VAROS eKasa

For printers equipped with CHDU5000 secured data storage (SDS)

Programmer's Manual ver .: 1.09
Date - 10.2024

The proposed syntax of control sequences and variables can be used in competing solutions only with the consent of Varos Trade.

JSON Communication Interface.

Incorporation of New Legislative Requirements, Effective as of 01.01.2025

Modifications in the eKasa System Include the Following Changes

- ✓ Extension of the records with a new tax level
- ✓ Introduction of sales records in three VAT rates
  - Basic tax rate 23% / original tax rate 20% /
  - Reduced tax rate 19% / original tax rate 10% /
  - Reduced tax rate 5% / the original tax rate did not exist /

1. Records of original VAT rates in documents issued until 31/12/2024

1.1 The basic tax rate of 20%
1.2 The reduced tax rate of 10%

The original VAT rates will be used to return goods or services purchased before 01/01/.2025

New sequences to support a third tax level.

	VatRate – variable for determining the VAT rate for the item. Integer [1-7]{1}		
TAX RATE **VatRate**	VatRate	Description	
	1	VAT1	Basic tax rate 23%
	2	VAT2	Reduced tax rate 19%
	3	VATFREE	Exempt from tax
	4	VAT3	Reduced tax rate 5%
	5	VAT1OLD	Original Basic tax rate 20%
	6	VAT2OLD	Original Reduced tax rate 10%
	7	VAT3OLD	Original Reduced tax rate x%

- ✓ Display and printing of new VAT rates / 23% 19% 5% / on cash receipts
- ✓ Display and printing of new VAT rates / 23% 19% 5% / on all closing reports
- ✓ Display and printing of the original VAT rates / 20% 10% / on cash receipts, if the documents contain turnover at the original VAT rate.
- ✓ Display and printing of the original VAT rates / 20% 10% / on the closing reports, if the turnover is in the closing reports at the original VAT rates.
- ✓ Sending OFF-line documents to the FS server after 31/12/2024 at the original VAT rates

Vzorové pokladničné doklady s novými riadiacimi sekvenciami			
No.	*Type of Cash Receipt*	***INPUT FILE*** *to eKasa*	***PRINTED OUTPUT*** *from eKasa*
1	Document with items at VAT 23 19 0 %	CLICK to REQUEST	CLICK to RESPOND
2	Document with items at VAT 23 19 5 0 %	CLICK to REQUEST	CLICK to RESPOND
3	Document with items at VAT 23 19 5 0 % plus return of goods 20 10 %	CLICK to REQUEST	CLICK to RESPOND
4	Document with items at VAT 23 19 5 0 % plus return of goods 20 10 %	CLICK to REQUEST	CLICK to RESPOND
5	Document with items at VAT 23 19 5 0 % plus return of goods 20 10 x %	CLICK to REQUEST	CLICK to RESPOND
6	Document with items at VAT 23 19 5 0 % plus negative turnovers	CLICK to REQUEST	CLICK to RESPOND
7	CORRECTION document to Document No. 6	CLICK to REQUEST	CLICK to RESPOND

Specifying the records of the following document items and the display of VAT on the document

RP – RETURNABLE PACKAGING

Mandatory registration of the sale of returnable packaging at the technical level of VAT 0.
In other VAT levels, the sale of RP may not be recorded.
In the sales application, it is necessary to check the sending of RP with the correct control sequence
Sales VO - variables "ItemType": "VO", "Price": "positive value"
Purchase VO - variables "ItemType": "VO", "Price": "negative value"

NOTE for eKasa solution

The value of the RP must be calculated separately on the document outside the VAT breakdown.
A separate cash receipt without additional items can also be issued for the purchase of RP.

RSV – REPLACEMENT OF SINGLE-PURPOSE VOUCHER

Application of a single-purpose voucher and display of the VAT rate and amount for document items and in the recapitulation of the document, depending on the amount of the voucher redeemed.
These requirements are integrated into the eKasa solution.
The RSV can only be applied to goods at the same VAT rate "VatRate".
Purchase of RSV
Variables "ItemType": "VP", "Price": "positive value", "VoucherNumber": "voucher number"
Application of RSV
Variables "ItemType": "VP", "Price": "negative value", "VoucherNumber": "voucher number"

NOTE for eKasa solution

If the value of the goods is > the value of the RSV

- Individual items of the document and the RSV contain a VAT rate designation
- In the VAT breakdown on the document, the value of the base and the value of VAT are calculated from the difference in the amounts
  goods – RSV at the same VAT rate

If the value of the goods is <= the value of the RSV, the RSV is applied only up to the amount of items in the same tax level.

- Individual items of the document and the RSV cannot contain a VAT rate indication
- The VAT breakdown on the document cannot state the values of the base and VAT to which the RSV was applied

DAP – DEDUCTED ADVANCE PAYMENT

Advance payment and the possibility of its use. The possibility of claiming an advance payment received in the "so-called technical zero VAT rate" has been added. Such an advance payment can be applied to goods or services at different tax levels which was not allowed in the past.

To receive the advance payment at the technical zero VAT rate, the variables "ItemType": "OZ", "Price": "positive value", "VatRate": 3, "SpecialRegulation": "OOD" shall be used.

For the application of the advance payment at the technical zero VAT rate, the variables "ItemType": "OZ", "Price": "negative value", "VatRate": 3, "SpecialRegulation": "OOD" shall be used.

Application of the advance payment at the :
23% VAT rate - "Item type": "OZ", "Price": "negative value", "VatRate": 1
19% VAT rate - "Item type": "OZ", "Price": "negative value", "VatRate": 2
05% VAT rate - "Type of item": "OZ", "Price": "negative value", "VatRate": 4
excluding tax - "Item type": "OZ", "Price": "negative value", "VatRate": 3

NOTE for eKasa solution

For a positive document item at a 23% rate, an advance payment can be applied "VatRate": 1, "VatRate": 3
For a positive document item at a 19% rate, an advance payment can be applied "VatRate": 2, "VatRate": 3
For a positive document item at a 05% rate, an advance payment can be applied "VatRate": 4, "VatRate": 3
For a positive document item excluding tax, an advance payment can be applied "VatRate": 3

If an advance payment has been made in a tax level "VatRate": 1, "VatRate": 2, "VatRate": 4, it can only be applied to the purchase of goods in the same tax level.
If an advance payment has been made at the technical zero VAT rate "VatRate": 3, it can be applied to the purchase of goods at all tax levels

Original Sequences That Return Extended Response
Original Sequences That Have Changed Print Output

CLICK to REQUEST – click to open a preview of the printer request from the parent application
NEW RESPOND – click to open a preview of the new printer response from 01/01/2025
OLD RESPOND – click to open a preview of the original response from the printer

No.	*<ESC> Sequence*	*Request for eKasa*	*Answer from eKasa*	*Modification*
1	Print a continuous closing report **<ESC>x<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
2	Print the day-end closing report **<ESC>d<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
3	Print the monthly closing report **<ESC>m<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
4	Print a date turnover **<ESC>XD...<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
5	Printing of a document turnover **<ESC>XS...<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
6	Printing a LOG file **<ESC>L<ESC>e**	CLICK to REQUEST	ACK	Changing the print output
7	Reading a LOG file **<ESC>g<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level
8	Reading VAT levels **<ESC>!d<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level
9	Setting VAT rates **<ESC>+d...<ESC>e**	CLICK NEW REQUEST CLICK to REQUEST	ACK	New VAT rates will be set.
10	Reading the printer status **<ESC>!p<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by Slip printer status NV memory status
11	Reading CHDU status **<ESC>!s<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer VAT rates, code of the check register PPEKK version, setting the test mode
12	Reading information about the last document **<ESC>!I<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level
13	Reading document information **<ESC>!r...<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level
14	Reading document information **<ESC>!n...<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level
15	Reading information about sales **<ESC>!R...<ESC>e**	CLICK to REQUEST	NEW RESPOND OLD RESPOND	Extended answer by VAT level

CONTENTS

1. Programmer's Manual - Description of JSON Format >>>>

1.1 Creation of JSON cash receipts by protocol.

A new simple communication interface for data exchange — FT5000 printer in JSON format — has been designed for faster integration into parent applications.

JSON (JavaScript Object Notation) is an easy format for data exchange. It is easy for programmers to read and program. It is based on a subset of javascript ECMA-262 programming language standard. JSON is a text format that is completely language independent, but uses conventions that are known to C language programmers, including C, C++, C#, Java, JavaScript, Perl, Python, and many more. These properties make JSON the ideal language for data exchange.

Documents created in JSON format can be easily checked by the programmer using the JSON code validator without the need for hardware eKasa.

The document in JSON format is sent to the printer in the following format
Prefix + JSON document format + Sufix

Prefix	- character **<ESC>**
Sufix	- character **<ESC>e**
Syntax	- **<ESC>JSON document format<ESC>e**

Documents must be formatted in Unicode UTF-8 universal encoding.

Example:

<ESC>

JSON document format: Registration of the eKasa position with the operation address.

```
{
    "ReceiptFormat": "VAROS_JSON",
    "Version": "1.0.0",
    "ReceiptType": "GPS",
    "GPS": {
            "GpsType": "A",
            "Address": {
            "StreetName": "Rudlovská cesta",
                        "Municipality": "Banská Bystrica",
            "BuildingNumber": "53",
            "PropertyRegistrationNumber": "123",
            "PostalCode": "97401"
                        }
          }
}
```

<ESC>e

On-line WEB viewers of JSON code are freely accessible on the Internet.

CLICK to open the document creation description **JSON communication interface**

CLICK to open the application **JSON browser**

CLICK to open document validator **JSON document validator**

/ line now inoperative /

1.2 How to communicate with the FT5000 printer.

Computer communication with the eKasa FT5000 is very similar to the way the printers are controlled and managed from computers. This means that eKasa has defined control commands with which the required functions are called. Programmer does not program header, does not calculate tax in documents. This is provided by eKasa. Only document types and variables in the document are programmed, based on which eKasa knows what to do. If eKasa does not receive control sequences in the input strings, it looks like a filter. This means that it will not pass anything and will filter out all text strings, it will not pass it to the printer. If it receives a supported control sequence, it executes a command based on that sequence.

Sending command and receipts to the printer
The printer can communicate with the parent application through the interface:

- LAN, WiFi - TCP / IP protocol "Printer's IP address": Port 20543 For example: 192.168.1.69:20543
- RS232 PORT
- USB PORT / virtual RS232 port /

DESCRIPTION - Process to communicate with the FT5000 printer

Recommended procedure for sending documents to the printer

It is recommended to execute the following commands when sending documents:

- Detecting a printer connection - Identifying the printer **<ESC>i** (wait for a response)
- Checking the printer status - Reading status information **<ESC>!P<ESC>e** (wait for response)
- Sending print output - Printing the required document <ESC>JSON receipts format <ESC>e
- Print control - Read document information **<ESC>!I<ESC>e** (wait for reply)

If the response to the command is not returned with the note wait for the response, do not continue, but repeat the command.

Meaning and interpretation of characters in the manual

<0xcc>	- hexa symbol value
<ESC>	- character <0x1B> = <27>d conrol character ESC
<ACK>	- character <0x06> = <06>d true character used for some communications
<NAK>	- character <0x15> = <21>d false character used for some communications
^	- character <0x5E> = <94>d character of the variable so-called canopy
YYYY-MM-DD	- date YYYY - year, MM - month, DD - day
hh:mm:ss	- time hh - hour, mm - minute, ss - second

Meaning and Interpretation of JSON Formatting

{	- character <0x7B> = <123>d	start of JSON document or start of object
}	- character <0x7D> = <125>d	JSON format termination, or object termination
[	- character <0x5B> = <91>d	start of variable field
]	- character <0x5D> = <93>d	end of variable field
”	- character <0x22> = <34>d	variable or text string border
:	- character <0x3A> = <58>d	variable delimiter from value
,	- character <0x2C> = <44>d	end of line with variable /last line does not end with a comma/

^ 0 -^ 9 - characters <0x5E><0x30> to <0x5E><0x39> characters from the bottom of the table <0x00 - 0x09>

Variable - variables and variable values are separated by a colon
- the variable is enclosed in quotation marks "Variable": value of the variable,
- the values of the variables can be as following:

- Text string - "974 01"
- Integer value - Integer - 97401

Printer Control Commands

^N - characters <0x5E> <0x4E>	A font call - normal font
^H - characters <0x5E> <0x48>	A font call - high font
^B - characters <0x5E> <0x42>	A font call - bold
^s - characters <0x5E> <0x73>	A font call - small font
^L - characters <0x5E> <0x4C>	send <LF> character to printer /move to the next line/
^C - characters <0x5E> <0x43>	send <CR> character to printer /move cursor to the beginning of the line/
^E - characters <0x5E> <0x45>	send control character<ESC> to the printer
^^ - characters <0x5E> <0x5E>	send the character ^ to the printer
^Z - characters <0x5E> <0x5A>	open cash drawer -open_drw the signal is sent to both PIN 4-2 and PIN 4-5
^Ei - characters <0x5E><0x45><0x69>	document clipping

2. Complete List of Variables for JSON Format >>>>

2.1 JSON formatting - variables used in document creation

Use for document types: Cash receipt (PD, PPD), Invoice payment (UF, PUF) Selection (VY), Deposit (VK), Recent document (OD)

DOCUMENT HEADER	
ReceiptFormat	Fixed string specifying VAROS JSON formatting. String "VAROS_JSON" **Example:** "ReceiptFormat": "VAROS_JSON",
Version	Information about communication protocol version. String "1.0.0" Example: "Version": "1.0.0",
ReceiptType	Determining the type of document. String (PD|PPD|UF|PUF|VY|VK|GPS|OD) PD - cash receipt PPD - slip cash receipt UF - invoice payment PUF - invoice payment receipt VK - deposit VY - withdrawal GPS - location OD - recent document **Example:**"ReceiptType": "PD",
ReceptEmail	"e_mail adresa zákazníka" if the document is not printed but sent by e_mail. **Example:**"ReceptEmail": "varos@varos.sk",
DOCUMENT BODY	
AddHeader	Document body header - text at the top of document before items. String. "Document header 1st line" "Document header 2nd line" "Document header Xth line" **Example:** "AddHeader": ["Množstvo MJ Cena/MJ DPH Cena/Položku", "----------"]
InvoiceNumber	Invoice Number. Only to be used for document type ReceiptType = UF, PUF. Text string [.] {1,50} Example: "InvoiceNumber": "FA2021000353",
Paragon **ParagonNumber**	Details of the issued receipt. Must be used only for ReceiptType document type = PPD, PUF Receipt number. Integer [0-9] {5}
ParagonDate	Date of receipt issue YYYY-MM-DD String [2] [01] [0-9] {2} - [01] [0-9] - [0-3] [0-9]

ParagonTime	Time of receipt issue hh: mm: ss
	String [0-2] [0-4]: [0-5] [0-9]: [0-5] [0-9]
	
	Example:"Paragon": (receipt) {
	"ParagonNumber": 12345,
	"ParagonDate": "2021-05-30",
	"ParagonTime": "23:55:00"
	}

FOOT OF THE DOCUMENT	
Use for document types: Cash receipt (PD, PPD, ND), Payment of invoice (UF, PUF) Withdrawal (VY), Deposit (VK)	
Amount	The total amount for the document to two decimal places. Length <4..9> String [-0-9] {1,6}. [0-9] {2} Allowed values <-999999..999999> **Example:** "Amount": "25.00",

Payment
 	
PaymentIdx
 	
PaymentAmount
	Currency used in the document.
	
	Currency type. Integer [1-8]{1}
	1-Cash, 2-Payment card, 3-Currency No.3, 4-Currency No.4, 5-Currency No.5,
	6-Currency No.6, 7-Currency No.7, 8-Currency No.8
	
	The amount in the selected currency type to two decimal places.
	String [-0-9] {1,6}. [0-9] {2}
	
	Example:
	"Payment": [
	{
	"PaymentIdx": 1,
	"PaymentAmount": "15.00"
	},
	{
	"PaymentIdx": 2,
	"PaymentAmount": "10.00"
	}
	]

Customer
 	
CustomerIdType
 	
CustomerId
	Customer identification - optional variable.
	
	Customer identification type. Integer [1-4]{1}
	1 - IČO (company registration number 3 - IČ_DPH (VAT identification number)
	2 - DIČ (tax identification number) 4 - OTHER
	
	Customer identification - length <1..50> characters. String [0-9a-zA-Z] {1,50}
	
	Example:
	"Customer": {
	"CustomerIdType": 3,
	"CustomerId": "SK1020xxxxxx"
	}

AddFooter	Foot of the document - optional text at the bottom of the document. String "The foot of the document 1st line", "The foot of the document 2nd line", "The foot of the document Xth line" **Example:** "AddFooter": ["Expiration 03.10.2022 70% reimbursement by the insurance company", "The drug is only on prescription, unused drugs return to the pharmacy"]

BcodeFooter

Barcode in the document foot.

CodeType

Barcode Type: String [1-7, I, J] {1}

0 - UPC-A	4 - CODE39	I - CODE128
1 - UPC-E	5 - ITF	J - EAN128
2 - EAN13	6 - CODABAR	
3 – EAN8	7 - CODE93	

CodeHeight

Barcode height. Integer <1..127> [0-9]{1,3}

CodeWidth

Barcode width. Integer [2-6]{1}

CodeFont

Font selection for barcode description. Integer [0-2]{1}
0 - Font A
1 - Font B
2 - Font C

CodeFontPosition

Use a barcode description. Integer [0-3]{1}
0 - no description
1 - description above code
2 - description above code
3 - description above and below code

Data

The data contained in in the barcode depend on the type of code used.
String .
If the BARCODE exceeds the width of the paper, the printer will not print it.
The barcode string must match the requirements for the type of code.
It is necessary to verify the specific printer that supports the barcodes.

Code type	Code length	Allowed characters in code
UPC-A	11, 12	0~9
UPC-E	6, 7, 8, 11, 12	0~9, [d1 = '0' ak k = 7, 8, 11, 12]
EAN13	12, 13	0~9
EAN8	7, 8	0~9
CODE39	1~255	0~9, A~Z, SP, $, %, *, +, -, ., /
ITF	2~255 párne	0~9
CODABAR	1~255	0~9, A~D, a~d,$, +, -, ., /, :
CODE93	1~255	0x00~0x7F
CODE128	2~255	0x00~0x7F [ak d1 = { , d2= A, B, C]
EAN128	11,12	0~9

Example:

```
"BCodeFooter": {
"CodeType": "4",
 "CodeHeight": 40,
 "CodeWidth": 3,
 "CodeFont": 0,
 "CodeFontPosition": 2,
 "Data": "EKASA FT5000"
  }
```

CASH RECEIPT ITEMS	
For document types: Cash receipt (PD, PPD)	
ReceiptItems	Individual items of the cash receipt.
ItemType	Document item type. String (K|V|Z|OZ|VP|VO|O|RND) K - positive VP - exchange voucher V - returned VO - returnable packaging Z - discount O - reparative OZ - deducted advance RND - rounding **Example:** "ItemType": "K",
RepairType	Specification of the original document item type. Must be used for reparative items. String (K|V|Z|OZ|VP|VO) K - positive VP - exchange voucher V - returned VO - returnable packaging Z - discount OZ - deducted advance **Example:**"RepairType": "OZ",
AddPrevMessage	Optional additional description printed before item. String. "Extended description before item 1st line", "Extended description before item 2nd line", "Extended description before item Xth line" **Example:** "AddPrevMessage": ["Čiarový kód Záruka ", "4509541002 do 31.12.2022", "_____"]
AddNextMessage	Optional additional description printed after the item. String. "Extended description after item 1st line", "Extended description after item 2nd line", "Extended description after item Xth line" **Example:** "AddNextMessage": ["Tovar sa nachádza v sklade B regál číslo 25/A", (The goods are in stock B shelf number 25 / A) "Cena je stanovená na kartónové odbery"] (The price is set for cardboard orders)
Name	Item name, string length <1..255> characters. String [.] {1,255} **Example:** "Name": "Tlačiareň FT5000 s CHDU5000", (printer)
Quantity	Quantity per item is always a positive number. Up to 3 decimal places. String [0-9] {1,4}. [0-9] {2,3} **Example:**"Quantity": "2.50",
UnitPrice	Unit price for item length <1..7>. Up to 3 decimal places. String [0-9] {1,4}. [0-9] {2,3} **Example:**"UnitPrice": "10.00",
UnitMeasure	Unit of measure, string for a maximum of 3 characters. String [.] {1,3} **Example:**" UnitMeasure": "ks (pcs)",
Price	Total price per item, length <1..9> given to 2 decimal places.

	String [0-9] {1,6}. [0-9] {2} **Example:**"Price": "25.00",
VatRate	Determination of the VAT rate per item. Integer [1-7] {1} 1 – VAT1 Basic VAT rate 23% 2 – VAT2 Reduced VAT rate 19% 4 – VAT3 Reduced VAT rate 5% 3 – VAT3 Exempt from VAT. For this tax rate, the variable must be specified SpecialRegulation - classification of items in the 0 VAT rate 5 – VAT1OLD Basic VAT rate OLD 20% 6 – VAT2OLD Reduced VAT rate OLD 10% 7 – VAT3OLD Reduced VAT rate OLD x% **Example:**" VatRate": 1,
SpecialRegulation	Classification of items in the 0 VAT rate. String (OOD|CK|PT|UD|ZPS|PDP) Must be specified for VatRate = 3 For ItemType VO, the data must not be specified. OOD - exempt from VAT CK - travel agencies PT - used goods UD - works of art ZPS - collectible objects PDP - transfer of tax liability **Example:**"SpecialRegulation": "OOD",
ReferenceReceiptId	Identifier of the original document to which the repair or return of the item relates. Must be specified for ItemType: V, O. String length <1..44> characters. [.]{1,44} The following is used as a string: UID - unique identifier of the original document for the ON-line document OKP - verification code of the entrepreneur with the OFF-line document PČD - serial number of the original cash receipt issued by ERP **Example:** "ReferenceReceiptId": "O-2B080AF272254AEE880AF272251-TEST",

Seller
SellerIdType
SellerId
	Seller identifier if the item is sold on behalf of another seller.
	Seller identifier type. Integer [1-2] {1}
	1 - DIČ
	2 - IČ DPH
	The identifier of the seller is a string of length <1..50> characters.
	String [0-9a-zA-Z] {1,50}
	Example:
	"Seller": {
	"SellerIdType": 2,
	"SellerId": "SK201000005"
	}

VoucherNumber	Exchange voucher number, string of length <1..50> characters. String [.] {1,50} Must be specified for ItemType = VP **Example:** " VoucherNumber": "DARUJ ÚSMEV 202100069", (donation for a charity)
BCodeItem	Barcode after item of the document.

CodeType

Barcode Type: String [1-7, I, J] {1}

0 - UPC-A	4 - CODE39	I - CODE128
1 - UPC-E	5 - ITF	J - EAN128
2 - EAN13	6 - CODABAR	
3 – EAN8	7 – CODE93	

CodeHeight

Barcode height. Integer <1..127> [0-9]{1,3}

CodeWidth

Barcode width. Integer [2-6]{1}

CodeFont

Font selection for barcode description. Integer [0-2]{1}
0 - Font A
1 - Font B
2 - Font C

CodeFontPosition

Use a barcode description. Integer [0-3]{1}
0 - no description
1 - description above code
2 - description below code
3 - description above and below code

Data

The data contained in in the barcode depend on the type of code used.
String
If the BARCODE exceeds the width of the paper, the printer will not print it.
The barcode string must comply with the requirements for the type of code.
It is necessary to verify the specific printer that supports the barcodes.

Code type	Code length	Allowed characters in code
UPC-A	11, 12	0~9
UPC-E	6, 7, 8, 11, 12	0~9, [d1 = '0' ak k = 7, 8, 11, 12]
EAN13	12, 13	0~9
EAN8	7, 8	0~9
CODE39	1~255	0~9, A~Z, SP, $, %, *, +, -, ., /
ITF	2~255 párne	0~9
CODABAR	1~255	0~9, A~D, a~d,$, +, -, ., /, :
CODE93	1~255	0x00~0x7F
CODE128	2~255	0x00~0x7F [ak d1 = { , d2= A, B, C]
EAN128	11,12	0~9

Example:

```
"BCodeItem": {
 "CodeType": "2",
 "CodeHeight": 30,
 "CodeWidth": 3,
 "CodeFont": 0,
 "CodeFontPosition": 2,
 "Data": "8414771861470"
 }
```

2.2 JSON formatting - variables used to create eKasa position >>>>

Document type: Send information about portable cash register point of sale (GPS)

GPS HEADER	
ReceiptFormat	Fixed string specifying VAROS JSON formatting. String "VAROS_JSON" **Example:** "ReceiptFormat": "VAROS_JSON",
Version	Information about communication protocol version . String "1.0.0" **Example:** "Version": "1.0.0",
ReceiptType	Determining the type of document. (GPS) GPS - portable cash register location **Example:**" ReceiptType": "GPS",
TELO GPS	
GPS	Sending information about the point of sale of the portable cash register.
GpsType	Determining the location of the portable cash register. String (G|A|O) G - GPS coordinates of the point of sale, A - address of the site O - other information **Example:**"GpsType": "G",

GPSX
GPSY
	Point of sale coordinates. String [0-9]{2,9}.[0-9]{4,10}
	Necessary to state if GpsType = G
	Example:
	{
	"ReceiptFormat": "VAROS_JSON",
	"Version": "1.0.0",
	"ReceiptType": "GPS",
	"GPS": {
	"GpsType": "G",
	"GPSX": "19.15404",
	"GPSY": "48.74601"
	}
	}

Address	The address of the point of sale if it is not possible to determine the GPS coordinates. Must specify if GpsType = A
StreetName	Street - required entry. String [.]{1,100}
Municipality	Municipality - required entry String [.] {1,100}
BuildingNumber	House number, the name of the building - optional entry. String [.] {1,20}
PropertyRegistrationNumber	Registration number - optional entry. String [0-9] {1,10}
PostalCode	Postcode - optional entry. String [0-9] {5}

	Example:
	{
	"ReceiptFormat": "VAROS_JSON",
	"Version": "1.0.0",
	"ReceiptType": "GPS",
	"GPS": {
	"GpsType": "A",
	"Address":
	"StreetName": "Rudlovská cesta",
	"Municipality": "Banská Bystrica" ,
	"BuildingNumber": "53" ,
	"PropertyRegistrationNumber": "123" ,
	"PostalCode": "97401"
	}
	}
	}

Other	General description if it is not possible to determine the GPS coordinates or address.
	String [.] {1,255} Must be specified if GpsType = O
	Example:
	{
	"ReceiptFormat": "VAROS_JSON",
	"Version": "1.0.0",
	"ReceiptType": "GPS",
	"GPS": {
	"GpsType": "O",
	"Other": "EČ vozidla BA 123 AA; odpočívadlo Zeleneč D1"
	}
	} (Vehicle registration number BA 123 AA; rest area Zeleneč D1)

2.3 Table of context of variable application in a document >>>>

Designation 1 - variable must be used
X - variable cannot be used
0/1 - optional variable

DOCUMENT VARIABLES
PD-cash receipt, PPD- cash receipt slip
UF invoice payment, PUF invoice payment receipt
VK-deposit, VY-withdrawal, GPS-location, OD-other document
Variable type - TYPE - STRING / character string /
- INTEGER /whole number/

DOCUMENT TYPE	TYPE	PD	PPD	UF	PUF	VK	VY	OD	GPS
ReceiptFormat	STRING	1	1	1	1	1	1	1	1
Version	STRING	1	1	1	1	1	1	1	1
ReceiptType	STRING	1	1	1	1	1	1	1	1
ReceptEmail	STRING	0/1	X	0/1	X	0/1	0/1	X	X
AddHeader	STRING	0/1	0/1	0/1	0/1	0/1	0/1	1	X
InvoiceNumber	STRING	X	X	1	1	X	X	X	X
Paragon		X	1	X	1	X	X	X	X
ParagonNumber	INTEGER	X	1	X	1	X	X	X	X
ParagonDate	STRING	X	1	X	1	X	X	X	X
ParagonTime	STRING	X	1	X	1	X	X	X	X
Amount	STRING	1	1	1	1	1	1	X	X
Payment		1	1	1	1	1	1	X	X
PaymentIdx	INTEGER	1	1	1	1	1	1	X	X
PaymentAmount	STRING	1	1	1	1	1	1	X	X
Customer		0/1	0/1	0/1	0/1	X	X	X	X
CustomerIdType	INTEGER	0/1	0/1	0/1	0/1	X	X	X	X
CustomerId	STRING	0/1	0/1	0/1	0/1	X	X	X	X
AddFooter	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	X
BcodeFooter		0/1	X	0/1	X	0/1	0/1	X	X
CodeType	STRING	0/1	X	0/1	X	0/1	0/1	X	X
CodeHeight	INTEGER	0/1	X	0/1	X	0/1	0/1	X	X
CodeWidth	INTEGER	0/1	X	0/1	X	0/1	0/1	X	X
CodeFont	INTEGER	0/1	X	0/1	X	0/1	0/1	X	X
CodeFontPosition	INTEGER	0/1	X	0/1	X	0/1	0/1	X	X
Data	STRING	0/1	X	0/1	X	0/1	0/1	X	X
GPS position coordinates									
GPS		X	X	X	X	X	X	X	1
GpsType	STRING	X	X	X	X	X	X	X	1
GPSX	STRING	X	X	X	X	X	X	X	1
GPSY	STRING	X	X	X	X	X	X	X	1

Location determined by address		X	X	X	X	X	X	X	1
GPS	STRING	X	X	X	X	X	X	X	1
GpsType		X	X	X	X	X	X	X	1
Address	STRING	X	X	X	X	X	X	X	1
StreetName	STRING	X	X	X	X	X	X	X	1
Municipality	STRING	X	X	X	X	X	X	X	0/1
BuildingNumber	STRING	X	X	X	X	X	X	X	0/1
PropertyRegistrationNumber	STRING	X	X	X	X	X	X	X	0/1
PostalCode									
Location determined by description		X	X	X	X	X	X	X	1
GPS	STRING	X	X	X	X	X	X	X	1
GpsType	STRING	X	X	X	X	X	X	X	1
Other									

VARIABLES OF INDIVIDUAL DOCUMENT ITEMS - MUST BE INDICATED FOR PD, PPD DOCUMENTS

K-positive, V-returned, Z-discount, OZ-deducted advance, VP-exchange voucher
VO-returnable packaging, O-repair, RND-rounding
Variable type - TYPE - STRING / character string /
- INTEGER /whole number/

Marking **1** **- variable must be used**
X **- variable must be used**
0/1 **- optional variable**

TYP POLOŽKY	TYPE	K	V	Z	OZ	VP	VO	RND	O
ReceiptItems		1	1	1	1	1	1	1	1
ItemType	STRING	1	1	1	1	1	1	1	1
RepairType	STRING	X	X	X	X	X	X	X	1
AddPrevMessage	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
AddNextMessage	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
Name	STRING	1	1	1	1	1	1	1	1
Quantity	STRING	1	1	1	1	1	1	1	1
UnitPrice	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
UnitMeasure	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
Price	STRING	1	1	1	1	1	1	1	1
VatRate	INTEGER	1	1	1	1	1	1	1	1
SpecialRegulation /uvádza sa iba pri VatRate = 3/	STRING	1	1	1	1	1	X	X	1
ReferenceReceiptId	STRING	X	1	X	X	X	X	X	1
Seller		0/1	0/1	0/1	0/1	0/1	X	X	0/1
SellerIdType	INTEGER	0/1	0/1	0/1	0/1	0/1	X	X	0/1
SellerId	STRING	0/1	0/1	0/1	0/1	0/1	X	X	0/1
VoucherNumber	STRING	X	X	X	X	1	X	X	0/1
BcodeItem		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
CodeType	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
CodeHeight	INTEGER	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
CodeWidth	INTEGER	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
CodeFont	INTEGER	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
CodeFontPosition	INTEGER	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
Data	STRING	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

3. Status sequences in JSON format		>>>>
<ESC>!p<ESC>e	1B 21 70 1B 65	Retrieval of printer status information.
<ESC>!s<ESC>e	1B 21 73 1B 65	Retrieval of SDS status information
<ESC>!I<ESC>e	1B 21 49 1B 65	Retrieval of information about the recent document
<ESC>!r<ESC>e	1B 21 72 1B 65	Retrieving information about a selected receipt based on the receipt number
<ESC>!n<ESC>e	1B 21 6E 1B 65	Retrieving information about the selected document based on the receiptId - 15 characters
<ESC>!R<ESC>e	1B 21 52 1B 65	Retrieval of turnover report since the recent date of daily closing

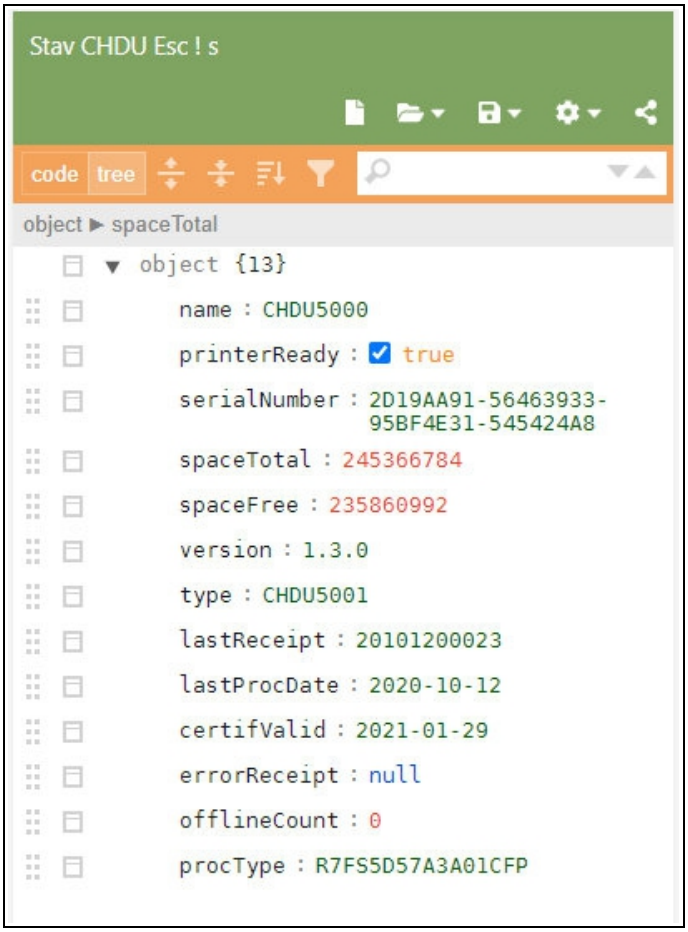
Function:	**Status information obtained from the fiscal printer** **<ESC>!<mandatory parameter><ESC>e**
Start command:	**<ESC>!**
Mandatory parameter:	**<h> <0x68> reading out head** **<D> <0x44> eading out code of printer** **<d> <0x64> reading out tax levels** (7 levels - VAT1, VAT2, VATFREE, VAT1OLD, VAT2OLD, VAT3, VAT3OLD) **<v> <0x76> reading out of device version** (FM400010, FM500010) **<T> <0x54> reading out of testing mode attribute** (test mode = 1, stable mode = 0) **<c> <0x63> reading out of validity of certificate** (YYYYMMDD) **<O> <0x4F> eading out number of OFF-LINE documents** (00001) **<s> <0x73> retrieval of SDS status information** **JSON format** **<p> <0x70> retrieval of printer status information** **JSON format** **<I> <0x49> retrieving information about the recent receipt** **JSON format** **<r> <0x72> retrieving information about the receipt** **JSON format** **<n> <0x6e> retrieving information about the receipt** **JSON format** **<R> <0x52> retrieving the turnover report** **JSON format**
Command end:	**<ESC>e**
Format:	**<0x1B><0x21><mandatory parameter><0x1B><0x65>**
Description:	The function returns the required information from the printer. The type of information required is selected based on the parameter. <**p,s,I,R**> The first byte of the response contains ACK or NAK information. **ACK** will return if <ESC>! is followed by a supported mandatory parameter.. The next 2 characters contain the information about status information length, the rest of the packet contains the required information. **NAK** is returned if an unsupported parameter is used. In the case of communication via the print manager, only the required information is returned which is stored in the fm_sts.bin file.
Example answer:	ACK<dlzkaH><dlzkaL><prijaté dáta danej dĺžky> (received data of a given length) NAK - unsupported query

3.1 Retrieval of SDS status information - ESC! s >>>>

CLICK to open the web application to view JSON formats [JSON browser]

CLICK to open the retrieved [CHDU5000 status in JSON format]

Display of retrieved CHDU5000 status information in JSON browser.



name	- the name of SDS
printerReady	- printer readiness
serialNumber	- serial number of SDS
spaceTotal	- total memory size of SDS
spaceFree	- free memory size SDS
version	- SDS version
type	- type of SDS
lastReceipt	- number of the recent document
lastProcDate	- date of recent document
certifValid	- certificate validity
errorReceipt	- number of incorrect documents
offlineCount	- number of unsent documents
procType	- processor type in SDS

3.2 Retrieval of printer status information - ESC! p >>>>

CLICK to open the retrieved [Printer status in JSON format]

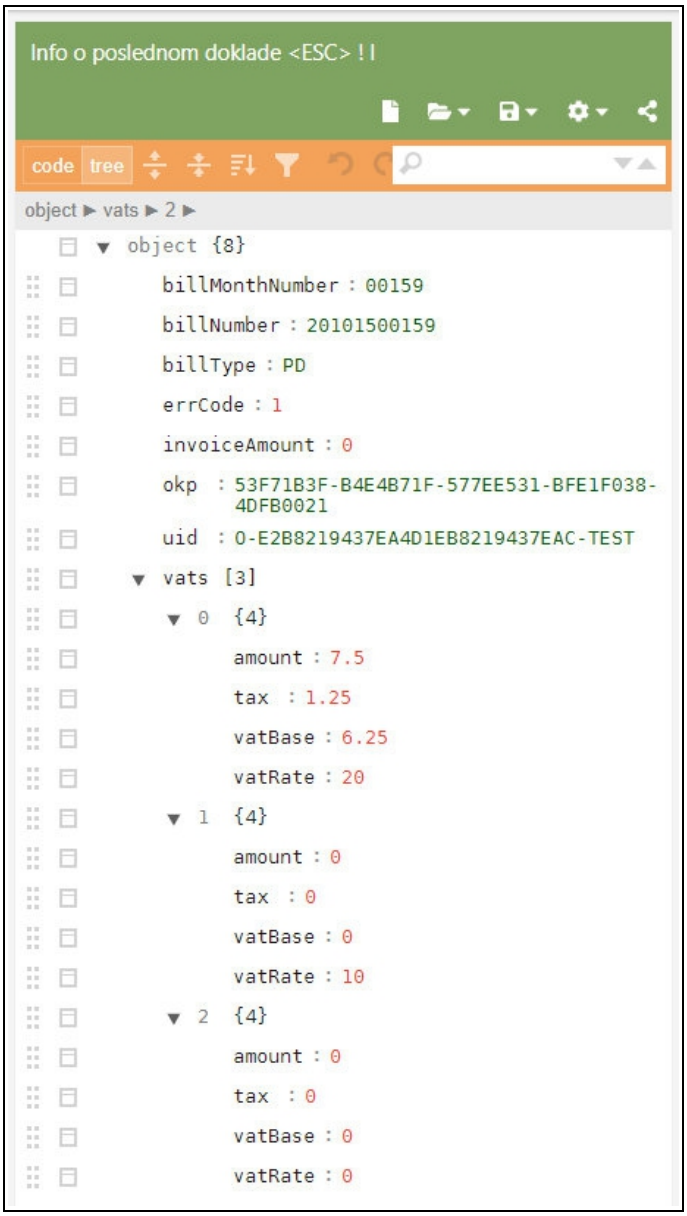
Display retrieved status information about printer in JSON browser.

name	- real status of the printer
printerBusy	- the printer is busy
readTimeout	- status read error
drawerPin	- socket switch status
online	- Online printer status
waitForRec	- waiting for repair
paperFeed	- paper feed
coverOpen	- open printer cover
paperFeed	- paper feed
paperEnd	- end of paper
error	- printer error
recoverable	- removable error
autocutter	- cutter error
unrecoverable	- irremovable error
autorecoverable	- removable error
paperNearEnd	- near end of the paper
paperError	- error

3.3 Retrieval of information about the recent document - ESC ! I >>>>

CLICK to open retrieved Info about the resent document INFO in JSON format

View the retrieved status of the document in the JSON browser.



- document serial number within a month
- unique document number YYMMDDccccc
- document type PD,UF,VY,VK,PPD,PUF,OD,GPS *1
- document processing error number * 2
- the amount of the invoice payment
- entrepreneur verification code * 3
- unique document identifier * 4

Turnovers in individual tax levels

- turnover in the VAT level 1
- tax in the VAT level 1
- base in the VAT level 1
- rate in the VAT level 1

- turnover in the VAT level 2
- tax in the VAT level 2
- base in the VAT level 2
- rate in the VAT level 2

- turnover without VAT
- tax in the VAT level 3
- base in the level 3
- rate in the level 3

NOTES:

*1 Variable billType indicates document type PD - cash receipt, UF - invoice payment, VY - withdrawal, VK - deposit, PPD - cash register document, PUF - invoice payment receipt, OD - recent document, GPS - location eKasa.

*2 Variable errCode returns an error code when processing the document, see. ERROR MESSAGE - DOCUMENT STATUS

* 3 Variable okp returns:
- **OKP** verification code of the entrepreneur for documents PD, UF, VY, VK, PPD, PUF
- text **NONE** with OD recent document and GPS position or incorrect document.

* 4 Variable uid returns:
- **UID** unique document identifier with ON-LINE documents,
- text **OFFLINE** with OFF-LINE documents,
- text **GPS** with GPS position,
- text **NONE** with OD recent document and incorrect document.

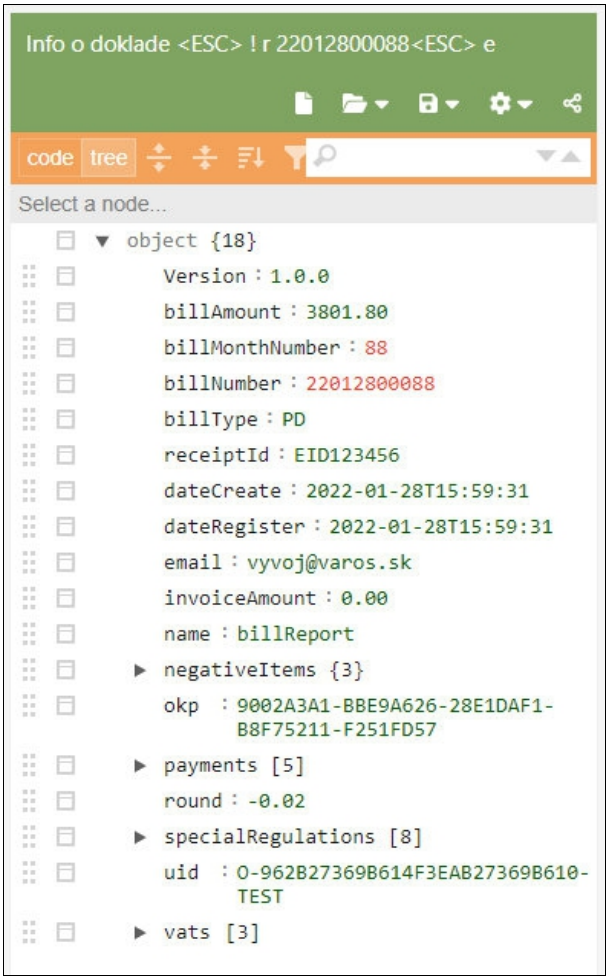
Retrieval of document information <ESC>!r YYMMDDccccc <ESC>e >>>>

Retrieval of document information <ESC>!n receiptId <ESC>e

CLICK to open the retrieved Document Information TURNOVERS in JSON format

The <ESC>!r and<ESC>!n commands return the same information about the selected document.
The **<ESC>!r** command searches for information about the document by the number printed on the document. YYMMDDccccc – document number assigned by eKasa client programme.
The **<ESC>!n** command searches for information about the document according to the receiptId identifier which is sent in the footer of the document by the sales application. If multiple receipts contain the same receiptId, the command returns information about the most recent receipt.

Document status display <ESC>!rYYMMDDccccc<ESC>e or <ESC>!nreceiptID<ESC>e in JSON browser.



The sequence returns detailed information about the document. Information can only be obtained on documents that are sent to the financial administration server – they have an assigned document number. Only the values of those variables whose turnover is different from zero are displayed.

- JSON format version
- the total price of the cash receipt with rounding
- receipt serial number within a month
- unique document number YYMMDDccccc
- document type PD,UF,VY,VK,PPD,PUF *1
- document identifier from the parent application *4
- date of the creation of the document
- date of registration of the receipt on the FS server
- buyer's email if the document is sent electronically
- total invoice payment price with rounding
- name of the JSON file – overview of the receipt

1. Turnovers for each type of negative items
- entrepreneur´s verification code *2

2. Turnover in individual currencies
- value of rounding of the currency Cash

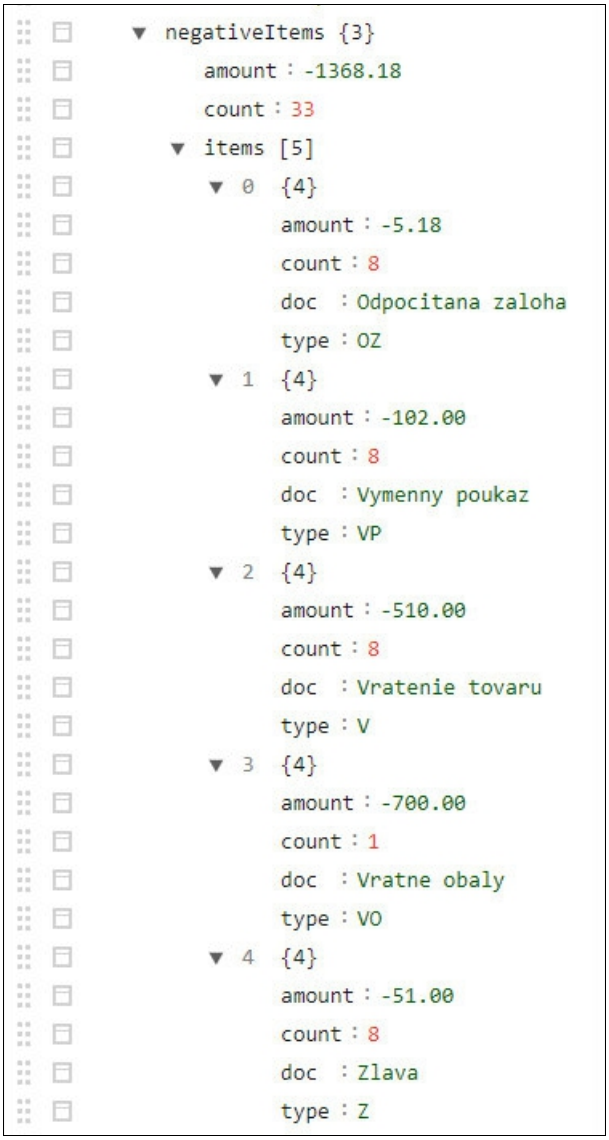
3. Turnovers in the zero VAT rate by individual types
- unique identifier of the document *3

4. Turnovers at individual VAT rates

NOTES:
*1 Variable billType indicates document type **PD** – cah register document, **UF** – the payment of invoice, **VY** – withdrawal, **VK** - deposit, **PPD** – cash receipt slip, **PUF** – invoice payment receipt
*2 Variable okp returns **OKP** - verification code of the entrepreneur for documents
*3 Variable uid returns :
- **UID** unique document identifier for ON-LINE documents
- text **OFFLINE** for OFFLINE documents
*4 If the document does not contain a receiptId variable, the unique billNumber is returned in the variable.

When communicating with the print manager, the requested information is returned to the **Fm_sts.bin** file.

1. Turnover for each type of negative items



Only the turnover that is different from zero is displayed.

- total negative turnover
- the number of negative items

Turnover in individual negative items

- negative turnover in the deducted advance
- number of items deducted from advances
- the name of the negative item
- negative item type **OZ** – deducted advance

- negative turnover in returnable packaging
- number of items of returnable packaging
- the name of the negative item
- negative item type **VO** – returnable packaging

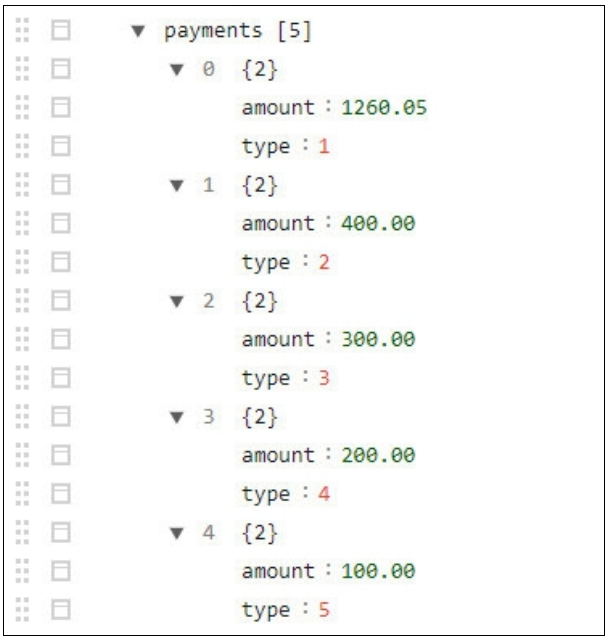
- negative turnover when returned goods
- the number of items with returned goods
- the name of the negative item
- negative item type **V** – return of goods

- negative turnover exchange voucher
- the number of exchange voucher items
- the name of the negative item
- negative item type **VP** – exchange voucher

- negative turnover discount granted
- the number of items of granted discounts
- name of the negative item
- negative item type **Z** – discount granted

2. Turnover in individual currencies

Only currency in which the turnover is different from zero is displayed. Printers support 8 types of currencies. Currency number 1 is defined for Cash.



Turnover in currency 1
- total turnover in the currency
- type of currency – Cash

Turnover in currency 2
- total turnover in the currency
- type of currency – Payment card

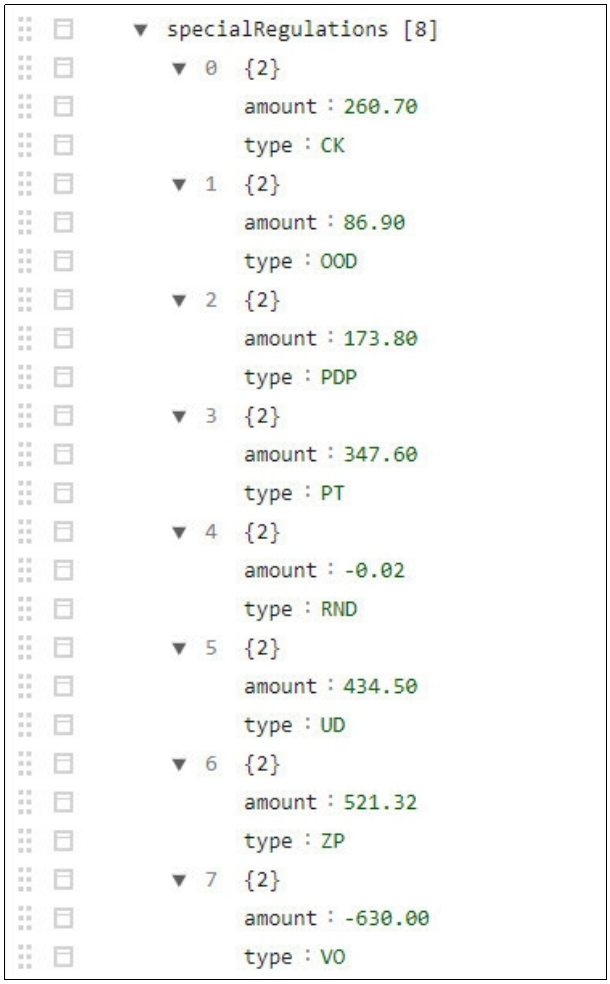
Turnover in currency 3
- total turnover in the currency
- type of currency – Currency 3

Turnover in currency 4
- total turnover in the currency
- type of currency – Currency 3

Turnover in currency 5
- total turnover in the currency
- type of currency – Currency 5

3. Turnovers in the zero VAT rate by individual types

Only types in which the turnover is different from zero are displayed.



Total turnover for goods and services not subject to VAT

- amount of turnover
- type **CK** – travel agencies

- amount of turnover
- type **OOD** – tax free

- amount of turnover
- type **PDP** – transfer of tax liability

- amount of turnover
- type **PT** – used goods

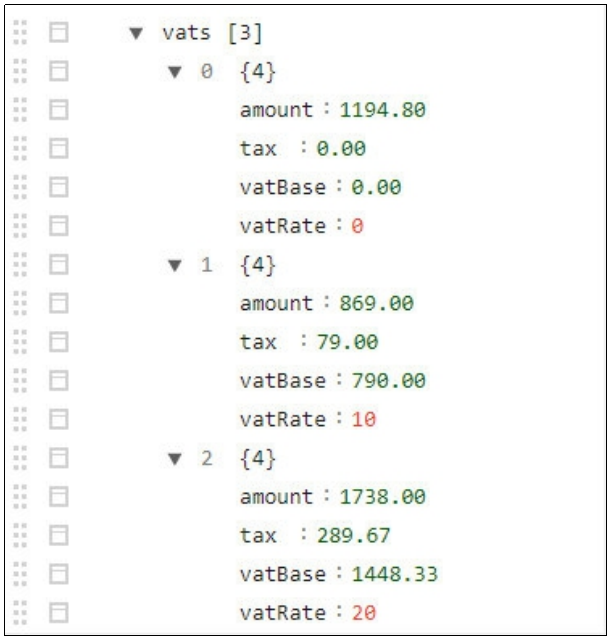
- the amount of rounding of the currency Cash
- type **RND** – total rounding of Cash

- amount of turnover
- type **UD** – works of art

- amount of turnover
- type **ZPS** – collectors' items and antiques

- amount of turnover
- type **VO** – returnable packaging

4. Turnover at individual VAT rates



Only types in which the turnover is different from zero are displayed.

- turnover
- tax
- tax base
- tax rate 0%

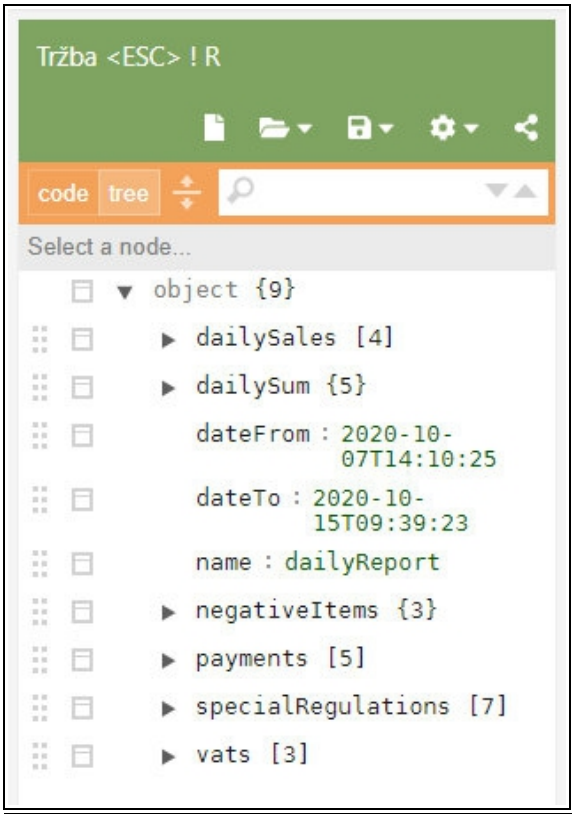
- turnover
- tax
- tax base
- tax rate 10%

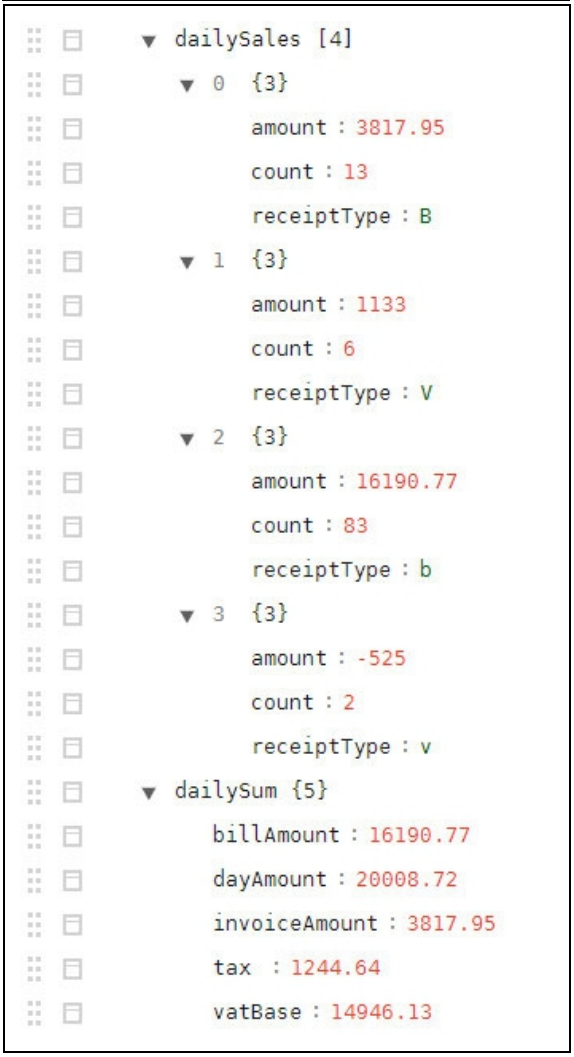
- turnover
- tax
- tax base
- tax rate 20%

3.4 Retrieval of report on open daily closing sales - ESC! R >>>>

CLICK to open the retrieved Info - Daily sales report [TURNOVER in JSON format]

Display of the retrieved revenue status in the JSON browser.





The sequence returns the turnover values since the recent closing date
so-called "Open closing turnover".
Only the values of those variables whose turnover is different from zero are displayed.

- cumulated turnover in individual types of documents
  - cumulated data since last deadline
  - date of first document
  - date of last document
- turnovers of negative items
- turnover in individual currencies
- turnovers in the 0 VAT rate according to individual types
- turnover in individual VAT rates

Cumulated turnover in individual document types.

Only turnover that is different from zero is displayed.

- cumulated invoice payment turnover
- number of invoice payments
- document type **B** - invoice payment

- cumulated turnover of deposit
- number of deposits
- document type **V** - deposit

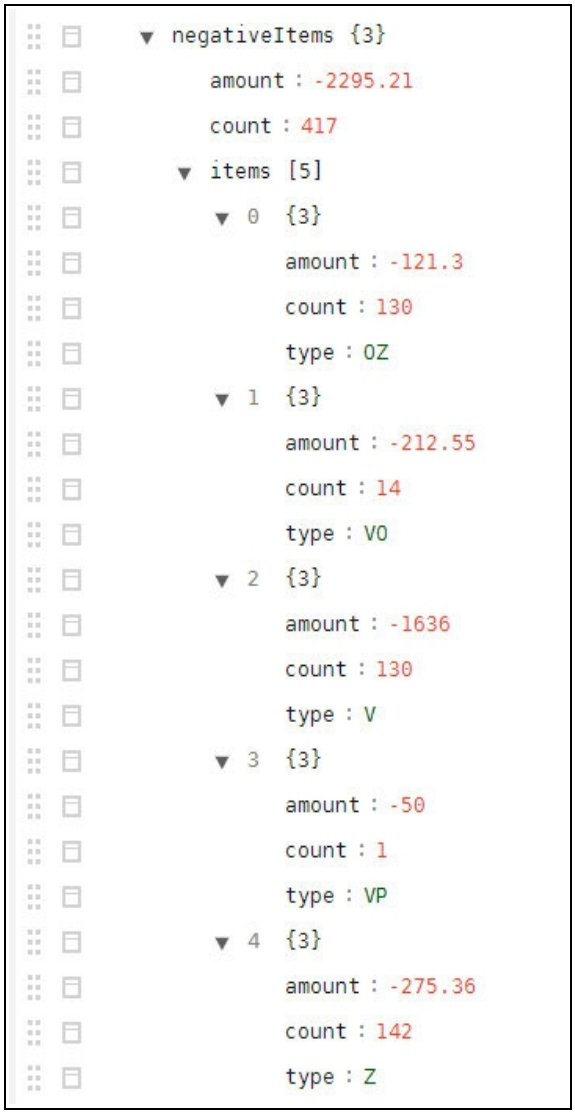
- cumulated turnover of cash receipt
- number of documents
- document type **b** - cash receipt

- cumulated turnover of withdrawals
- number of withdrawals
- document type **v** - withdrawal

Cumulated data since last closing date.

- revenues from cash receipts
- total revenue
- revenue from the payment of invoices
- total VAT / VAT1 + VAT2 /
- total VAT base

Negative turnovers for individual types of negative items.



Only turnover that is different from zero is displayed.
- total negative turnover
- number of negative items

Turnover in individual types of negative items

- negative turnover in the deducted advance
- number of items of deducted advances
- negative item type **OZ** - deducted deposit

- negative turnover of returnable packaging
- number of returnable packaging items
- negative item type **VO** - returnable packaging

- negative turnover when returned goods
- number of items with returned goods
- negative item type **V** - return of goods

- negative turnover exchange voucher
- number of exchange voucher items
- negative item type **VP** - exchange voucher

- negative turnover granted discount
- number of items of discounts granted
- negative item type **Z** - discount provided

Turnover in individual currencies.

Only currencies with a nonzero turnover are displayed.

Turnover in currency 1
- total turnover in a currency
- type of currency - Currency 1

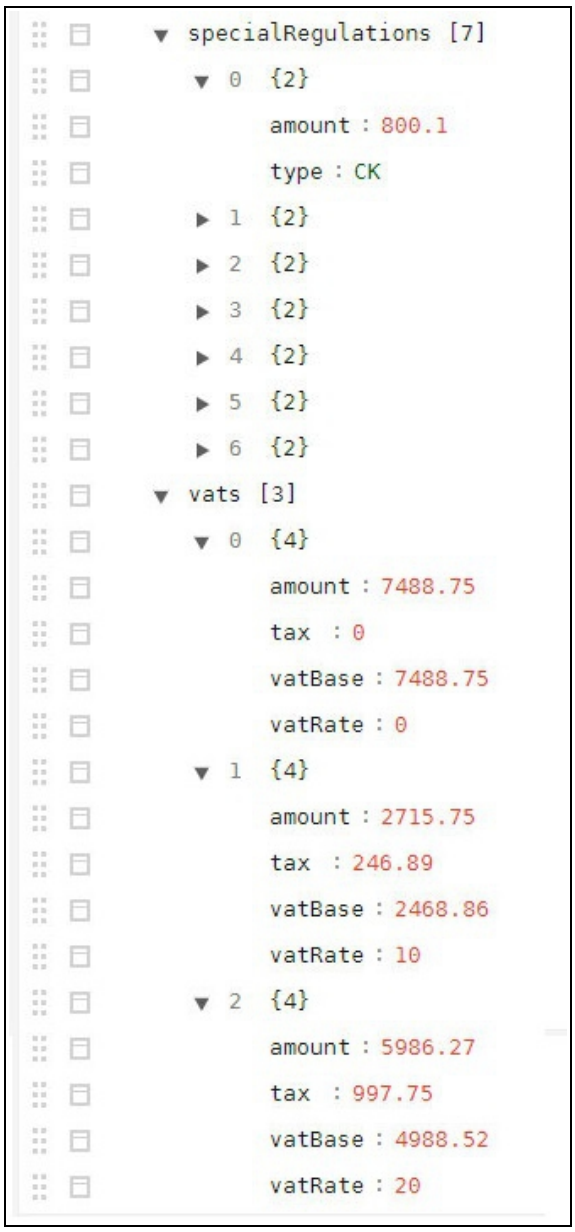
Turnover in currency 2
- total turnover in a currency
- type of currency - Currency 2

Turnover in currency 3

Turnover in currency 4

Turnover in currency 5

Turnover at the rate without VAT according to individual types.



Only types in which the turnover is different from zero are displayed.

Turnover for the type of travel agency

type **CK** - travel agencies

type **OOD -** tax free

type **PDP** - transfer of tax liability

type **PT** - used goods

type **UD** - works of art

type **ZPS** – collectors' items and antiques

Turnover in individual VAT rates.

Only types in which the turnover is different from zero are displayed.

- turnover
- tax
- Tax base
- tax rate / turnover without VAT /

- turnover
- tax
- Tax base
- tax rate / reduced VAT rate /

- turnover
- tax
- Tax base
- tax rate / increased VAT rate /

4. Creating a cash register document >>>>

Types of Documents. (PD, ND, UF, VY, VK, PPD, PUF, OD, GPS)

PD - cash register document
ND - invalid document - cash register document printed in printer test mode
- other types of documents cannot be printed as ND in test mode
UF - payment of invoice
VY - withdrawal
VK - deposit
PPD - cash receipt slip
PUF - invoice payment receipt
OD - other document
GPS - location of portable eKasa

Document item types. (K, VO, V, O, Z, OZ, VP)

Applies only to PD and PPD.

K - positive item
V - returned item
Z - discount
VP - exchange of voucher
VO - returned packaging
O - correction item
OZ - deducted deposit

Rectifying item may acquire positive or negative values of the price. It refers to a correction of an incorrectly registered item in the eKasa system. Rectifying item corrects - correction of the original item of the document in the positive as well as negative direction. It is necessary to enter UID - original document number to which the current correction applies.

The document in JSON format is sent to the printer as follows **Prefix JSON document format + Sufix**
Prefix - character **<ESC>**
Suffix - characters **<ESC>e**
Syntax **-<ESC>JSON document format<ESC>e**

***** Documents must be formatted in universal Unicode UTF-8 encoding *****

Example:

<ESC>

JSON document format: Payment of invoice.

```
{
    "ReceiptFormat": "VAROS_JSON",
     "Version": "1.0.0",
     "ReceiptType": "UF",
     "AddHeader":
                    "Doklad typu úhrada faktúry",
                    "========================================"
                  ],
     "InvoiceNumber": "18100001",
     "Amount": "1000.00",
     "Payment":
                    {
                      "PaymentIdx": 1,
                      "PaymentAmount": "1000.00"
                    }
                ],
     "Customer": {
                    "CustomerIdType": 2,
                    "CustomerId": "2020123456789"
                  }
```

<ESC>e

5. Sample documents in JSON format >>>>

For better readability of the document, copy the sample document to the JSON browser.
To display correctly in the JSON browser, it is necessary to remove prefix from the input file **<ESC>** so as suffix **<ESC>e** .

CLICK to open the application **JSON browser**

Click on the link to preview the document		
Document type	**Document format / input file /**	**Printout / preview jpg /**
Positive cash register document (PD) with multiline item name barcode	REQUEST	RESPOND
Correction cash register document (PD)	REQUEST	RESPOND
Positive cash receipt (PD) with several items	REQUEST	RESPOND
Positive cash receipt (PD) with several items sent by email	REQUEST	RESPOND
Positive cash receipt (PD) with the identification of two sellers on the behalf of who the goods were sold	REQUEST	RESPOND
Positive cash register document (PD) with the transfer of tax liability	REQUEST	RESPOND
Cash receipt (PD) the return of goods or services	REQUEST	RESPOND
Positive cash receipt (PD) with a discount	REQUEST	RESPOND
Cash receipt (PD) with deduction of advance payment	REQUEST	RESPOND
Cash receipt (PD) with exchange voucher	REQUEST	RESPOND
Cash receipt (PD) with rounding RND UP	REQUEST	RESPOND
Cash receipt (PD) with rounding RND DOWN	REQUEST	RESPOND
Negative cash receipt (PD) - redeemable returnable containers	REQUEST	RESPOND
Cash receipt (PD) - supported printer barcodes	REQUEST	RESPOND
Cash receipt (PD) with all positive items	REQUEST	RESPOND
Cash receipt (PD) with all rectifying items	REQUEST	RESPOND
Invoice payment (UF)	REQUEST	RESPOND

Invoice payment (UF) with rounding RND UP	REQUEST	RESPOND
Úhrada faktúry (UF) with rounding RND DOWN	REQUEST	RESPOND
Withdrawal (VY)	REQUEST	RESPOND
Deposit (VK)	REQUEST	RESPOND
Cash register document (PPD) Additional registration of a manually written document in case of failure.	REQUEST	
Invoice payment receipt (PUF)Additional registration of a manually written document in case of failure.	REQUEST	
Other document (OD) - Order	REQUEST	RESPOND
Other document (OD) - Use of formatting ^ commands	REQUEST	RESPOND
Other Document (OD) - Barcode printing support test	REQUEST	RESPOND
Position registration (GPS) - the specification of X, Y GPS coordinates	REQUEST	
Position registration (GPS) - Enter the address of eKasa location	REQUEST	
Position registration (GPS) - Another information specifying the location of the eKasa	REQUEST	
All sample JSON files with description	REQUEST	

6. ERROR MESSAGE >>>>

RETURN VALUES OF THE DOCUMENT

Error code	Note: Errors number -2 to -132 are return errors directly from the eKasa server.
1	ON-line or OFF-line cash receipt.
-2	Bad input values.
-8	This version of the integration interface is no longer supported.
-10	Error signing data message.
-12	Incorrect certificate format.
-13	The certificate used is not valid.
-100	Invalid PKP value.
-101	Tax identification number in the data message does not match the tax identification number in the certificate.
-102	The ORP code in the data message does not match the ORP code in the certificate.
-103	The date and time of issue of the document is later than the date and time of processing.
-104	The date and time the document was created is later than the processing date and time.
-105	The date and time the document was created is earlier than the processing date and time.
-106	The date and time the document was issued is earlier than the date and time the system was started.
-107	The date and time the document was created is earlier than the date and time system was started.
-108	The date and time the location data was created is later than the processing date and time.
-109	The date and time the location data was created is earlier than the processing date and time.
-110	The date and time the location data was created is earlier than the system start date and time.
-111	Invalid OKP value.
-112	The invoice number must be filled in for the document type: Invoice payment.
-113	The VAT breakdown may not be filled in for the document type: Invoice payment, Deposit, Withdrawal.
-114	Document type: Invoice payment, Deposit, Withdrawal must not contain items.
-115	Invoice number must not be filled in for the document type: Cash receipt, Invalid receipt, Deposit, Withdrawal.
-116	Document type: Cash receipt, Invalid receipt must contain items.
-117	For item type: Returned, Correction the Reference number of the document to which the return, the correction relates must be filled in.
-118	For item type: Positive, Returned packaging, Discount, Deducted deposit, Voucher exchange must not be filled in Document reference number.
-119	The VAT breakdown must be filled in for the type of document: Cash receipt, Invalid receipt.
-120	The amount of the base rate tax and the Base of basic tax rate must be filled both or none.
-121	The amount of the reduced rate and the Base of the reduced tax rate must be filled in both or none.
-122	Buyer´s ID and Buyer´s ID Type must be filled in both or none.
-123	Buyer´s ID and Buyer´s ID Type must not be filled in for document type: Invalid document, Deposit, Withdrawal.
-124	The receipt number is mandatory in case of registration of the receipt.
-125	The receipt number can only be filled in if the receipt is registered.
-126	The receipt cannot be registered for the document type: Invalid document, Deposit, Withdrawal.
-127	Item Type: A positive one must not have a negative price.
-128	Item Type: Returned packaging, Returned, Discount, Deducted deposit,

	Voucher exchange must not have a positive price.
-129	Seller´s ID and Seller´s ID Type must be filled in both or none.
-130	For tax assignment: 20, 10 Verbal information must not be filled in.
-131	For item type: Positive, Returned packaging, Returned, Discount, Deducted advance must not be filled in. Number of single-purpose voucher.
-132	Incorrect time zone.
-499	Refusal for security reasons, it is necessary to contact support
-500	The final amount does not fit. (Po <ESC>k).
-501	Incorrect value in quantity.
-502	Incorrect value in unit price.
-503	Incorrect price sign in line.
-504	Unauthorized document in TEST mode
-505	Incorrect cancellation document type. (A - return, B - discount, C - deducted advance, D - exchange voucher)
-507	Wsdl schema validation error
-508	Duplicate item
-509	Customer listed more than once
-510	printer error
-512	Voucher exchange must be filled in Single-purpose voucher number.
-513	For a document containing an Exchange Voucher, the amount of the document must be 0 EUR.
-514	When using a deposit for goods, the sum in the tax level must not be negative
-550	ESCK is missing in the receipt Incomplete line
-551	Incomplete line
-552	Exceeded number of allowed free print characters
-553	Unauthorized control characters
-554	CHDU error
-555	Error in system time
-556	Interrupted by the user after the notification of a leap in the date
-557	Unauthorized SwId.
-999	Unknown error
-1000	

7. Auxiliary functions for communication with FT5000 >>>>

All functions are described in detail in the basic Programmer´s Manual.

CLICK to open basic manual **Programmers Manual**

Sequences used to print and retrieve copies of documents and to print overview closing report		
<ESC> C *unique number* ***<CR><ESC>e***	1B 43 document number 0D 1B 65	**Printing a copy of the document** according to the unique number of the document A unique number always has 11 characters: **YYMMDDccccc** **YYMMDD-** document date **ccccc**- cash receipt number Example: 19101500001 document number 00001 from 15.10.2019
<ESC> q *unique number* ***<CR><ESC>e***	1B 71 document number 0D 1B 65	**Retreival of a cash receipt** according to the unique number of the document. A unique number always has 11 characters: **YYMMDDccccc** **YYMMDD-** document date **ccccc**- cash receipt number Example: 20071500245 document number 00245 from 15.07.2020)
<ESC>c<ESC>e	1B 63 1B 65	**Printing a copy of the recent document**
<ESC>Q <ESC>e	1B 51 1B 65	**Retrieval the recent document** to the computer
<ESC>U *the unique number* ***<CR><ESC>e***	1B 55 document number 0D 1B 65	**Retrieval of the UID document** under a unique document number A unique number always has 11 characters: **YYMMDDccccc** **YYMMDD-** document date **ccccc**- cash receipt number
<ESC>x<ESC>e ***<ESC>d<ESC>e*** ***<ESC>m<ESC>e***	1B 78 1B 65 1B 64 1B 65 1B 64 1B 65	**Print Continuous Closing** **Print Daily Closing** **Print Monthly Closing**
<ESC>XD "DATUM1"<CR> "DATUM2"<CR> <ESC>e	1B 58 44 DATUM1 0D DATUM2 0D 1B 65	**Print the overview closing** according to the selected date range from DATUM1 to DATUM2 inclusive. The date is in the form **YYYYMMDD** **YYYY**-year **MM**-month **DD**-day
<ESC>XS "DOKLAD1"<CR> "DOKLAD2"<CR> <ESC>e	1B 58 53 DOKLAD1 0D DOKLAD2 0D 1B 65	**Print the overview closing** according to the selected range of documents from DOKLAD1 to DOKLAD2 inclusive. The document is listed as **YYMMDDccccc** **YY**-year **MM**-month **DD**-day **ccccc**- document sequence number for that month.

Sequences used for auxiliary functions.		
<ESC>i	1B 69	**Retrieving eKasa identification**
<ESC>I<ESC>e	1B 49 1B 65	**Identification of an information file**
<ESC>g<ESC>e	1B 67 1B 65	**Retrieving LOG file** - supported FT5000
<ESC>L<ESC>e	1B 4C 1B 65	**Print LOG file** - supported FT5000
<ESC>o<ESC>e	1B 6F 1B 65	**Opening the cash drawer**

<ESC>F<ESC>e	1B 46 1B 65	**Send a short control sequence to printer**
<ESC>S<ESC>e	1B 53 1B 65	**Sending OFF-line Documents to FS**

Sequences for retreiving eKasa status The completed terminating sequence <ESC>e is mandatory for the selected sequences.		
<ESC>DC1	1B 11	**Retrieval ON_line printer status.**
<ESC>DC2	1B 12	**Retrieving indicator of the document in progress.**
<ESC>!h<ESC>e	1B 21 68 1B 65	**Retrieval of customer´s header**
<ESC>!D<ESC>e	1B 21 44 1B 65	**DKP retrieval Customer´s DKP retrieval**
<ESC>!d<ESC>e	1B 21 64 1B 65	**Retrieval of current tax levels -** 7 levels VAT1, VAT2, VATFREE, VAT1OLD, VAT2OLD, VAT3, VAT3OLD
<ESC>!v<ESC>e	1B 21 76 1B 65	**Retrieving internal firmware version PPEKK**
<ESC>!T<ESC>e	1B 21 54 1B 65	**Retrieving indicator of test mode**
<ESC>!c<ESC>e	1B 21 63 1B 65	**Retrieval of Certificate Validation**
<ESC>!O<ESC>e	1B 21 4F 1B 65	**Retrieving the number of offline documents**

Configuration Sequences <ESC>+		
<ESC>+T 0 <ESC>e	1B 2B 54 30 1B 65	**Setting a sharp mode**
<ESC>+T 1 <ESC>e	1B 2B 54 31 1B 65	**Setting a test mode**
<ESC>+d ***VAT1<CR>*** ***VAT2<CR>*** ***VATFREE<CR>*** ***VAT1OLD<CR>*** ***VAT2OLD<CR>*** ***VAT3<CR>*** ***VAT3OLD<CR>*** ***<ESC>e***	1B 2B 54 64 VAT1 0D VAT2 0D VATFREE 0D VAT1OLD 0D VAT2OLD 0D VAT3 0D VAT3OLD 0D 1B 65	**Setting VAT (DPH) Rates** VAT1 - higher tax rate 23% VAT2 - lower tax rate 19% VATFREE - exempt from tax VAT1OLD - original higher tax rate 20% VAT2OLD - original lower tax rate 10% VAT3 - lower tax rate 5% VAT3OLD - original lower tax rate 0%

Function:	**Reading out the identification eFT4000, eFT5000 and a firmware version.**
Command:	**<ESC>i**
Format:	**<0x1B><0x69>**
Description:	After sending the given sequence, the eFT4000 or eFT5000 return the identification information - ORP name and firmware version /2Byte/. The module communicates with the computer via serial or USB interface with HW data. The module communicates with flow control.
Example:	If after the command <ESC>i is sent, the fiscal printer will return the identification string: FM500010, it means that the printer is FT5000 type FT400020, it means that the printer is FT4000 type
Note:	The fiscal printer communicates with any terminal set to the communication parameters of a port.

EXAMPLES of individual commands					
No.	*<ESC> sequences*	*Request to printer:*	*Answer from the printer:*	*False - return value:*	*Printout*
1	**<ESC>C...<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
2	**<ESC>q...<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
3	**<ESC>c<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
4	**<ESC>Q<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
5	**<ESC>U.....<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
6	**<ESC>x<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
7	**<ESC>d<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
8	**<ESC>m<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
9	**<ESC>XD...<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
10	**<ESC>XS...<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
11	**<ESC>i**	CLICK to REQUEST	CLICK to RESPOND		NO
12	**<ESC>I<ESC>e**	CLICK to REQUEST	CLICK to RESPOND		NO
13	**<ESC>g<ESC>e**	CLICK to REQUEST	CLICK to RESPOND		NO
14	**<ESC>L<ESC>e**	CLICK to REQUEST	ACK	NAK	YES
15	**<ESC>o<ESC>e**	CLICK to REQUEST			NO
16	**<ESC>F...<ESC>e**	CLICK to REQUEST			YES
17	**<ESC>S<ESC>e**	CLICK to REQUEST	ACK	NAK	NO
18	**<ESC>G...<ESC>e**	CLICK to REQUEST			NO
19	**<ESC>+d...<ESC>e**	CLICK to REQUEST	ACK	NAK	NO
20	**<ESC>+T0<ESC>e**	CLICK to REQUEST	ACK	NAK	NO
21	**<ESC>+T1<ESC>e**	CLICK to REQUEST	ACK	NAK	NO
22	**<ESC>DC1**	CLICK to REQUEST	CLICK to RESPOND		NO
23	**<ESC>DC2**	CLICK to REQUEST	CLICK to RESPOND		NO
24	**<ESC>!h<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
25	**<ESC>!D<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
26	**<ESC>!d<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
27	**<ESC>!v<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
28	**<ESC>!T<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
29	**<ESC>!c<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
30	**<ESC>!O<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
31	**<ESC>!p<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
32	**<ESC>!s<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
33	**<ESC>!I<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
34	**<ESC>!r...<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
35	**<ESC>!n...<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO
36	**<ESC>!R...<ESC>e**	CLICK to REQUEST	CLICK to RESPOND	NAK	NO

8. Description of Changes Compared to the Previous Version >>>>

These changes will be integrated in the following versions of the eKASA client computer program PPEKK:

- For FT5000 printers – PPEKK FT5000-2.0.0 version
- For FT4000 printers – PPEKK FT5000WIN version – 2.1.0

1. A new type of RND variable is created for the rounding parameter, to which the parent application can send the height of the rounding. The rounding variable is at zero rate, and the sequences are as follows:

- Positive rounding - "ItemType": "RND", "Price": "positive value"
- Negative rounding - "ItemType": "RND", "Price": "negative value"

In the case of negative rounding, the UID of the original document is not indicated.

For a more detailed description, click on the following link:

Description of the control sequences of rounding

Click on the following link to view the sample receipt:

The receipt with the rounding of cash

The invoice with the rounding of cash

2. Extended response to command **<ESC>! I** - Information on the last receipt

Variables added:

- billAmount - calculation of the total value of the receipt with rounding
- round - calculation of the rounding value of the currency Cash
- RP - calculation of the value for returnable packaging

3. Extended response to command **<ESC> ! R** – Turnover at the cash register since the last daily closing.

- In the section:
- dailySales, a variable of the RND type has been added, in which the amount of rounding of the Cash as means of payment is calculated separately for cash receipts and invoice payments
- specialRegulations, a variable of the RND type has been added, in which the total amount of rounding of the Cash as means of payment is calculated.

Information about the amount of rounding

4. New order to obtain detailed information about the document **<ESC>! r** – retrieving detailed information about a specific document saved in the document database based on the receipt number.

New order to obtain detailed information about the document **<ESC> ! n** – retrieving detailed information about a specific document saved in the document database based on receiptID.

Document Information

5. New optional variable to assign a unique document identifier by sales applications.
The variable **^n receiptId ^k** must be unambiguous and can be used to indicate the documents sent from the sales application. Based on receiptId, the **ESC> ! n** command can retrieve detailed information about a specific receipt.

DESCRIPTION – ROUNDING OF CASH RND:
Only receipts which are paid by Cash shall be rounded. If a document is to be paid with multiple currencies, it must be rounded so that the currency Cash is rounded to the 5 cents. In the VAT itemization within the receipts, an RND line will be added showing the rounding value of currency Cash.
A new Currency marked Rounding: will be added which will reflect the total amount of the rounding of the Currency Cash in the overview closing. This currency will not be available for programmers.

For documents with an obligation to round, the printers FT5000 and FT4000 will check:

1. Whether there is a rounding variable within the receipt
   - if it is, then the rounding of the receipt is under the direction of the parent application
   - if it is not, rounding is automatically calculated on the basis of the currency cash.
2. The value of the rounding of currency Cash is checked if it is in the range of <-2 to 2> cents. If the amount of the receipt is up to 5 cents, the value of the currancy Cash can be in the range of <-4 to 4> cents.
3. The final amount of the receipt shall be checked against the amount of the items of the receipt. A difference of <-2 to 2> cents is allowed.
   If the amount of the receipt is up to 5 cents, a difference of amounts in the range of <-4 to 4> cents is allowed.
4. The total price of the receipt must include rounding.

Changes to printed documents and closing

- In the cash receipt with the obligation to round the cash, a line in the receipt will be added. with the calculation of a rounding value.
- A line will be added to the overview closjng with the calculation of the rounding value.
- Currency 1 is defined as Cash.
- A new Currency 9 marked as Rounding: will be added in which the amount of rounding will be cumulated. This currency will not be available for programmers.