

**PROTOCOL FOR COMMUNICATION  
BETWEEN FISCAL DEVICES AND PERSONAL COMPUTER**

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## 1. INTRODUCTION

### 1.1. Abbreviations:

<b>FD</b>	Fiscal device.
<b>PC</b>	Personal computer. Meaning not only the computer itself but the program which executes communication with FD.
<b>FM</b>	Fiscal memory
<b>EJT</b>	Electronic journal tape

**FD (Slave)** executes the commands, sent from **PC (Host)** and delivers a message, which depends on the result. Messages are send to the **Host** only if they are a result of the delivered commands.

**Tax Group letters** – А,Б,В,Г,Д,Е,Ж,З are Cyrillic capital letters with codes C0,...,C7 on CP1251 code table

### 1.2. SEQUENCE OF MESSAGES

Packed message that includes command towards the **SLAVE** is sent from **HOST** . The SLAVE replies after the operation concerning packed and unpacked messages is fulfilled. HOST must wait for an answer from SLAVE, before sending another message.

**SLAVE** replies to all messages received from **HOST** with a packed message or 1byte code not later than 60ms.HOST must have at least 500ms time-out, in order to receive an answer from SLAVE. If there is no other reply, the message is delivered again with the same serial (sequential) number and code. In case of several unsuccessful attempts, the HOST shows there is no connection to SLAVE.

Messages send by HOST or SLAVE can be 2 types:

### 1.3. UNPACKED MESSAGES

They consist of 1 byte:

#### NAK 15h

If there is an error in receiving the packet and it is found by SLAVE, the device sends a code NAK . When HOST receives this code, it must repeat the message with the same serial number.

#### SYN 16h

If SLAVE receives a command, which needs longer time for executing it sends code SYN every 100ms until the packed message is ready for an answer.

### 1.4. PACKED MESSAGES

#### 1.4.1. From HOST to SLAVE

position	1	2	3	4	5	6	7	8
name	STX	LEN	SEQ	CMD	DATA	post- amble1	BCC	ETX
length bytes	1	1	1	1	0-200	1	4	1
value	01h	20h-FFh	20h-FFh	20h-FFh	20h-FFh	05h	30h-3Fh	03h

#### Abbreviations:

“STX”- start of packed message

“LEN”- total number of bytes from position 2 to position 6, plus fixed offset of 20h.

“SEQ”- serial number of packet. SLAVE puts the same “SEQ” in the reply message. In case when SLAVE receives a message with the same “SEQ” and “CMD” like the last correctly received message, the device ignores the message and repeats the last packet sent to the HOST.

“CMD” – code of command

“DATA”- data, according to the command. If there is no data, the length field is zero.

“BCC” – control sum(0000h-FFFFh). Sum of data bytes from position 2 to position 6. The control sum is transferred in ASCII type (12AB is transferred as 31h 32h 3A 3B).

“ETX” – end of packed message.

#### 1.4.2 From SLAVE to HOST

position	1	2	3	4	5	6	7	8	9	10
name	STX	LEN	SEQ	CMD	DATA	Post- amble2	STATUS	Post- amble1	BCC	ETX
length bytes	1	1	1	1	0-200	1	6	1	4	1
value	01h	20h-FFh	20h-FFh	20h-FFh	20h-FFh	04h	80h-FFh	05h	30h-3Fh	03h

“STX”- start of packed message

“LEN” – total number of bytes from position 2 to position 8, plus fixed offset of 20h (for example length 0x01 is transmitted as 21h).

“SEQ” – serial number of packet . This is the number of the packet transmitted by HOST.

“CMD” – code of command . This is the command number, transmitted by HOST. In case of syntactic error or invalid command the corresponding status byte is set in the reply and then a packed message with zero data length is returned.

“DATA” – data, according to the command. If there is no data, the length field is zero. In case of syntactic error or invalid command the corresponding status byte is set in the reply and then a packed message with zero data length is returned.

“STATUS” – current status field of SLAVE (see Table1 to Table 6).

“BCC” – control sum(0000h-FFFFh). Sum of data bytes from position 2 to position 8.The control sum is transferred in ASCII type (12AB is transferred as 31h 32h 3A 3B).

“ETX” – end of packed message

## 2. STATUS FLAGS OF SLAVE

The current status of SLAVE is included within every message from SLAVE, and it has a fieldcode of 6 bytes. Description of every status byte is shown in Table 1 to Table 6.

Byte 0 - General function	
0.7=1	Reserved
0.6=1	Reserved
0.5=1	OR of all errors with *from bytes 0, 1, 2 – general error
0.4=1*	Printing mechanism error
0.3=1	No external display
0.2=1	Date and time are not set
0.1=1*	Invalid command
0.0=1*	Syntax error

Byte 1 - General function	
1.7=1	Reserved
1.6=1	Wrong password
1.5=1	Error in cutter
1.4=1*	Not used
1.3=1*	Not used
1.2=1*	Reset memory
1.1=1*	Prohibited command in current mode
1.0=1	Overflow of sum fields

<b>Byte 2 - General function</b>	
2.7=1	Reserved
2.6=1	Print of document is allowed
2.5=1	Non-fiscal receipt is opened
2.4=1	Insufficient free space in EJT
2.3=1	Fiscal receipt is opened
2.2=1	No EJT free space
2.1=1	Not enough paper
2.0=1*	No paper

<b>Byte 3 - Error number of Fiscal device</b>	
3.7	Reserved
3.0–3.6	Error number of Fiscal device (see the User manual)

<b>Byte 4 - Fiscal memory</b>	
4.7=1	Reserved
4.6=1	Not used
4.5=1	OR of all errors with*from bytes 4 and 5– general error
4.4=1*	Fiscal memory full
4.3=1	Space for less than 50 records in fiscal memory
4.2=1	Invalid record in fiscal memory
4.1=1	Problem with tax terminal
4.0=1*	Error writing data to fiscal memory

<b>Byte 5 - Fiscal memory</b>	
5.7=1	Reserved
5.6=1	FM ready
5.5=1	Identification numbers of FD and FM are programmed
5.4=1	Tax rates are programmed
5.3=1	Fiscal memory is activated
5.2=1*	Reserved
5.1=1	Not used
5.0=1*	FM overflowed

### **Byte 3 - Error codes transferred from FD**

FD returns a code of the received error (f.e. overflow) in byte 3. For further information concerning the error numbers please refer to "User's manual"

### 3. Commands

INITIAL SETTINGS			
№	Code(Hex)	Code	Command function
1	3Dh	61	Set date and time
2	2Bh	43	Header and print options
3	2Bh	43	Logo print (allow/disallow)
4	60h	96	Tax rates programming
5	65h	101	Operator password
6	66h	102	Operator name
7	96h	150	Set System parameters
8	6Bh	107	Program/delete PLUs
9	83h	131	Program departments
10	73h	115	Set graphical logo
11	95h	149	Set text field
12	97h	151	Set payments
15	C3h	195	EJT change
16	E5h	229	Restore default passwords

SALES			
№	Code (Hex)	Code (Decimal)	Command function
1	26h	38*	Start of non-fiscal receipt
2	2Ah	42*	Print of non-fiscal text
3	27h	39*	End of non-fiscal receipt
4	30h	48*	Start of fiscal receipt
5	31h	49*	Sale
6	34h	52*	Sale and show
7	3Ah	58*	Sale by PLU
8	8Ah	138*	Sale by department
9	33h	51*	SubTotal
10	35h	53*	Total sum(TOTAL)
11	36h	54*	Print of fiscal text
12	37h	55*	Start of fiscal receipt without printing
13	82h	130*	Cancel a receipt
14	39h	57*	Print information for the client
15	54h	84	Barcode print
16	38h	56*	End of fiscal receipt
17	6Dh	109*	Print duplicate receipt



<b>REPORTS</b>			
<b>№</b>	<b>Code(Hex)</b>	<b>Code (Decimal)</b>	<b>Command function</b>
1	6Fh	111*	Reports by PLUs
2	69h	105*	Reports by operators
3	32h	50*	Get tax rates
4	49h	73*	FM report by "Z" report numbers
5	4Fh	79*	Short FM report by dates
6	5Eh	94*	FM report by dates
7	5Fh	95*	Short FM report by "Z" report numbers
8	A5h	165*	Report by departments
9	A6h	166*	Print system parameters
10	99h	153	Send reports in text form
11	C3h	195	EJT report

<b>BALANCE AT THE END OF THE DAY</b>			
<b>№</b>	<b>Code(Hex)</b>	<b>Code (Decimal)</b>	<b>Command function</b>
1	45h	69*	Daily financial report(with or without reset)
2	6Ch	108*	Detailed daily financial report(with or without reset,with printing of PLUs)
3	68h	104	Reset sales by operators

<b>EXTERNAL DISPLAY CONTROL</b>			
<b>№</b>	<b>Code(Hex)</b>	<b>Code (Decimal)</b>	<b>Command function</b>
1	21h	33	Clear display
2	23h	35	Display text at line 2
3	2Eh	46	Display text at prescribed line
4	2Fh	47	Display text at line 1
5	64h	100	Send data to display
6	84h	132	Load a converting table
7	85h	133	Definition of display commands

INFORMATION			
№	Code(Hex)	Code (Decimal)	Command function
1	3Eh	62	Date and time information
2	4Ah	74	Status of Slave
3	41h	65	Current net / total sums
4	40h	64	Final fiscal record
5	44h	68	Free fiscal records
6	4Ch	76	Status of fiscal receipt
7	5Ah	90	Diagnostic information
8	61h	97	Current tax rates
9	63h	99	Information for BULSTAT (EIK) registration
10	6Bh	107	Information for PLU
11	83h	131	Information for department
12	67h	103	Information for the receipt
13	6Eh	110	Information for the day
14	2Bh	42	Get cliché
15	70h	112	Information about operators
16	71h	113	Number of last document
17	72h	114	FM Information by "Z" report numbers
18	76h	118	Firmware information
19	92h	146	FM Information by dates
20	80h	128	Receiving constant values
21	47h	71*	Print diagnostic information
22	C2h	194	Terminal test and information

PRINTER			
№	Code (Hex)	Code (Decimal)	Command function
1	2Ch	44*	Paper feed
2	2Dh	45*	Paper cut

OTHER			
№	Code (Hex)	Code (Decimal)	Command function
1	46h	70*	Service issued sums
2	6Ah	106*	Open till
3	3Fh	63	Display date and time

**Note:** Commands which code field is marked with \*, can be executed only in mode "Fiscal printer" after entering a password. For further information, please refer to "User's manual". Check status bit 2.6 – It shows that you have entered mode "Fiscal printer" and you are not about to print a document.

## 4. DETAILED COMMAND DESCRIPTION

### ABBREVIATIONS:

{ } – Mandatory fields

[ ] – Optional fields

| – Alternative parameters

#XXX# - FD constants - see description of command **128(80h)** and p.5 – **FD constants**

### 33 (21h) CLEAR DISPLAY

**Data field:** No data

**Reply:** No data

A command to clear the display is sent.

**Note 1:** If there is an open fiscal receipt, the data that FD sends to display depends on the value of the relevant system parameter – for further details see “**User’s manual**”

### 35 (23h) DISPLAY TEXT AT LINE 2

**Data field:** Text

**Reply:** No data

**Text** The text which will be displayed on line 2 of the display.

**Note 1:** The text will be “cut” on the right side, if it is longer than the value of the system parameter – for further details see “**User’s manual**”

**Note 2:** The command will not be completed if the value of the system parameter is less than 2– for further details see “**User’s manual**”

**Note 3:** If there is an open fiscal receipt, the data which FD sends to display depends on the value of the system parameter – for further details see “**User’s manual**”

### 38 (26h) START OF NON-FISCAL RECEIPT

**Data field:** No data

**Reply:** Allreceipt

**Allreceipt** Number of all issued receipts (fiscal and non-fiscal) since the last balance at the end of the day till now (6 bytes).

*Operation of SLAVE:*

- Prints HEADER;

*The SLAVE does not react to the command if:*

- There is open non-fiscal receipt;
- There is open fiscal receipt
- The built-in RTC is not set to the correct time
- Overflowed or erased EJT, when the SLAVE operates with EJT

### 39 (27h) END OF NON-FISCAL RECEIPT

**Data field:** No data  
**Reply:** Allreceipt

**Allreceipt** Number of all issued receipts (fiscal and non-fiscal) since the last balance at the end of the day till now (6 bytes).

*Operation of SLAVE:*

- Prints FOOTER;
- Prints document serial number, date and time of issuing;
- Prints "SERVICE BON" if FD has been fiscalized, otherwise prints "NON FISCAL RECEIPT "

*The SLAVE does not react to the command if:*

- There is no open non-fiscal receipt;
- There is open fiscal receipt.
- 

### 42 (2Ah) PRINT NON-FISCAL TEXT

**Data field:** Text  
**Reply:** No data

**Text** Text

*The SLAVE does not react to the command if:*

- There is no open non-fiscal receipt;

**Note 1:** The text will be "cut" on the right side if it is longer than #COMMENT\_LEN#

**Note 2:** The Text field is interpreted like a comment and will be printed with "#" symbols at the beginning and at the end;

### 43 (2Bh) CLICHÉ AND PRINTING OPTIONS

**Data field:** {Option}{Text}  
**Reply:** According to data field

**Option** 1 symbol, which meaning is:  
 "0" to "7" – number of line which is set ( HEADER lines are with numbers from 0 to 5, and for FOOTER – 6 to 7).  
 "P" – Set Print options.  
 "L" – printing of graphic logo.  
 "C" – automatic paper cutting at the end of the document (if FD has a cutter).  
 "A" – detailed print of client receipt.  
 "I" –gives the opportunity to read the values, set earlier by this command. The next symbol after letter "I" follows only one symbol which coincides with the ones mentioned above.

**Text** Text

If {Option} is symbol from "0" to "7" – the text of the the relevant line.

**Note:** The text will be cut on the right side if it is longer than #CHARS\_PER\_LINE#

If {Option} = "P" – 4 symbols with value "0"=disables or "1"= enables the corresponding option.

Options according to symbols:

- [1] A blank line will be printed after HEADER
- [2] A blank line will be printed after BULSTAT (EIK) registration number

[3] A blank line will be printed after FOOTER

[4] Delimiter line will be printed before total sum

If{Option} = "L" – One symbol with value "0" or "1", which forbids or allows the printing of graphical logo.

If {Option} = "A" – One symbol with value "0"= forbids or "1"= allows detailed printing of client receipt.

If {Option} = "C" – One symbol with value "0"= forbids automatic cutting; or

"1"= allows fully cutting at the end of the receipt; or

"2" = allows partial cutting at the end of the receipt.

#### 44 (2Ch) PAPER FEED

**Data field:** [Lines]

**Reply:** No data

**Lines** Number of lines by which the paper will be moved.

#### 45 (2Dh) PAPER CUT

**Data field:** [Mode]

**Reply:** Code

**Mode** Optional parameter indicating cutting type. 1 = full cut, 2 = partial cut.

**Code** One symbol indicating the result:

"P" – command is successful.

"F" – command is not successful

#### 46 (2Eh) DISPLAY TEXT AT A PRESCRIBED LINE ON DISPLAY

**Data field:** LineNo,Text

**Reply:** No data

**LineNo** Number of display line. The lines are counted from top to bottom. The number of the top line is 1.

**Text** Text which will be displayed on the line.

**Note1:** The text will be cut on the right side if it is longer than the value of the system parameter - for further details see "User's manual"

**Note 2:** If LineNo is greater than the value of the system parameter, FD will refuse to complete the command -for further details see "User's manual"

**Note3:** If there is an open fiscal receipt, data which FD sends to display depends on the value of the system parameter 46 - for further details see "User's manual"

#### 47 (2Fh) DISPLAY TEXT AT LINE 1 ON DISPLAY

**Data field:** Text

**Reply:** No data

**Text** The text which will be displayed on line 1 of the display.

**Note 1:** The text will be cut on the right side if it is longer than the value of the system parameter – for further details see "User's manual"

**Note 2:** If there is an open fiscal receipt, data which FD is sending to display depends on the value of the system parameter 46 - for further details see "User's manual"

**48 (30h) START OF FISCAL RECEIPT**

**Data field:** {ClerkNum},{Password},{UnicSaleNum}{Tab}{Invoice}  
 {Refund}{Reason},{DocLink},{DocLinkDT}{Tab}{FiskMem}  
 {Credit}{InvLivk},{Reason},{DocLink},{DocLinkDT}{Tab}{FiskMem}]

**Reply:** Allreceipt, FiscReceipt

**ClerkNum** Operator number – 1 to #OPER\_MAX\_CNT#.  
**Password** Operator password – up to 6 digits  
**UnicSaleNum** Mandatory parameter specifying Unique Sales Number  
 Format: "Ind. FM number "(2 capital letters + 6 digits)  
 "\_"  
 "Operator Code" four major Latin letters or numbers  
 "\_"  
 "Order serial number" (minimum seven digits)  
 example: DY000600-OP01-0000001).  
**Invoice** Indicates issuing of invoice receipt = "I"  
**Refund** Indicates the issuance of a cash fiscal receipt = "R"  
**Reason** Reason for issuance of a stamped fiscal receipt  
 0 = RETURN / ADVERTISING  
 1 = OPERATOR ERROR  
 2 = REDUCTION OF DAN. FUNDAMENTAL  
**DocLink** Number of the fiscal receipt for which it is issued  
**DocLinkDT** Date and time of issue of the fiscal receipt, in respect of which it is issued, in  
 format {DD-MM-YY} {space} {HH: mm [: SS]}  
**Tab** Tab One byte with value 09h (separator).  
**FiskMem** FP number of the device from which the fiscal receipt was issued  
**Credit** Indicates issuance of a credit note  
**InvLink** Tax invoice number, reason for issuing the credit note  
**Allreceipt** Number of all issued receipts (non-fiscal and fiscal) since the last balance at the end of the  
 day till now (4 bytes)  
**FiscReceipt** Number of all issued fiscal receipts since the last balance at the end of the day till now (4  
 bytes)

*Operation of SLAVE:*

- Prints HEADER and BULSTAT (EIK) registration number;
- Prints operator's name and number;
- If {Invoice}="I", prints invoice number and the text „ОРИГИНАЛ”;

*FD does not react to the command if:*

- There is open fiscal or non-fiscal receipt;
- Overflowed fiscal memory;
- Overflowed or erased EJT, when the SLAVE operates with EJT
- There is no number or password of operator;
- Password is invalid;
- The built-in RTC is not set to the correct time;
- There is a problem with the communication between the FD and the tax terminal;
- The range of numbers for the invoices is spent or empty, while trying to open a new invoice;
- Missing or incorrectly assigned UNP (Unique Sales Number)

**Attention:** If FD has not been fiscalized, you are allowed to open a fiscal receipt, to make sale and payment and to close it but at the end of the receipt is printed the text "NO FISCAL ".

## 49 (31h) SALES

<b>Data field:</b>	<b>{{Text1}}[{{CR}}{Text2}][Tab][TaxGr][{Sign}Price] [*{QTY}][,Percent][\\$Netto]</b>
<b>Reply:</b>	<b>No data</b>
<b>Text 1</b>	Text description of the sale.
<b>CR</b>	One byte, value 0Ah (delimiter).
<b>Text 2</b>	Additional text.
<b>Tab</b>	One byte, value 09h (delimiter).
<b>TaxGr</b>	1 symbol, indicates the tax group (cyrilic, capital letters А, Б, В, Г, Д, Е, Ж, З).
<b>Sign</b>	1 byte with value '+' or '-'. If Sign = '-', then a correction(void) of the last sale with the same price, quantity and number of department is made as well as ignoring fields Percent and Netto.
<b>Price</b>	Single price: up to 8 meaning digits
<b>QTY</b>	Optional parameter, up to 8 meaning digits (3 or less after decimal point) - indicates quantity of sale. By default - 1.000.
<b>Percent</b>	Optional parameter - indicates the percent of discount/surcharge on the current sale. Acceptable values – 0.01 % to 99.99 %, 2 or less digits after decimal point.
<b>Netto</b>	Optional parameter - indicates the value of discount/surcharge on the current sale

FD prints the name of the sale with the price, tax group code and quantity (if there is).  
If discount or surcharge is entered, it is printed on a separate line.

*FD does not react to the command if:*

- There is no open fiscal receipt;
- Reach the maximum number of sales for one receipt;
- Overflowed or erased EJT, when the SLAVE operates with EJT
- The payment on the current receipt has been started;
- The tax group is forbidden;
- The fields Percent and Netto are set at one time;
- The execution of the command will lead to overflowing of any of the reports;

**Note 1:** The text will be "cut" on the right side if it is longer than #COMMENT\_LEN#

**Note 2:** If the fields **Text1** and **Text2** are set at one time, the **Text1** is interpreted like a comment and will be printed with "#" symbols at the beginning and at the end;

## 50 (32h) GET TAX RATES

<b>Data field:</b>	<b>{{StartDate}[, {EndDate}]}</b>
<b>Reply:</b>	<b>Code, Tax1, Tax2, Tax3, Tax4, Tax5, Tax6, Tax7, Tax8, Date</b>
<b>StartDate</b>	StartDate of the period (DDMMYY) – 6 bytes.
<b>EndDate</b>	EndDate of the period (DDMMYY) – 6 bytes.
<b>Code</b>	One byte with value "F" – error or "P" – data is found in FM.
<b>Tax1</b>	VAT rate by tax group А
<b>Tax2</b>	VAT rate by tax group Б
<b>Tax3</b>	VAT rate by tax group В
<b>Tax4</b>	VAT rate by tax group Г
<b>Tax5</b>	VAT rate by tax group Д
<b>Tax6</b>	VAT rate by tax group Е
<b>Tax7</b>	VAT rate by tax group Ж
<b>Tax8</b>	VAT rate by tax group З
<b>Date</b>	Date on which rates are recorded in format DDMMYY

FD prints a report for service records in FM for the indicated period.

**51 (33h) SUBTOTAL**

**Data field:** **{Print}{Display}[,Percent][*[\$Netto]***  
**Reply:** **SubTotal,Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8**

**Print** Value 0 (not printing) or 1 (printing) SubTotal sum  
**Display** Value 0 or 1. Indicates whether FD must show SubTotal sum on the external display.  
**Percent** This is Optional parameter, specifying the value of surcharge or discount(according to the sign) in percentage over the accumulated sum by the moment .  
**Netto** *Optional parameter showing the value discount / allowance (according to the sign) on the subtotal.*

**SubTotal** Amount till the moment for the current FISCAL RECEIPT – 10 symbols.  
**Tax1** Total sum of Tax group A – 10 bytes  
**Tax2** Total sum of Tax group Б – 10 bytes  
**Tax3** Total sum of Tax group В – 10 bytes  
**Tax4** Total sum of Tax group Г – 10 bytes  
**Tax5** Total sum of Tax group Д – 10 bytes  
**Tax6** Total sum of Tax group Е – 10 bytes  
**Tax7** Total sum of Tax group Ж – 10 bytes  
**Tax8** Total sum of Tax group З – 10 bytes

This command calculates the sum of all sales, which are registered into the fiscal receipt by now. If discount or surcharge is entered, it is printed on a separate line. The calculated current sum and all accumulated sums of tax groups for the moment are transmitted to the PC.

**52 (34h) SALE AND DISPLAY**

**Data field:** **[Text1]{Tab}{TaxGroup}{[Sign]Price}{\*QTY}[,Percent][*[\$Netto]***  
**Reply:** **No data**

Information for data fields, their function and conditions through which FD will complete successfully this command – see description of command **49(31h)**.

**53 (35h) TOTAL SUM (TOTAL)**

**Data field:** **[{Text1}][{CR}{Text2}]{Tab}[[{Payment}] {Amount}]**  
**Reply:** **{PaidCode}{Amount}**

**Text1** First line for printing– text  
**CR** One byte,value 0Ah (delimiter).  
**Text2** Second line for printing –text.  
**Tab** One byte,value 09h (delimiter).  
**Payment** Optional parameter, specifying method of payment. If you haven't chosen Payment nor Amount, the SLAVE usually enacts total payment in cash.

*Payment modes:*

“P” – Cash;  
 “N” – payment 1  
 “C” – payment 2  
 “D” or “U” – payment 3  
 “B” or “E” – payment 4

**Amount** Sum of payment (up to 8 meaning digits)..



<b>PaidCode</b>	1 byte – result of the command. “F” – error “I” – if the sum by a certain tax group is negative. “D” – if the sum, which is paid is less or equal to the Total sum of the receipt. “R” –if the sum, which is paid is greater than Total sum. “E” – negative SubTotal.
<b>Amount</b>	Change (according to PaidCode).

*The SLAVE doesn't react to the command if:*

- There is no open fiscal receipt;

**Note1:** The indicated texts are “cut” on the right side if they are longer than #COMMENT\_LEN#

**Note2:** The fields **Text1** and **Text2** are interpreted like comments and will be printed with “#” symbols at the beginning and at the end;

**Attention: when the command is completed successfully**, FD will not allow making sales within this receipt. Error codes “E” and “I” are not valid for Bulgaria.

#### 54 (36h) PRINT FISCAL TEXT

<b>Data field:</b>	<b>Text</b>
<b>Reply:</b>	<b>No data</b>
<b>Text</b>	Text for printing

**Note1:** The indicated texts are “cut” on the right side if they are longer than #COMMENT\_LEN#

**Note2:** The field **Text** is interpreted like a comment and will be printed with “#” symbols at the beginning and at the end;

#### 55 (37h) START OF FISCAL RECEIPT

The command is analogous to command 48 (37h), but the fiscal voucher thus opened is not printed on paper but only recorded on the EJTand FM.

**Note 1:** This command is run only on the FU whose firmware supports the e-shop

**Note 2:** Upon filing this command, even if the firmware of the FU maintains work for an online store, in case the FU is not authorized to work in an online store, the fiscal receipt will be printed on paper.

For both remarks read command 118 (76h)

#### 56 (38h) END OF FISCAL RECEIPT

<b>Data field:</b>	<b>No data</b>
<b>Reply:</b>	<b>Allreceipt, FiscReceipt</b>

**Allreceipt** Number of all issued receipts since the last balance at the end of the day till now

**FiscReceipt** Number of all issued fiscal receipts since the last balance at the end of the day till now

*The SLAVE doesn't react to the command if:*

- There is no open fiscal receipt;
- The command "TOTAL SUM"(53) is not executed
- The paid amount of TOTAL SUM (53) is less than Total Sum of the receipt.
- An invoice is opened and the command 57(39h) is not executed.

### 57 (39h) PRINT CLIENT INFORMATION

**Data field:**

**IdentNo**<Tab>**RegNo**<Tab>**Seller**<Tab>**Receiver**<Tab>**Client**<Tab>**Address**]]]]

**Reply:** No data

**IdentNo** Client identification number  
**Tab** Tabulation (delimiter), value 09h.  
**RegNo** Optional parameter, client VAT N#.  
**Seller** Optional parameter, clerk's name  
**Receiver** Optional parameter, receiver's name  
**Client** Optional parameter, client's name  
**Address** Optional parameter, client's address. More than one line are allowed for printing. The lines are separate by tabulation (09h).

**Attention:** The command is allowed (and mandatory) only if an invoice is opened and all the sum is paid. In case of an opened invoice, even if the sum is paid, FD will reject to execute the command 56(38h), before the execution of this command.

**Note1:** The indicated **IdentNo**, **RegNo** are "cut" on the right side if they are longer than #STATNO\_LEN#.

**Note2:** The indicated **Seller**, **Receiver**, **Client**, **Address** are "cut" on the right side if they are longer than #CHARS\_PER\_LINE#.

### 58 (3Ah) SALE BY PLU

**Data field:** {[Sign]PLU}[\*{QTY}][,Percent][@Price][\\$Netto]

**Reply:** No data

**Sign** 1byte with value '+' or '-'. If Sign = '-', then a correction(void) of the last sale with the same price, quantity and number of PLU is made as well as ignoring fields Percent and Netto.  
**PLU** PLU number (serial).  
**QTY** See the command 49(31h).  
**Percent** See the command 49(31h).  
**Netto** See the command 49(31h).  
**Price** Optional parameter, indicating free PLU price during sale

*The SLAVE doesn't react to the command if:*

- Price is set and PLU number is <= 100 ;
- PLU with this number is not programmed
- See the command 49(31h).

### 61 (3Dh) SET DATE AND TIME

**Data field:** {DD-MM-YY}{space}{HH:MM[:SS]}

**Reply:** No data

**Note:** This command can be executed only after reset the RAM ("НУЛИРАН РАМ").

**Attention:** You can't enter date which is earlier than the last date stored in the fiscal memory or in the EJT.

## 62 (3Eh) GET DATE AND TIME INFORMATION

**Data field:** No data.  
**Reply:** {DD-MM-YY}{Space}{HH:MM:SS}

Date and time information is received from FD.

## 63 (3Fh) DISPLAY DATE AND TIME

**Data field:** No data.  
**Reply :** No data.

Current date and time are displayed in format: DD-MM-YYYY HH:MM.

## 64 (40h) FINAL FISCAL RECORD

**Data field:** [Type]  
**Reply:** Number, Tax1, Tax2, Tax3, Tax4, Tax5, Tax6, Tax7, Tax8, StTax1, StTax2, StTax3, StTax4, StTax5, StTax6, StTax7, StTax8, Date

<b>Type</b>	Not compulsory parameter indicating type of the returned data: "T"- amount with VAT (total) and "N"-amount without VAT (net). By default is "N"
<b>Number</b>	Number of the last fiscal record.
<b>Tax1</b>	Session Taxable A sales Total (12 digits)
<b>Tax2</b>	Session Taxable Б sales Total (12 digits)
<b>Tax3</b>	Session Taxable B sales Total (12 digits)
<b>Tax4</b>	Session Taxable Г sales Total (12 digits)
<b>Tax5</b>	Session Taxable Д sales Total (12 digits)
<b>Tax6</b>	Session Taxable E sales Total (12 digits)
<b>Tax7</b>	Session Taxable Ж sales Total (12 digits)
<b>Tax8</b>	Session Taxable 3 sales Total (12 digits)
<b>StTax1</b>	<b>Total / net amount of transactions under tax code with code A</b>
<b>StTax2</b>	<b>Total / Net Amount of Outstanding Transactions by Tax Code Group Б</b>
<b>StTax3</b>	<b>Total / net amount of transactions under tax code with code B</b>
<b>StTax4</b>	<b>Total / net amount of transactions under the tax code group Г</b>
<b>StTax5</b>	<b>Total / net amount of transaction by tax group with code Д</b>
<b>StTax6</b>	<b>Total / net amount of transactions under tax code with code E</b>
<b>StTax7</b>	<b>Total / net amount of transactions under tax group with code Ж</b>
<b>StTax8</b>	<b>Total / Net Amount of Outstanding Transactions by Tax Code 3</b>
<b>Date</b>	Date of the last fiscal record (6 symbols DDMMYY).

This command returns information from FD for the last daily financial report back into the fiscal memory.

**65 (41h) CURRENT NET/TOTAL SUMS**

**Data field:** [Type]  
**Reply:** Zlate,Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8  
**StTax1,StTax2, StTax3,StTax4,StTax5,StTax6,StTax7,StTax8**

**Type** Not compulsory parameter indicating type of the returned data: “T”- amount with VAT (total) and “N”-amount without VAT (net). By default is“N”

**Tax1** Session Taxable A sales Total (12 digits)  
**Tax2** Session Taxable Б sales Total (12 digits)  
**Tax3** Session Taxable B sales Total (12 digits)  
**Tax4** Session Taxable Г sales Total (12 digits)  
**Tax5** Session Taxable Д sales Total (12 digits)  
**Tax6** Session Taxable E sales Total (12 digits)  
**Tax7** Session Taxable Ж sales Total (12 digits)  
**Tax8** Session Taxable 3 sales Total (12 digits)  
**StTax1** Total / net amount of transactions under tax code with code A  
**StTax2** Total / Net Amount of Outstanding Transactions by Tax Code Group Б  
**StTax3** Total / net amount of transactions under tax code with code B  
**StTax4** Total / Net Amount of Dealing in Tax Code Group Г  
**StTax5** Total / net amount of transaction by tax group with code Д  
**StTax6** Total / net amount of transactions under tax code with code E  
**StTax7** Total / net amount of transactions under tax group with code Ж  
**StTax8** Total / Net Amount of Outstanding Transactions by Tax Code 3

The command returns the accumulated sums from the last balance of the day to the moment by all tax groups.

**68 (44h) FREE FISCAL RECORDS**

**Data field:** No data  
**Reply:** Logical, Physical

**Logical** Number of all free blocks for record of the daily reports in the fiscal memory.  
**Physical** Repeats the former record.

Returns information for the number of free records in fiscal memory.

**69 (45h) DAILY FINANCIAL REPORT WITH OR WITHOUT CLEARING**

**Data field:** [[Item]Option]  
**Reply:** [Closure, Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8,  
**StTax1,StTax2, StTax3,StTax4,StTax5,StTax6,StTax7,StTax8]**

**Item** Optional parameter, indicating type of record.If it is not entered,it is = ‘0’by default.

= “0” or “1” – executing daily report with clearing (Z report). The report ends with sign “FISCAL RECEIPT” or “NON-FISCAL RECEIPT” depending on whether FD is fiscalized.  
 = “2” or “3” – executing daily report without clearing (X report). The report ends by printing the word "OFFICE BON" or "NON-FISCAL BON" in depending on whether the FM has been put into service.  
 = “5” – if EJT is full, the FD prints the EJT content. Returns information about the free lines in EJT. If there is no EJT, returns an error.

= "6" – executing daily report with clearing (Z report), no paper print, only write to EKL and FM (when the FD is registered)  
 = "8" – executing periodic Z report by departments. No data return.  
 = "9" – executing periodic X report by departments. No data return.

<b>Option</b>	Optional parameter. If it is chosen value "N", when issuing daily financial report Z, data is not cleared by operators.
<b>Closure</b>	Number of fiscal record (4 digits).
<b>Tax1</b>	Session Taxable A sales Total (12 digits)
<b>Tax2</b>	Session Taxable Б sales Total (12 digits)
<b>Tax3</b>	Session Taxable B sales Total (12 digits)
<b>Tax4</b>	Session Taxable Г sales Total (12 digits)
<b>Tax5</b>	Session Taxable Д sales Total (12 digits)
<b>Tax6</b>	Session Taxable E sales Total (12 digits)
<b>Tax7</b>	Session Taxable Ж sales Total (12 digits)
<b>Tax8</b>	Session Taxable 3 sales Total (12 digits)
<b>StTax1</b>	Total amount of transaction by tax group with code A
<b>StTax2</b>	Total amount of transaction by tax code group Б
<b>StTax3</b>	Total amount of transaction by tax group with code B
<b>StTax4</b>	Total amount of transactions under tax code group Г
<b>StTax5</b>	Total amount of transactions under tax code with code Д
<b>StTax6</b>	Total amount of transactions by tax group with code E
<b>StTax7</b>	Total amount of transactions by tax group with code Ж
<b>StTax8</b>	Total amount of transactions under the tax code group 3

## 70 (46h) SERVICE INPUT SUM (R/A) AND SERVICE OUTPUT(P/O) SUM

**Data field:** {Amount},{Text1}{{CR}}{Text2}{TAB}}  
**Reply:** Code,CashSum,ServInput,ServOutput

<b>Amount</b>	Registration sum (9 symbols). According to the sign of the digit it is executing ServInput or ServOutput.
<b>Text 1</b>	Commentary text.
<b>CR</b>	One byte with value 0Ah (delimiter).
<b>Text 2</b>	Commentary text.
<b>TAB</b>	One byte with value 09h (delimiter).
<b>Code</b>	"P" – The command was executed successfully. "F" – The command was cancelled. If the cash sum is less than the asked sum or if there is an open fiscal receipt.
<b>CashSum</b>	Cash sum available in the drawer. The sum is changing with this command or after every cash payment.
<b>ServInput</b>	Sum of all commands for the day "ServInput "
<b>ServOutput</b>	Sum of all commands "for the day ServOutput ".

**Note1:** The indicated texts are "cut" on the right side if they are longer than #COMMENT\_LEN#

**Note2:** The fields **Text1** and **Text2** are interpreted like comments and will be printed with "#" symbols at the beginning and at the end;

**Warning:** If you do not set any data or give **Amount** = 0, the FD will not print document, but will respond with the above-mentioned answer. So the PC can track the cash before issuing command to open a stack of fiscal receipt

## 71 (47h) PRINT DIAGNOSTIC INFORMATION

**Data field:** No data

**Reply:** No data

*A service receipt with diagnostic information is printed. It includes:*

- Date and version of firmware;
- Firmware control sum;
- Serial port communication speed;
- Swithes;
- Other information

## 73 (49h) REPORT FROM FM BY NUMBER

**Data field:** {StartNum},{EndNum}{[,PAY]}

**Reply:** No data

**StartNum** Start Number of fiscal record with length 4 symbols.

**EndNum** End Number of fiscal record with length 4 symbols.

**PAY** Optional parameter containing text PAY (capital letters in Latin). If indicated, the FD will print summary data by type of payment for the specified period.

When this command is executed, the FD prints a detailed report of the AF for a block-by-block period.

## 74 (4Ah) FD STATUS

**Data field:** No data

**Reply:** {S0}{S1}{S2}{S3}{S4}{S5}

**Sn** Status Byte N.

## 76 (4Ch) FISCAL RECEIPT STATUS

**Data field:** [Option]

**Reply:** Open,Items,Amount[,Tender, Remainder]

**Option** "T" – The command returns information for the last made payment .

**Open** "0" – There is no open receipt

"1" – There is open fiscal or non-fiscal receipt.

**Items** Number of sales, which have been made and registered in the current or the final fiscal receipt.

**Amount** Total sum of the final fiscal receipt (10 digits).

**Tender** The amount included in the current receipt or in the final receipt..

**Remainder** The amount due to be paid in the current or final receipt.

This command enables PC application to determine the status of FD and if it is necessary to restore and complete a fiscal operation, which is interrupted by emergency, for example in case of power supply failure.

## 79 (4Fh) BRIEF REPORT FROM FM BY DATE

**Data field:** {StartDate},{EndDate}{[,PAY]}

**Reply:** No data

**StartDate** StartDate with length 6 symbols (DDMMYY)

**EndDate** EndDate with length 6 symbols (DDMMYY)

**PAY** Optional parameter containing text PAY (capital letters in Latin). If indicated, the FD will print summary data by type of payment for the specified period.

When this command is executed, the FD prints a summary report of the FM for the period from date to date.

## 84 (54h) BARCODE PRINT

**Data field:** Type,Data[<TAB>Pos[,Scale[,High[,PrnText]]]]**Reply:** No data

<b>Type</b>	Barcode type: <b>1: EAH8.</b> The data contains exactly 7 bytes – only digits. The FD counts and prints control sum. <b>2: EAH13.</b> The data contains exactly 12 bytes – only digits. The FD counts and prints control sum. <b>3: Code128.</b> The data contains only ASCII symbols between 20h and 7Fh incl. The maximum allowed length depends of the symbols. If only digits – 18. <b>4: UPC E</b> The data contains exactly 8 bytes – only digits. The first symbol should be „0”(30h). <b>5: UPC A</b> The data contains exactly 11 bytes – only digits. The FD counts and prints control sum. <b>6: 2/5 Standart</b> The data contains not more than 9 bytes – only digits. <b>7: 2/5 Interleaved</b> The data contains not more than 18 bytes – only digits. <b>8: 2/5 Interleaved mod10</b> The data contains not more than 18 bytes – only digits. <b>9: Code39</b> The data contains only ASCII symbols between 20h and 7Fh incl., not more than 9 bytes. <b>10: Code39 mod43</b> The data contains only ASCII symbols between 20h and 7Fh incl., not more than 8 bytes. <b>11: Code93</b> The data contains not more than 11 bytes – digits or capital letters. <b>12: CODEBAR</b> The data contains not more than 14 bytes – digits or capital letters A,B,C,D. <b>13: POSTNET</b> The data contains not more than 13 bytes – only digits.
<b>Data</b>	Data for printing.
<b>Pos</b>	Optional parameter, indicates the printing position of the barcode. Could be <b>“C”</b> , <b>“R”</b> , <b>“L”</b> <b>“C”</b> - Center <b>“R”</b> – Righth <b>“L”</b> - Left By default: <b>“C”</b>
<b>Scale</b>	Optional parameter, indicates the pixel width of the thinnest line of the barcode. If 0, the width by default is executing. Bigger value means wider barcode (if possible) and less number of symbols.
<b>High</b>	Optional parameter, indicates the high of the barcode in mm. If 0, the high by default is executing – 10mm.
<b>PrnText</b>	Optional parameter, 1 byte with value <b>“0”</b> or <b>“1”</b> . <b>“1”</b> – prints additional text after barcode. The position depends of field <b>Pos</b> <b>“0”</b> – no additional text printing. By default : <b>“1”</b>

## 90 (5Ah) DIAGNOSTIC INFORMATION

**Data field:** [Calculate]**Reply:** {FirmwareRev}{Space}{FirmwareDate}{Space}{FirmwareTime},{ChekSum},{Sw},{Country},{SerNum},{FM}

<b>Calculate</b>	If <b>“1”</b> , it is calculating the control sum of EPROM (1 byte).
<b>FirmwareRev</b>	Version of Firmware (4 symbols).
<b>Space</b>	Space20h (1 byte).
<b>FirmwareDate</b>	Date of Firmware DDMMYY (6 byte).
<b>Space</b>	Space 20h (1 byte).
<b>FirmwareTime</b>	Time of Firmware HHMM (4 byte).

<b>ChekSum</b>	ChekSum of EPROM (4 byte hexadecimal string).
<b>Sw</b>	Switches.(4 digits)
<b>Country</b>	Number of country (1 byte), for Bulgaria = 6
<b>SerNum</b>	Identification number of FD (#MACHNO_LEN# symbols).
<b>FM</b>	The fiscal module number (#FMNO_LEN# symbols).

#### 94 (5Eh) REPORT FROM FM BY DATES

**Data field:** {StartDate},{EndDate},{PAY}  
**Reply:** No data

**StartDate** StartDate of fiscal record (6 symbols DDMMYY).  
**EndDate** EndDate of fiscal record (6 symbols DDMMYY).  
**PAY** Optional parameter containing text PAY (capital letters in Latin). If indicated, the FD will print summary data by type of payment for the specified period.

When this command is executed, the FD prints a detailed report of the FM for the period from date to date.

#### 95 (5Fh) BRIEF REPORT FROM FM BY NUMBER

**Data field:** {StartNum},{EndNum},{PAY}  
**Reply:** No data

**StartNum** Start Number of fiscal record.  
**EndNum** End Number of fiscal record  
**PAY** Optional parameter containing text PAY (capital letters in Latin). If indicated, the FD will print summary data by type of payment for the specified period.

When this command is executed, the FD prints a summary report of the FM for a block-by-block period.

#### 96 (60h) TAX RATES PROGRAMMING

**Data field:** {Tax1},{Tax2},{Tax3},{Tax4},{Tax5},{Tax6},{Tax7},{Tax8}]]]]]]]]  
**Reply:** Code

**Tax1** Tax rate by tax group A (number up to 2 digits after decimal point)  
**Tax2** Tax rate by tax group Б (number up to 2 digits after decimal point)  
**Tax3** Tax rate by tax group B (number up to 2 digits after decimal point)  
**Tax4** Tax rate by tax group Г (number up to 2 digits after decimal point)  
**Tax5** Tax rate by tax group Д (number up to 2 digits after decimal point)  
**Tax6** Tax rate by tax group E (number up to 2 digits after decimal point)  
**Tax7** Tax rate by tax group Ж (number up to 2 digits after decimal point)  
**Tax8** Tax rate by tax group 3 (number up to 2 digits after decimal point)

**Code** 1 byte, including  
“P” – no error.  
“F” – error

**Attention:**The tax rate values are from 0.00 to 99.99. It's possible to set value -1 or -1.00, indicates a sale forbidden tax group. While executing the command, if not all 8 tax values are set, the tax group will save the old values.



**97 (61h) CURRENT TAX RATES**

**Data field:** No data  
**Reply:** Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8

<b>Tax 1</b>	Tax rate A
<b>Tax 2</b>	Tax rate Б
<b>Tax 3</b>	Tax rate B
<b>Tax 4</b>	Tax rate Г
<b>Tax 5</b>	Tax rate Д
<b>Tax 6</b>	Tax rate E
<b>Tax 7</b>	Tax rate Ж
<b>Tax 8</b>	Tax rate 3

Receiving information about the current tax rates.

**99 (63h) INFORMATION FOR BULSTAT (EIK) REGISTRATION NUMBER**

**Data field:** No data  
**Reply:** IdentNo

**IdentNo** Identification number #STATNO\_LEN#positions in ASCII format

If FD is fiscalized, returns the written BULSTAT (EIK) registration number in FM.  
 If FD is not fiscalized, returns #STATNO\_LEN# symbols "-".

**100 (64h) SEND DATA TO DISPLAY**

**Data field:** Text  
**Reply:** No data

**Text** Data for display. If between them there are controlling symbols(smaller than 20hex), they are increased by 40hex and are preceded by 10hex, for example :  
 In order to transfer data 1Bh,4Bh,00h in Text write 10h,5Bh,4Bh,10h,40h

**101 (65h) SET OPERATOR PASSWORD**

**Data field:** {ClerkNumber},{OldPsw},{NewPsw}  
 [,RefClaim[,RefError[,RepOther]]]

**Reply:** No data

**ClerkNumber** Number of operator from 1 to #OPER\_MAX\_CNT#

**OldPsw** Old password

**NewPsw** New password .

**RefClaim** Authorization (= 1) / Prohibition (= 0) for issuing a claim on a claim

**RefError** Authorization (= 1) / Prohibition (= 0) for issuance of repayment at op. error

**RefOther** Authorization (= 1) / Prohibition (= 0) of dan. basis

Passwords can be entered maximum for #OPER\_MAX\_CNT# operators. The command must be transmitted while opening FISCAL RECEIPT.

**Attention:**

1. If it is set password 0, this operator is not allowed to work.
2. It is forbidden to enter one and the same different non-zero passwords for two or more different operators.

*Passwords by default:* see "User's manual"

## 102 (66h) SET OPERATOR'S NAME

**Data field:** {ClerkNum},{Password},{Name}  
[<Tab> RepClaim[,RefError[,RefOther]]]

**Reply:** No data

**ClerkNum** Number of operator from 1 to #OPER\_MAX\_CNT#.  
**Password** Password .  
**Name** Name of operator . It is "cut" on the right side, if it is longer than #NAME\_LEN# symbols.  
**Tab** One byte with value 09h (separator).  
**RepClaim** Authorization (= 1) / Prohibition (= 0) for issuing a claim on a claim  
**RefError** Authorization (= 1) / Prohibition (= 0) for issuance of repayment at op. error  
**RefOther** Authorization (= 1) / Prohibition (= 0) of dan. basis

Operator name is programmed. His name and number are printed at the beginning of each FISCAL RECEIPT.

**Attention:** If the operator has made operations (has issued at least one document), his name can not be changed until the sales by this operator are cleared.

## 103 (67h) INFORMATION INCLUDED IN THE RECEIPT

**Data field:** No data

**Reply:** CanVoid,Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8, InvoiceFlag,InvoiceNo

**CanVoid** Indicating the possibility to make corrections. [0/1].  
**Tax1** Total of Taxable A sales  
**Tax2** Total of Taxable Б sales  
**Tax3** Total of Taxable B sales  
**Tax4** Total of Taxable Г sales  
**Tax5** Total of Taxable Д sales  
**Tax6** Total of Taxable E sales  
**Tax7** Total of Taxable Ж sales  
**Tax8** Total of Taxable З sales  
**InvoiceFlag** Flag whether is open a detailed fiscal receipt(invoice). 0 – no; 1 - yes  
**InvoiceNo** If InvoiceFlag = 1, next invoice number - 10 digits

This command indicates if it is possible to void registered sales and gives information about the accumulated sums by tax groups.

**104 (68h) RESET SALES BY OPERATORS****Data field:** Clerk,Password**Reply:** No data**Clerk:** Number of operator : from 0 to #OPER\_MAX\_CNT#**Password:** Operator password

When the number of operator and password are correctly entered, FD clears the accumulated data from sales for the particular operator. When entering operator 0 and password of supervisor, Z report is made for all operators.

**105 (69h) REPORT BY OPERATORS****Data field:** No data**Reply:** No data

FD executes X report by operator

**106 (6Ah) OPEN TILL****Data field:** [{mSec}]**Reply:** No data

mSec Length of pulse in msec (50 or more).

For till opening, a pulse with given length is sent. The parameter sets new value for pulse length, which is stored in FD. If the parameter is skipped, the last set value is used. Value of 100 ms. is set by default.

**107 (6Bh) PROGRAMMING, ERASING AND READING DATA FOR PLUs****Data field:** {Item}[Data]**Reply:** Code[,Data]**Code** 1 symbol indicating the result:

"P" – valid command.

"F" – invalid command.

**Item** Setting the required operation. Acceptable values are: "P", "D", "R", "F", "N".*"P" – Plu's programming***Data field:** {P}{TaxGroup}{PLUNum},{Price},{Name}[[CR]{BARCODE}  
[,Dept[,FracQty[,StockQty]]]]**TaxGroup** TaxGroup (Cyrillic letter А,Б,В,Г,Д,Е,Ж,З).**PLUNum** Serial PLU's number.**Price** Unit price of PLU (up to 8 digits).**Name** Name of PLU. "Cut" to the right if longer than # NAME\_LEN # characters.**CR** 1byte with value 0Ah.**BARCODE** Barcode of PLU. Transmission of up to 13 bytes in ASCII format (33h 38h 30h 30h 30h 30h 31h 31h 30h 31h 38h 31h 35h).**Dept** Number of department to which the PLU refers.**FracQty** Is is not used. For compatibility set 1

**StockQty**

PLU on stock

After **Code** the number of free PLU is returned.

**Attention: Tax group of PLU is not kept in the record for every PLU**, but is taken from the linked to it department. This leads to the following features:

- If the PC sets tax group and department, FD will ignore the set tax group from the PC.
- If during programming a new PLU, PC sets a tax group without a department, FD will "attach" PLU to a service department, and will forbid the sale of this PLU by keyboard.
- If you reprogram the tax group of the department, you automatically re-program the tax groups of all PLUs attached to this department.

**"D" – Deleting PLUs..**

**Data field:** {D}{A|PLU|PLU1,PLU2}

**A** Deleting all PLUs with zero accumulated sums

**PLU** Deleting the indicated number of PLU, if there is no accumulated sums.

**PLU1,PLU2** Deleting PLUs in the increment period with no accumulated sums.

When the command is successfully completed "P" is returned and number of free PLUs

**"R" – reading PLU data.**

**Data field:** {R}{PLU}

**Reply:** {P},{PLU}, {Time}, {TaxGroup},{UnitPrice},{Amount},{Total},  
{Name}{CR}{BARCODE},Dept,FracQty,StockQty

**PLU** Number of PLU

**Time** Date and time of the last PLU programming

**TaxGroup** Tax group (1 byte). Cyrillic letter А,Б,В,Г,Д,Е,Ж or 3

**UnitPrice** Unit price.

**Amount** Accumulated quantity for sales. Number with 3 decimal symbols.

**Total** Accumulated sale sum.

**Name** PLU name.

**CR** 1byte with value 0Ah (delimiter).

**BARCODE** ASCII string,length up to 13 digits.

**Dept** Number of department to which the PLU refers.

**FracQty** It is not used.Always equal to 1.

**StockQty** Stock quantity of PLU

If the indicated number of PLU is beyond of the acceptable values ( from 1 to #PLU\_MAX\_CNT#), one byte "F" is returned.

**"F" – retrieves data about the first found programmed or sold PLU.**

**Data field:** {F}[Type]

**Type - Type - Type of searching:**

0 - /Default value/ -searching the first programmed PLU.It influences the following commands "N".

1 – searching the first PLU by which sales are registered. It influences the following commands "N".

**"N" – returns data for the first found programmed or sold PLU (according to the type of command "F")**

**Data field:** {F}

The reply of subcommands "F" and "N" is analogical to subcommand "R".

The HOST uses the last 2 for extraction of data for all programmed/sold PLUs. First you have to set subcommand "F" and then subcommand "N" till Reply "F" is received.. This means that the last PLU has been read.

### 108 (6Ch) DETAILED DAILY REPORT WITH PRINTING OF PLUs

**Data field:** {Option}  
**Reply:** [Closure, Tax1, Tax2, Tax3, Tax4, Tax5, Tax6, Tax7, Tax8,  
 StTax1, StTax2, StTax3, StTax4, StTax5, StTax6, StTax7, StTax8]

The command is analogical to "DAILY FINANCIAL REPORT" (69), but at the start of the daily report there is printing of sales by PLUs.

### 109 (6Dh) PRINT DUPLICATE DOCUMENT

**Data field:** {Count}  
**Reply:** No data

**Count** Number of duplicates. This parameter must be 1

### 110 (6Eh) INFORMATION ABOUT CURRENT DAY

**Data field:** [All]  
**Reply:** Cash, Pay1, ..., PayX, ZRepNo, DocNo, InvoiceNo

**All** Optional parameter (1 byte). If it is set equal to "A", FD returns information by all types of payments (#PAY\_MAX\_CNT#), if not - by 4  
**Cash** Payment in cash.  
**Pay1, ..., X** Sum Payment 1, ..., X.  
**ZRepNo** Number of the last Daily financial report written in FM.  
**DocNo** Number of next document.  
**InvoiceNo** Next invoice number (10 digits).

When this command is received FD returns information about the daily amount distribution by types of payment.

### 111 (6Fh) REPORT BY PLUs

**Data field:** [RepType]  
**Reply:** Code

**RepType** Specifies the type of printed information. Admissible values:  
 "0" – FD is printing X report by PLUs .  
 "1" – FD is printing all programmed PLUs  
 "Z" – FD is printing Z report by PLUs  
 If it is not indicated in other way, value "0" is set.  
**Code** One byte with the following options:  
 "P" – when the operation is successfully completed  
 "F" – when the operation is unsuccessfully completed

### 112 (70h) INFORMATION ABOUT OPERATORS

**Data field:** Clerk  
**Reply:** Receipts,Total,Discount,Surcharge,Void,Name  
 <Tab>RefClaim,RefError,RefOther,RepClaim,RepError, RepOther

**Clerk** Indicating operator number from 1 to #OPER\_MAX\_CNT#.  
**Receipts** Indicating number of fiscal receipts which were issued by a certain operator.  
**Total** Indicating number of sales and total sum divided by ‘;’.  
**Discount** Number of discounts and total amount of discounts ,divided by ‘;’.  
**Surcharge** Number of surcharges and total amount of surcharges ,divided by ‘;’.  
**Void** Number of corrections and total amount, divided by ‘;’.  
**Name** Operator name.  
**Tab** One byte with value 09h (separator).  
**RefClaim** Authorization (= 1) / Prohibition (= 0) for issuing a claim on a claim  
**RefError** Authorization (= 1) / Prohibition (= 0) for issuance of repayment at op. error  
**RefOther** Authorization (= 1) / Prohibition (= 0) of dan. basis  
**RepClaim** Number of Notes and Amount Amount Out of Reaction divided by ‘;’  
**RepError** Number of Notes and Amount Amount at Op. error separated by ‘;’  
**RepOther** Number of notes and amount of dan. a base separated by ‘;’

### 113 (71h) FINAL DOCUMENT NUMBER

**Data field:** No data  
**Reply:** DocNumber

**DocNumber** Number of last issued document

### 114 (72h) DATA FROM FM BY NUMBER

**Data field:** {FiscNum},{Options},{FiscNum1}]  
**Reply:** Code, Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8  
 [,StTax1,StTax2,StTax3,StTax4,StTax5,StTax6,StTax7,StTax8]

**FiscNum** number of fiscal record (start date).  
**Options** Specifies the type of the received data (1 byte):  
 = ‘0’ – returning the sums by tax groups.  
 = ‘1’ – returning the net sums by tax groups.  
 = ‘2’ – returning the accumulated taxes by tax groups.  
 = ‘3’ – returning tax bases.  
 = ‘4’ – returning the sums by tax groups for the indicated period  
 = ‘5’ – returning the net sums by tax groups for the indicated period.  
 = ‘6’ – returning the accumulated taxes for the indicated period.  
**FiscNum1** Number of fiscal record (end date) for check up “4”, ”5” and “6”. For check up 0, 1, 2 and 3, the field have to be empty.  
**Code** 1 byte with value:  
 “P” – valid data;  
 “F” – invalid control sum of the record;  
 “E” – the chosen record is empty in FM  
 .  
**Tax1,...,Tax8** Sum or percentage according to **Options**.  
**StTax1, ..., StTax8** Sum operations when **Options** is different than 3

### 115 (73h) LOADING OF GRAPHIC LOGO

**Data field:** {Number},{Data}

**Reply:** No data

**Number** Indicates the number of bitmap lines, which are in process of programming. Values from 0 to (#BITMAP\_Y# - 1).

**Data** Graphical Logo data in pixels. Set in hexadecimal type, 2 symbols for each data byte (B8h → 42h 38h). The maximum number set pixels is #BITMAP\_X#. By using this command, a graphical Logo is programmed (BMP) upon request of the customer. It's printing before the HEADER of each receipt.

Graphical Logoprinting is activated by command (43).

**Attention:** In order to determine the content of whole graphical logo, the command must be executed #BITMAP\_Y# times (once for each line).

### 116 (74h) Getting QR data from the last document

**Data field:** No data available

**Reply:** {Result} [DocType, Data]

**Result** One byte with value "P" (Pass) or "F" (Fail)

**DocType** One byte with value "F" (Fiscal) or "S" (Service)

**Data** - If the document is not accompanied by QR barcode printing, FU returns "XXXXXX"  
- If the document is accompanied by QR barcode printing, FU returns:

**OpType, QRData**

**OpType** - 1 byte with values:

"0" = Fiscal for sale

"1" = Stamped fiscal receipt due to claim

"2" = Stamped fiscal receipt due to operator error

"3" = Strong fiscal receipt due to us. of the tax base

**QRData** - QR bar code data

### 117 (75h) FIRST NON-SENT NUMBER FISCAL RECEIPT

**Data field:** No data

**Reply:** Minus|DocNo|Error

**Minus** If the FD is not registered or has sent all the documents, it must be submitted --- (3 mins)

**DocNo** The number of the first fiscal coupon not sent to the server

**Error** In case of an error when reading the data from the EJT, an errorXX text is sent, where XX is the error number

### 118 (76h) Information firmware

**Data field:** No data

**Reply:** {EShopEn}{EShopActive},{FDCertCurr},{FDCertFM}

**EShopEn** One byte with value "0" = firmware does not support or "1" = firmware supports online store operation

**EShopActive** One byte with value "0" = FD not registered for online store, or "1" = FU registered for online store  
**FD CertCurr** Current firmware version of FD  
**FD CertFM** Last confirmed by the server firmware version of FD

## 128 (80h) GET CONSTANT VALUES

**Data field:** No data  
**Reply:** {P1},{ P2},{.....},{P25}

- P1 Horizontal size of graphic logo in pixels.
- P2 Vertical size of graphic logo in pixels..
- P3 Number of payment types
- P4 Number of tax group.
- P5 It is not used for Bulgaria
- P6 It is not used for Bulgaria
- P7 Symbol concerning first tax group
- P8 Dimension of inner arithmetics
- P9 Number of symbols per line
- P10 Number of symbols per comment line
- P11 Length (number of symbols) of names (operators,PLUs,departments)
- P12 Length (number of symbols) of the ID number of FD
- P13 Length (number of symbols) of the FM number
- P14 Length (number of symbols) of Tax Identification Number, for Bulgaria = 0
- P15 Length (number of symbols) of the BULSTAT (EIK) registration number
- P16 Number of departments.
- P17 Number of PLUs.
- P18 Flag of stock field, described in PLU (0,1).
- P19 Flag of barcode field,described in PLU (0,1).
- P20 Number of stock groups.
- P21 Number of operators.
- P22 Length (number of symbols) of the payment names
- P23 Number of fuels. If the FD is not working with fuels = 0.
- P24 Not used = 0
- P25 Not used = 0

## 130 (82h) CANCEL RECEIPT

**Data field:** No data  
**Reply:** Allreceipt, FiscReceipt

**Allreceipt** Number of all issued receipts from the last balance of the day till now.  
**FiscReceipt** Number of all issued fiscal receipts from the last balance of the day till now.

When receiving this command FD:

1. makes correction to all registered sales in the fiscal receipt;
2. completes operation payment in cash for 0.00;
3. closes fiscal receipt

## 131 (83h) PROGRAM DEPARTMENTS

**Data field:** {Item}[Data]  
**Reply:** Code[,Data]

**Code** 1 symbol, indicating the result::



“P” – valid command.

“F” – invalid command.

**Item** Specifies the type of required operation. Acceptable values: “P” and “R”.

#### “P” – programming departments

**Data field:** {P}{DeptNum},{Name}{CR}{TaxGroup},{Price}[,{MaxDigits}]

**DeptNum** Number of department (from 1 to #DEPT\_MAX\_CNT#)  
**Name** Name of department. It is "cut" at the right side, if it is longer than #NAME\_LEN#symbols.  
**CR** 1 byte with value 0Ah.  
**TaxGroup** Tax group. 1 byte of (A,B,B,Г,Д,E,Ж,З)  
**Price** Unit price of department (up to 8 digits). It is not used. For compatibility send 0.  
**MaxDigit** Maximum acceptable number of digits for free unit price entered. If there is no value (or value=0), it will be impossible to sale by this department (command **138**)

**Attention:** Can't change the name or the tax group of the department, if there are sales on that department and the corresponding Z reports are not issued. Check the error number (status byte 3) and print the necessary Z report.

#### “R” – Reading data about department.

**Data field:** {R}{DeptNum}  
**Reply:** {P},{DeptNum},{Name}{CR}{TaxGroup},{Price},{Amount},  
 {Total},{PerAmount},{PerTotal},{MaxDigits}

The information is anallogical to the command for programming departments.

**Amount** Accumulated quantity at sale by this department in the daily report. Number with 3 decimal symbols.  
**Total** Accumulated amount from registrated sale by this department in the daily report.  
**PerAmount** Accumulated quantity at sale by this department in the periodic report. Number with 3 decimal symbols.  
**PerTotal** Accumulated amount from registrated sale by this department in the periodic report.

If the indicated number of department is not found, FD returns Code = ‘F’.

### 132 (84h) LOAD CONVERTING TABLE FOR DISPLAY

**Data field:** Address,Data

**Reply:** No data

**Address** Initial address in the converting table in hexadecimal type, two symbols per each byte information. Acceptible values are 80h, A0h, C0h, E0h (80h → 38h 30h).  
**Data** Data for covering (32 bytes) in hexadecimal type, two symbols per each byte information (B8h → 3Bh 38h).

After completing successfully this command 4 times (in order to transfer the whole table from address 80h to FFh) is possible a cooperation between FD and external display even at different code tables. Each text which FD transfers to the display (except when using command 64h), is first converted according to the loaded table and then is sent to the display.

### 133 (85h) DESCRIPTION AND COMMANDS FOR DISPLAY

**Data field:** Type,Data

**Reply:** No data

**Type:** One of the following symbols:

<b>R</b>	Sets the number of display lines (system parameter 43: for further details see "User's manual")
<b>C</b>	Sets the number of symbols per line on display (system parameter 44: for further details see "User's manual")
<b>S</b>	Sets communication speed with display (system parameter 45: for further details see "User's manual")
<b>0 - 9</b>	Command number to be sent to display
<b>Data:</b>	<p>If in field <b>Type</b> is set <b>R</b>, <b>C</b> or <b>S</b>, then in field <b>Data</b> is set a new value of the parameter.</p> <p>If in field <b>Type</b> is set a command index, then in field <b>Data</b> the very command is described in the following format:</p> <p><b>Letter[CmdBody[,miliSec]]</b></p>
<b>Letter</b>	<p>Type of command. One of the following letters:</p> <p>‘<b>D</b>’ – delete command. The rest data ( if there is) are ignored.</p> <p>‘<b>I</b>’ – command for initialization. It is sent to display every time the FD is turned on.</p> <p>‘<b>B</b>’ – command for start of data. It is sent to display before the other data.</p> <p>‘<b>N</b>’ – command „new line”. It is sent to display at the beginning of each new line.</p> <p>‘<b>E</b>’ – command for end of data. It is sent to display after all data is sent.</p> <p>‘<b>O</b>’ – command turn off. It is sent to the display when the FD turns off.</p>
<b>CmdBody miliSec</b>	<p>Command body – 10 bytes in hexadecimal type, two symbols per each byte of information.</p> <p>Time in miliseconds, which FD waits for after sending the command.</p>

This command enables to set the FD operation with different kind of displays. If in the list of commands there are more than one from the same kind, they are completed according to their index.

### 138 (8Ah) SALE BY DEPT

**Data field:** **{[Sign]Dept}{@Price} [\*{QTY}][,Percent] [\$Netto]**  
**Reply:** **No data**

**Sign** 1 byte with value ‘+’ or ‘-’. If Sign = ‘-’, then a correction(void) of the last sale with the same price, quantity and number of department is made as well as ignoring fields Percent and Netto.

**Dept** Department number (up to 2 digits).

**QTY** See the command **49(31h)**.

**Percent** See the command **49(31h)**.

**Netto** See the command **49(31h)**.

**Price** See the command **49(31h)**.

FD prints the name of the department with the price, tax group code and quantity.  
 If discount or surcharge is entered, it is printed on a separate line.

*The SLAVE doesn't react to the command if:*

- See the command **49(31h)**.

### 146 (92h) INFORMATION FROM FM BY DATE

**Data field:** **{FiscDateBgn},{Options}[,FiscDateEnd]**  
**Reply:** **Code, Tax1,Tax2,Tax3,Tax4,Tax5,Tax6,Tax7,Tax8**  
**[,StTax1,StTax2,StTax3,StTax4,StTax5,StTax6,StTax7,StTax8]**

**FiscDateBgn** Date of fiscal record (start of period) in format DDMMYY.

<b>Options</b>	Determines type of the received information (1 byte): = '0' – returns the sums by tax groups. = '1' – returns the net sums by tax groups. = '2' – returns the accumulated taxes by tax groups. = '3' – returns tax rates. = '4' – returns the sums by tax groups for the indicated period. = '5' – returns the net sums by tax groups for the indicated period. = '6' – returns the accumulated taxes for the indicated period.
<b>FiscDateEnd</b>	Date of fiscal record (end of period) in format DDMMYY for reference "4", "5" and "6". For reference 0, 1, 2 and 3 this field must be empty.
<b>Code</b>	<i>One byte with value:</i> "P" – correct data; "F" – incorrect control sum of record; "E" – in FM there is no data for the indicated period.
<b>Tax1,...,Tax8</b>	Sum or percentage depending on <b>Options</b> .
<b>StTax1,...,StTax8</b>	Sum of reversal operation when <b>Options</b> other than 3

## 149 (95h) PROGRAMMING TEXT

**Data field:** {Item}[Data]  
**Reply:** [Data]

**Item** Determines the type of the required operation.. Acceptable values: "P" and "R".

This command is used for programming and reading text

*"P" – programming text.*

**Data field:** {P}{Number},{Text}

*"R" – reading text.*

**Data field:** {R}{Number}

**Reply** {Text}

**Number** Number,which meaning is:  
**40 to 47** – (Number – 40) – number of HEADER line/ FOOTER line  
The text is limited to #CHARS\_PER\_LINE# symbols  
**60 to 64** – name of payment  
The text is limited to #PAYNAME\_LEN#symbols  
**600 to 609** – commentary lines  
The text is limited to #COMMENT\_LEN# symbols

**Text** Text

**Attention:** The first commentary line (Number = 600) is printed like comment before the set BULSTAT (EIK) registration number on the 3<sup>rd</sup> line of the cliché.

**Attention:** If the payment names are changed, the TAG for communication with the tax server must be correct - see command **151(97h)**.

## 150 (96h) SET SYSTEM PARAMETERS

**Data field:** {Item}[Data]  
**Reply:** [Data]

**Item** Determines the type of the required operation.. Acceptable values: "P" and "R".

*"P" – programming value parameters.*

**Data field:** {P}{Number},{Value}

*“R” – reading value parameters.*

**Data field:** {R}{Number}

**Reply:** {Number},{Value}

**Number** Number of system parameter (see User’s manual).

**Value** Parameter value. The specific meaning depends on the type of parameter.

## 151 (97h) SET PAYMENTS (CURRENCIES)

**Data field:** {Item}{Data}

**Reply:** {Data}

**Item** Determines the type of the required operation. Acceptable values: “P” and “R”.

*“P” – programming name and currency rate of payment.*

**Data field:** {P}{Number},{Name}{{TAB}{Rate},TagNo}

*“R” – reading parameter value.*

**Data field:** {R}{Number}

**Reply:** {Number},{Name}{{TAB}{Rate},{TagNo}

**Number** Payment number (from 1 to #PAY\_MAX\_CNT#)

**Name** Payment name. It is "cut" at the right side, if it is longer than #NAME\_LEN# symbols.

**TAB** Delimiter (ASCII 09)

**Rate** Currency rate.

**TagNo** Tag number for sending X and Z data to the tax authority server. 0 = <SCash>, 1 = <SChecks>, ....., 10 = <SR2> (Only for FD with tax terminal)

## 152 (98h) PROGRAM/READ/DELETE CLIENT DATA

**Data field:** {Item}{Data}

**Reply:** Code[,Data]

**Code** 1 symbol, indicating the result::

“P” – valid command.

“F” – invalid command.

**Item** Determines the type of the required operation. Acceptable values:

“P”, “D”, “R”, “F”, “N”.

*“P” – programming client data*

**Data field:**

{P}{EIK}{{TAB}{ZDDNo}{{TAB}{Receiver}{{TAB}{Buyer}{{TAB}{Address1}{{TAB}{Address2}}]]]]]

**EIK** BULSTAT (EIK) registration number of the buyer

**ZDDNo** VAT number of the buyer

**Receiver** Receiver

**Buyer** Buyer

**Address1** Address line 1

**Address2** Address line 2

**TAB** One byte with value 09h (delimiter).

**Note:** If there is a client with the same **EIK**, than the data for this client will be changed. If there is no client with the same **EIK** than there is free space, than a new client will be added. The maximum number of clients is 2000.

**“D” – Deleting client data**

**Data field:** {D}{A|EIK}

**A** Deletes all clients

**EIK** Deletes the client with that BULSTAT (EIK) registration number

**“R” – ~Reading and sending client data**

**Data field:** {P}{EIK}

**Reply:** Code[,Data]

If Code = “P”, returns

**Data :** {P}{EIK}{TAB}{ZDDNo}{TAB}{Receiver}{TAB}{Buyer}{TAB}{Address1}{TAB}{Address2}

**“F” – Returns data about the first client**

**Data field:** {F}

**“N” –Returns data about the next client.**

**Data field:** {N}

The reply of subcommands “F” and “N” is analogical to subcommand “R”.

The HOST uses the last 2 for extraction of data for all programmed clients. First you have to set subcommand “F” and then subcommand ”N” till Reply ”F”is received.. This means that the last client has been read.

**Note:** This command is created to make easy the invoicing from the FD keyboard. If the FD is working in Fiscal printer mode, the client data are printed as shown in command 57(39Hex)

## 153(99h) SEND REPORTS IN TEXT TYPE

**Data field:** No data

**Reply:** No data

After receiving this command, if within 5 seconds FD does not receive any new command related to report, then the indicated report is completed, and instead of printing FD sends the data by RS line by line and after every line waits for confirmation from the PC that it is accepted.

**Data structure from FD to PC:**

<SUB><SndLineNo><TAB><Font><TAB><Text><LF><CR>

or

<SUB><TAB><Font><LF><CR>

<SUB> One byte with value 1Ah

<SndLineNo> Serial number of line in the report

<TAB> Delimiter. One byte with value 09h

<Font> Type of data, one symbol. Acceptable values: “N”,”B”or”E”

“N”(Normal) – normal print. Field <Text> contains #CHARS\_PER\_LINE# symbols

”B”(Bold) – print with double width of letters. The field <Text> contains

(#CHARS\_PER\_LINE#/2) symbols

”E”(Empty) – empty line (end of data transerring). No field <Text>

<Text> Text on the corresponding line

<LF> One byte with value 0Dh

<CR> One byte with value **0Ah**

After sending every line FD waits for confirmation from PC for its accepting. As unpacked one byte code message with code **1Ah**.

When there is no confirmation, as well as when turning off the power supply, FD stops sending data to PC.

**List of commands for reports,  
To which FD conforms with the preliminary accepted command 99h**

**50 (32h) RECEIVING TAX RATES**  
**73 (49h) REPORT FROM FM BY NUMBER**  
**79 (4Fh) BRIEF REPORT FROM FM BY DATE**  
**94 (5Eh) REPORT FROM FM BY DATE**  
**95 (5Fh) BRIEF REPORT FROM FM BY NUMBER**  
**105 (69h) REPORT BY OPERATORS**  
**111 (6Fh) REPORT BY PLU**

**Note:** FD will return error, if will set **RepType** = "Z", it means., it can't be completed Z report by PLUs

**165 (A5h) REPORT BY DEPARTMENTS**

**Note:** FD will return error if it is set **RepType** = "Z", it means., it can't be completed periodical Z report by departments

**166 (A6h) PRINTING SYSTEM PARAMETERS**

After sending all lines from the report, FD replies to the PC with the corresponding reply command.

**For example:**

In order to receive system parameters by RS, you have to send command **99h**, followed by command **A6h**

In order to receive by RS brief report from FM from 1 January 2016 to 31 December 2017, you have to send command **99h**, followed by command **4Fh** with data 010116,311217

### 165 (A5h) REPORT BY DEPARTMENTS

**Data field:** [RepType]

**Reply:** Code

**RepType** Determines the type of the printed information.  
 Acceptable values:  
 "0" – FD prints X report by departments.  
 "1" – FD prints the programmed data for all departments  
 "X" – FD prints periodic X report by departments.  
 "Z" – FD prints periodic Z report by departments.  
 If it is not indicated value "0" is accepted.

**Code** One byte with the following options:  
 "P" –when the operation is completed successfully  
 "F" - when the operation is not completed successfully

### 166 (A6h) PRINT SYSTEM PARAMETERS

**Data field:** No data

**Reply:** Code

**Code** One byte with the following options:  
 "P" –when the operation is completed successfully  
 "F" - when the operation is not completed successfully

FD prints number, name and system paraters' values.

## 194(C2h) TEST/ READ DATA FROM TERMINAL

**Data field:** {Item}[PIN]

**Reply:** Data

**Item** 1 byte with value "T", "W", "I", "S" or "C"

**Data** Depends of **Item**

**Item = "T"** test the communication between the FD and the terminal

**Reply:** {Error}[,Level,Attached,IMSI,ICC\_ID,IMEI]

**Error:** Modem communication error: 0 = no error, for further details see "User's manual"

**Level:** GSM signal level in percents

**Attached:** 1 byte with value „1” if the SIM card is successful registered in the mobile operators cell.  
If the value is „0” and the GSM signal level is good, please check if the SIM card is active and paid. FD will block after 3 daily reports.

**IMSI:** SIM card IMSI number.

**ICC\_ID:** SIM card ID number.

**IMEI:** GSM modem ID number.

**Item = "W"** test the communication between the terminal and the tax authority

**Reply:** {Error}[,ErrString]

**Error:** An error occurred while trying to communicate with tax authority server. 0 = no error, for further details see "User's manual"

**ErrString:** Text field (up to 40 symbols) with error description.

**Item = "I"** FM information about the active SIM card.

**Reply:** {IMSI,MSISDN,OPID}

**IMSI:** SIM card IMSI number.

**MSISDN:** SIM card phone number

**OPID:** mobile operator number:

**0 – Mtel**

**1 – Globul**

**2 - Vivacom**

**Item = "S"** FM information about the active SIM card.

**Reply:** {IMSI,MSISDN,OPID}

**IMSI:** SIM card IMSI number.

**MSISDN:** SIM card phone number

**OPID:** mobile operator number:

**0 – Mtel**

**1 – Globul**

**2 - Vivacom**

**Item = "C"** removing the SIM card PIN code

**Data field:** {C}{PIN}

**Reply:** No data

**PIN** SIM card PIN code

If the SIM card is secured by PIN code, the modem can't work properly with this card. If an error 107 occurs, the PIN code should be removed.

**Attention:** The SIM card will block after 3 incorrect PIN codes entering.

## 195(C3h) EJT REPLACEMENT AND REPORTS

**Data field:** {Item}[,Data]

**Reply:** Code

**Item** 1 byte with value "I", "S" or "R"  
**Data** Depends of **Item**

**Item = "I"** EJT replacement

**Data field:** {I}[Reason]

**Reply:** No data

**Reason** Optional parameter. If the reason for replacement is damaged EJT, enter 1.  
 If other reason – do not enter anything.

**Item = "S"** Print EJT summary data

**Data field:** {S}

**Reply:** No data

**Item = "R"** Print/read EJT data

**Data field:** {R}{PrnType},{Bgn},{End}[,Send]

**Reply:** No data

**PrnType** Indicates report type. Acceptable values:  
**1** Prints all documents by document number  
**2** Prints all documents by Z report number  
**3** Prints all documents by date

**11** Prints all Z reports by document number  
**12** Prints all Z reports by Z report number  
**13** Prints all Z reports by date

**21** Prints fiscal receipts by document number  
**22** Prints fiscal receipts by Z report number  
**23** Prints fiscal receipts by date

**Bgn** Beginning (document number, or Z report number, or date according **PrnType**)

**End** End (document number, or Z report number, or date according **PrnType**)

**Send** Optional parameter. If the parameter is set, the FD doesn't print, but send the data line by line via RS. After every line, the FD waits confirmation of receiving from the PC. The confirmation is unpacked one byte code message with code **11h**. If there is no confirmation of receiving or if the power supply is turned off, the FD stops sending data to PC.

### If **Send = "A"**

#### Document details:

D<Tab>DocNo<Space>DD.MM.YYYY<Space>HH:mm:ss<Tab>DocType<Tab>  
 Refund<Tab>TransNum<Tab><Mult><Tab>UNP<Tab>InvoiceNo  
 [<Tab>FMNo<Tab>SaleDocNo<Tab>SaleInvoiceNo]

D = 44Hex

Tab = 09Hex

Space = 20Hex

DocNo – document number

DD.MM.YYYY - date of issue of the document



HH: mm: ss - time of issue of the document

DocType

Doc Type	Explanation
1	Document for sale
2	X report
3	Z report
4	Fiscal memory report
5	Reset RAM
8	Service receipt
11	Document in Sales mode, unrelated to trade operation
12	Copy of document

**Warning:** The older 2 bits reserved for flags 0x40 = ECL write snd 0x80 = fiscal receipt.

Example, daily financial report with reset and save to FM, will have DocType = 0x80|0x40|0x03 = 0xC3= 195

**Refund** – type of the document:

- 0 = sale
- 1 = transactions “return/claim”
- 2 = transactions “operator error”
- 3 = transactions “reducing the tax base”
- 11 = “ServInput ”service input
- 12 = “ServOutput ”
- 13 = daily report (X)
- 14 = other service document
- 255 = document for fiscalisation

**TransNum** – number of transactions (possibly +1) – total number of analytics records for the document – see below

- Mult = 1 or 100
- UNP = Unique Sales Number (if any)
- InvoiceNo Invoice number/credit note (can be 0)
- FMNo Number FM on the right receipt (if receipt transactions)
- SaleDocNo Number document on the right receipt (if receipt transactions)
- SaleInvoiceNo Number invoice on the right receipt (if receipt transactions),can be 0

**Text line data**

No change

**Analytical data for the document**

C&lt;Tab&gt;ClientData

or:

S&lt;Tab&gt;Description&lt;Tab&gt;Qty&lt;Tab&gt;UnitPrice

or:

M&lt;Tab&gt;DescriptionValue

**Type C:****ClientData** customer identification number

**Type S:**

**Description** – name of the sales unit  
**Qty** three-digit quantity after the decimal point  
**UnitPrice** single price without decimal point, read the **Mult** box for the document

**Type M:**

**Description** – name of the operation  
**SUBT-%** percent discount on intermediate amount  
**SUBT+%** percent allowance on intermediate amount  
**SUBT-\$** net discount in the intermediate amount  
**SUBT+\$** net allowance in the intermediate amount  
**-%** percentage discount on single transaction  
**+%** percentage allowance on single transaction  
**-\$** net discount in single transaction  
**+\$** net allowance in single transaction

**Value** – amount depending on **Description** – read the **Mult** box for the document