
7.	ON	ON	ON	MASTER RESET ZAC / MASTER RESET END / FLASH
8.	OFF	OFF	OFF	* Fiscal module is not connected to feeding voltage.

In states marked with “ * “ cash register printer does not print error message.

Error 1

The MMC memory does not respond its initialisation has failed.

Error 2

Timer error. Timer does respond or adjusting failed.

Error 3

EEPROM memory does not respond or its initialisation has failed.

Error 4

Change backup battery of timer. Timer is back upped by CR2032 battery on device base.

Error 5

Difference of sums. Total sum for receipt not equal sum for particular items of receipt

12. Service book of cash register.

It has to be stored in place where is the cash register used. In case of tax inspection is tax subject obliged to submit service book to tax office inspections. Service technician records to this book all malfunctions of cash register emerging during the work of register. The page of the book has to be numbered in ascending order.

Cash register can be used only with its Tax code of cash register. The code issues Tax office in place of enterprise registration. The enterprise executive has to submit this service book and the cash register certificate.

Registration of cash register in Tax office

For cash register code issuance you need document as follows:

1. Application for code issuance
2. Service book of cash register – first page is fill out.
3. Copy of business licence.
4. The cash register certificate- it is a part o fiscal module.

Enterprise executive submits the application. Unregistered cash register without number and cash register without record from service centre cannot work.

Front page of the Service book of cash register- filled out by the service centre.

Type and model:	- fill: "FM3000"
Serial number:	- fill serial number of cash register from product plate
Put in the operation (date):	- date, when the service technician put the cash register in the operation
Put out of operation (date):	- date, when the service technician put the cash register of operation
Service technician surname and name:	- name of person who connected the cash register
Address of the premises where is cash register used (street, place, and postal code):	- fill out address

13. Cash register book

Cash register book is a book where are recorded daily and monthly turnovers, there are also stick daily and monthly balances of cash register. The part of cash register book can be also service book of cash register. Pages of the book have to be numbered ascendant. The book can consist from sheets, but the sheets have to be numbered. In case of tax inspection is tax subject oblige to submit this book for inspection.

Used terms and expressions

- Daily balance (DB): - it is the balance that has to do user of cash register every evening after sale finishing.
- It is not necessary to accomplish balance if the tax balance per a day was 0. The balance is stuck in cash register book
 - If user accomplished more DB he do not have stick all them into cash register book.
 - Data from daily balance are filled out in cash register book
- Monthly balance (MB) - it is the balance that has to do user of cash register in the evening of the last day in the month or following day in the morning.
- Data from monthly balance are filled out in cash register book
- Cumulated turnovers – They are turnovers that should be equal 0 at the moment when is cash register put in the operation, their value increases. The service technician can reset them after annual balance accomplishing.
- Gross turnover GT1- turnover of all positive sums registered in cash registers.
- Net turnover GT2 - real takings of cash register. It is the difference between positive and negative sums registered by cash register.
- It is according valid formula $GT2 = GT1 - GT3$
- Negative turnover GT3- turnover of all negative sums registered by the cash registers as are cancelled items, returnable containers...
- Daily turnover - turnover since last daily balance
- Monthly turnover - turnover since last monthly balance

All values of turnovers, taxes, cumulated grand totals that is necessary to write into the cash register book after accomplished DB or MB are simply in particular balances printed by fiscal module. We recommend to fill out values of daily balance in new page (you can check comparison MB with DB for each month).