PROTOCOL AND COMMANDS MANUAL FOR FISCAL PRINTERS "The Factory HKA"

INDICE

1. COMMUNICATION PROTOCOL OVERVIEW

1.1. Setup

The communication process is through the printer RS232 port as follows:

- The Host (PC) activate CTS signal

- The fiscal printer activate DTR signal as answer to indicate that it is possible to receive.

Parameters to configuration of Serial Port	
Data Transmission	Serial, Asynchrony
Baud Rate	9600 bps
Data Bits	8 bits
Parity	Even
Stop Bits	1

1.2. Handshaking and protocol frame

1.2.1. Control Characters

STX	02h
ENQ	05h
ETX	03h
EOT	04h
ACK	06h (Acknowledgement)
NAK	15h (No Acknowledgement)
ETB	17h
LRC	(XOR) from data beginning (not including STX) to ETX, (not including ETX).

✓ **Send ACK:** Indicates that following conditions are accomplished LRC and Data are right.

The command is acceptable in the current condition of the machine.

✓   **Send NAK:** Indicates that following conditions are accomplished

LRC is not right.

✓ **Frame description:**

OR Exclusivo

✓ **Examples:**

✓ Command S1:
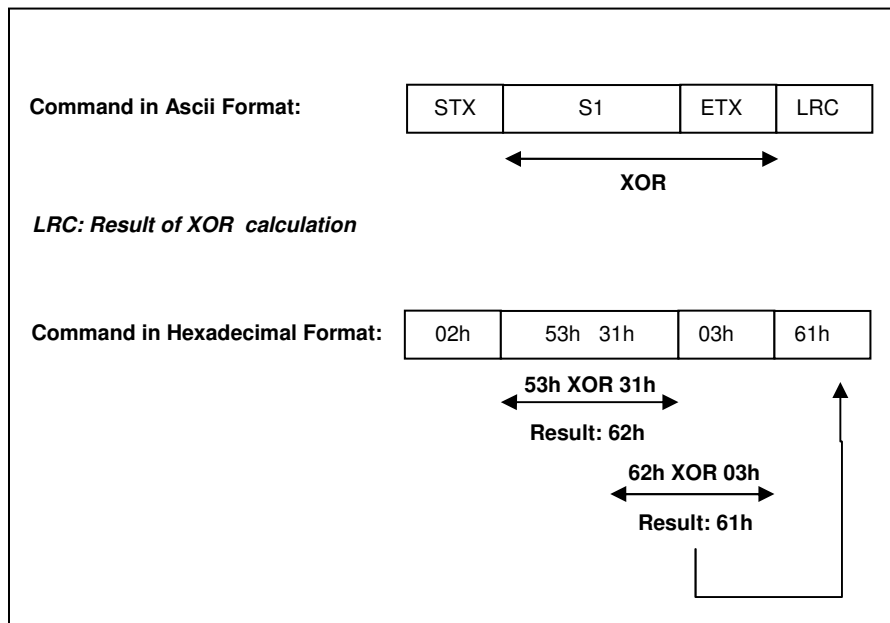
✓ Closure report command: "I0X"

Command in Ascii Format:

STX	I0X	ETX	LRC

XOR

LRC: Result of XOR calculation

Command in Hexadecimal Format:

02h	49h 30h 58h	03h	22h

49h XOR 30h

Result: 79h

79h XOR 58h

Result: 21h

21h XOR 03h

Result: 22h
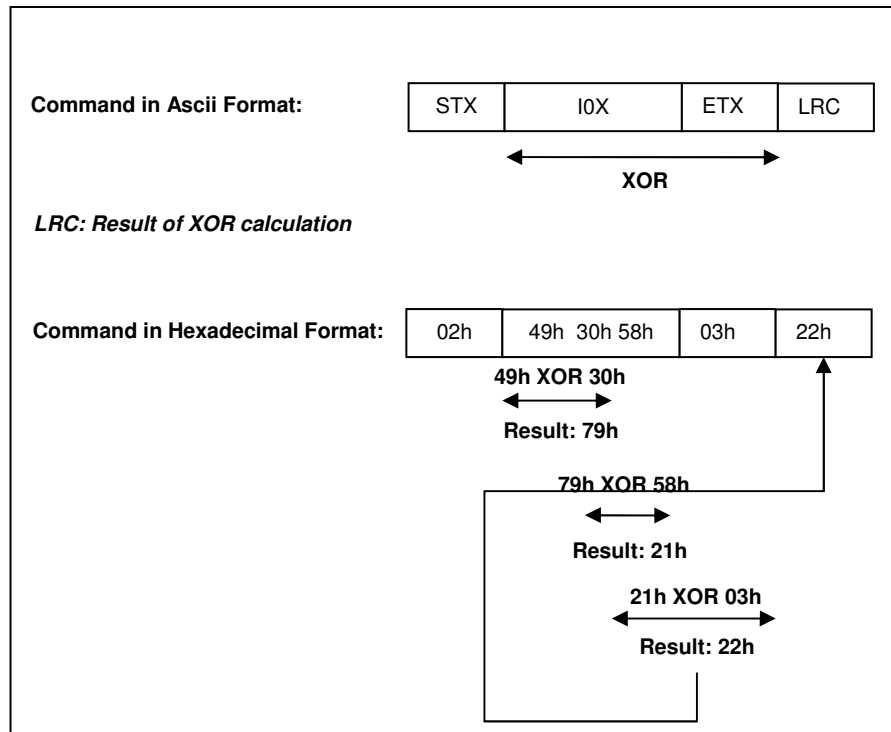
1.2.2. Sequence of Communication Commands

✓ *Status Read*

PC	→→→→→→→→→→→→→→→→ ←←←←←←←←←←←←←←←←	Fiscal Printer
ENQ		*STX-STATUS-ETX-LRC*

STATUS response has the following structure:

STX	STS1	STS2	ETX	LRC
1	2	3	4	5

STS1	0 1 x x x x x 1	In Fiscal Transaction
	0 1 x x x x 1 x	In Non Fiscal Transaction
	0 1 x x x 1 x x	Buffer Full
	0 1 x x 1 x x x	Memory Full
	0 1 x 1 x x x x	Fiscal Memory Near Full
	0 1 1 x x x x x	Fiscal Mode

For example STS1 value is:

0x61: The printer is in Fiscal Mode and Fiscal Transaction.

0x60: The printer is in Fiscal Mode.

0x42: The printer is in Non Fiscal Transaction.

0x44: The printer is Busy.

STS2	0 1 1 1 0 0 x x	Not Assigned Date
	0 1 1 0 1 1 x x	Fiscal Memory Full
	0 1 1 0 0 1 x x	Fiscal Memory Error
	0 1 1 0 0 0 x x	Fiscal Error
	0 1 0 1 1 1 x x	Invalid Command
	0 1 0 1 1 0 x x	Not Assigned Cashier
	0 1 0 1 0 1 x x	Invalid command tax
	0 1 0 1 0 0 x x	Invalid Value
	0 1 x x x x 1 x	Printer / Display Error
	0 1 x x x x x 1	Paper Error
	0 1 0 0 0 0 0 0	No Error

✓ **Single Command**

PC		Fiscal Printer
(Normal Execution "ACK") **STX-CMD-DATA-ETX-LRC**	→→→→→→→→→→→→	
	←←←←←←←←←←←←	**ACK**
(Execution with Error "NAK") **STX-CMD-DATA-ETX-LRC**	→→→→→→→→→→→→	**NAK** **(communication error)**
	←←←←←←←←←←←←	
(Busy printer "NAK") **STX-CMD-DATA-ETX-LRC**	→→→→→→→→→→→→	
	←←←←←←←←←←←←	**DTR off**

The return of a NAK indicates that the command was not valid.

In case a command is sent while the printer is busy, it doesn't return any value. This condition can be checked with DTR signal of the printer.

✓ **Read Command**

PC		Fiscal Printer
STX-CMD-DATA-ETX-LRC	→→→→→→→→→→→→	
	←←←←←←←←←←←←	**STX-CMD-DATA-ETX-LRC**
ACK	→→→→→→→→→→→→	

The ENQ or NAK answer must be send to the printer if a Communications error was detected in the host (PC).

✓ *Upload information command:*

PC		Fiscal Printer
STX-CMD1-DATA-ETX-LRC	→→→→→→→→→→→→→	
	←←←←←←←←←←←←←	*STX- DATA0-ETB-LCR*
ACK	→→→→→→→→→→→→→	
	←←←←←←←←←←←←←	*STX- DATAn-ETB-LCR*
ACK	→→→→→→→→→→→→→	
		EOT

1.2.3. COMMANDS DESCRIPTION

The fields in the command frame must have a specified length according of each command.

Command structure in direct protocol

Command structure using the DLL

| STX | DATA | ETX | LRC |
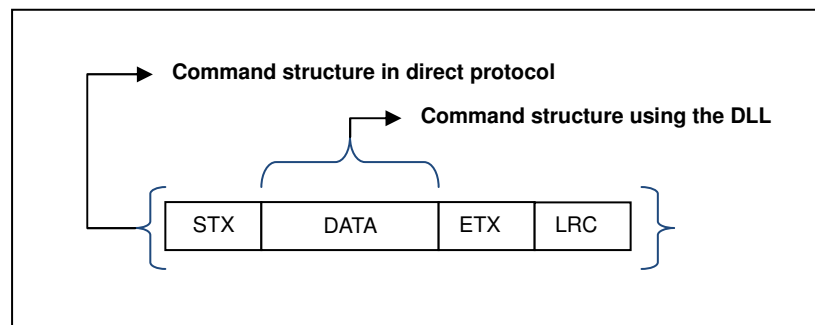
2. SOFTWARE INTEGRATION & ISSUANCE OF DOCUMENTS

The Factory HKA fiscal printers have an universal integration, it means that a software integration made for a printer would be functional with other fiscal printer models, this is because the fiscal printers are programmed to communicate with a standard proprietary protocol.

Some features of the printers may vary about (Printing check, Electronic Journal, Type of paper, and so on).

Fiscal printer can issue 11 different types of documents:

- Document with Fiscal Printer Parameters
- Invoice
- Credit Note
- Debit Note
- Non Fiscal Document
- X Report
- X2 Report
- Z Report (Daily Report)
- Z2 Report
- Fiscal Memory Report
- Reprint Documents (Only on fiscal printers with Electronic Journal)

The issue of the documents quoted before can be executed independently.

3. COMMANDS TO PROGRAMMING PRINTER PARAMETERS

Fiscal Printer use parameters to define its operation and behavior, some of this parameters can be modified without prerequisites but in other cases, are necessary some previous procedures.
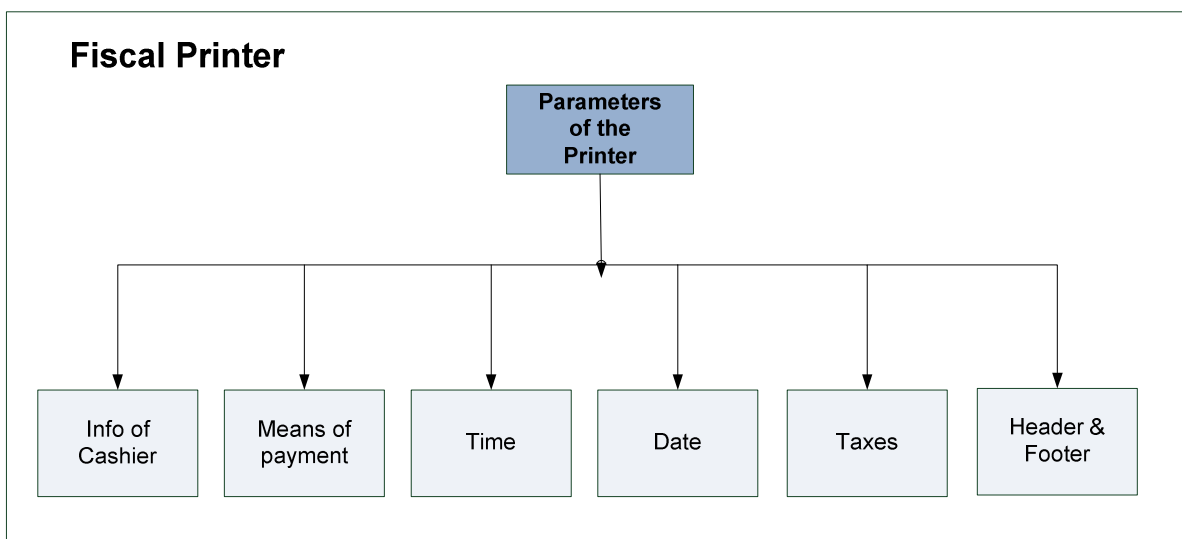
3.1. Cashier

This command allows defining the information related to a cashier. This command must be executed before use the command Start Cashier. The frequent use of this command can cause damage in the work memory therefore use it only when necessary.

Characters position in the command line	1	2	3	4	5	6 ~ 10	11 ~ 26	27	28
Structure of the Command	STX	'P'	'C'	CLK #		Password	Name of Cashier	ETX	LRC

Description	CLK# (ASCII)
Number of cashier	'00' – '31'
Description	**Secret code (ASCII)**
Cashier password	5 Digits
Description	**Name of Cashier (ASCII)**
Name of Cashier	16 Characters

3.2. Means of payment

This command allows defining the description for every mean of payment, for example: Cash, Credit card, etc. The printer supports maximum 16 means of payment.

Characters position in the command line	1	2	3	4	5	6 ~ 19	20	21
Structure of the Command	STX	'P'	'E'	# Mean		Mean of payment description	ETX	LRC

Description	Type (ASCII)
Mean of payment number	01 – 16
Description	**Name of mean of payment (ASCII)**
Mean of payment description	14 Characters

3.3. Time

This command is used for programming the printer time. This command only is allowed when sales has not been executed since last daily report (Z Report). This command has a daily report (Z Report) as prerequisite.

Characters position in the command line	1	2	3	4	5	6	7	8	9	10	11
Structure of the Command	STX	'P'	'F'	HH		MM		SS		ETX	LRC

3.4. Date

This command is used for programming the printer Date. This command only is allowed when sales has not been executed since last daily report (Z Report). Date cannot be set in a previous last Daily Report date. This command has a daily report (Z Report) as prerequisite.

Characters position in the command line	1	2	3	4	5	6	7	8	9	10	11
Structure of the Command	STX	'P'	'G'	DD		MM		YY		ETX	LRC

3.5. Tax Rates

This command has a daily report (Z Report) as prerequisite.

Characters position in the command line	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				Rate 1					Rate 2					Rate 3						
Structure of the Command	STX	'P'	'T'	Type	Value				Type	Value				Type	Value				ETX	LRC

Description	Type (ASCII)
Extern (item price = taxable base), Excluded Tax	0,1 (any of these)
Description	**Value (ASCII)**
The Value must be 2 integers and 2 fixed decimals	4 Digits

3.5.1. Registration Tax Rates in Fiscal Memory

This command is used to confirm proper registration of tax rates in RAM and to record this value on fiscal memory.

All the tax changes are registered at fiscal memory for safety reasons,

because of this, the command can only be executed 64 times as maximum.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'P'	't'	ETX	LRC

3.5.2. Header and footer

This command allows defining the messages showed in the header and footer of the documents.

Characters position in the command line	1	2	3	4	5	6 ~ 45	46	47
Structure of the Command	STX	'P'	'H'	LN		Message	ETX	LRC

Description	LN (ASCII)
Header	'01' – '08'
Footer	'91' – '98'
Description	**Message (ASCII)**
Text to show at Display (*See Note**)	40 Characters

Note: You can change header and footer right after issuing a daily report (Z report)

3.6. Flags

This command allows defining the value of the flags used in the machine.

Characters position in the command line	1	2	3	4	5	6	7	8	9
Structure of the Command	STX	'P'	'J'	Flag		Flag Value		ETX	LRC

Description	Flag(ASCII)
Number of flag to define	'00' – '50'

# Flag	Flag Value (ASCII)
0	00 = Do not print error messages, just show them in display 01 = Print error messages
1	Continuous printing: 00 = prints documents at the end of commands reception 01 = prints line to line
2	00 = Printer has cutter 01 = Manual cutting
4	00 = Small Font for text of PLU 01 = Large font for text of PLU
5	00 = Small font for text of PLU 01 = Large font for text of PLU
6	00 = Only subtotals are printed int reports 01 = Details for every rate are printed in reports
7	Price shown on display: 00 = without tax (taxable amount) 01 = with tax (includes ITBMS)
8	00 = Price of PLU are rounded (5/4 rounding) 01 = Price of PLU are not rounded
9	00 = Total amount of receipts are rounded (5/4 rounding) 01 = Total amount of receipts are not rounded
10	00 = in Z report, amounts of tax for every rate are not rounded 01 = In Z report, amounts of tax for every rate are rounded
11	00 = Maximum value per PLU 99 million 01 = Maximum value per PLU 99 thousand 02 = Maximum value per PLU 9 thousand 03 = Maximum value per PLU 999
12	00 = Maximum value per closure of receipt, per accumulated of rate 999 million 01 = Maximum value per closure of receipt, per accumulated of rate 9 million

	02 = Maximum value per closure of receipt, per accumulated of rate 999 thousand 03 = Maximum value per closure of receipt, per accumulated of rate 99 thousand
13	00 = Maximum value per Report, accumulated amounts, rates, credit notes and debit notes 999 millions 01 = Maximum value per Report, accumulated amounts, rates, credit notes and debit notes 9 millions 02 = Maximum value per Report, accumulated amounts, rates, credit notes and debit notes 999 thousand 03 = Maximum value per Report, accumulated amounts, rates, credit notes and debit notes 9 thousand
14	00 = The payment method which chargess the change (again) is the means 1 (cash) 01.. 16 = Assigns the number of the payment to which charge the change
15	00 = Amount of credit and debit notes are assigned according to the mean of payment used 01.. 16 = Assigns the number of the main of payment in which are charged amounts of credit notes and debit notes
16	00 = Amount of funds are added to the mean of payment used 01.. 16 = Assigns the number of the main of payment in which are charged amounts of funds
17	00 = Amount of withdraws are added to the mean of payment used 01.. 16 = Assigns the number of the main of payment in which are charged amounts of withdraws
18	00 = In display is shown "The Factory HKA" 01 = In display is shown commercial message settled by client
19	00 = Commercial message rotates in display 01 = Commercial message is shown static in display
20	Internal use
23	00 = After an electric failure, printer continues with a receipt if it is open 01 = After an electric failure, a receipt is annulated if it is open
24	00 = Open automatically the cash-drawer when a receipt is payed 01 = Doesn't open automatically the cash-drawer when a receipt is payed
25	00 = If the change is zero, is not shown at display 01 = Always shows the change at display
26	00 = Currency is " b/. " 01 = Currency is "$ "
27	Internal Use
28	00 = Doesn't show number of items in receipts 01 = Shows quantity of printed lines as PLU, without taking in count quantity 02 = Shows quantity of items as integers 03 = Shows quantity of items as decimals
29	00 = Restart the display for every transaction and shows amounts of PLU and discounts or surcharges 01 = Doesn't restart the display for every transaction and it shows amounts of PLU, discounts and surcharges 02 = Restart the display for every transaction and doesn't show amounts of PLU and discounts or surcharges 03 = Doesn't restart the display for every transaction and doesn't show amounts of PLU and discounts or surcharges
30	00 = Prints barcode without related number 01 = Prints the barcode with the related number below of the code
31	00 = S2 command returns values related to the actual sale 01 = S2 command returns values related to accumulated sales of the day (X)
32	Internal Use

33	00 = Doesn't print Z2 report after Z report 01 = Prints a Z2 report after a Z Report
34	00 = Doesn't print logo 01 = Prints the logo in all documents 02 = Prints logo only in DNF 03 = Prints logo only in receipts 04 = Prints the logo only in fiscal documents 05 = Prints logo in all documents, except Z reports and reports of fiscal memory
35	00 = RTS or CTS (del PC) → UART2_RTS = UART2_CTS | Com2.cRTS_out 01 = RTS always in ON 02 = UART2_RTS = Com2.cRTS_out;
36	Internal use
37	00 = Doesn't Ignore the near-end sensor (paper sensor) 01 = Ignores the near-end sensor (paper sensor)
38	Internal use
39	Internal use
40	Internal use
41	Internal use
42	Internal use
43	00 = Type of barcode is "EAN 13" (accept only 12 digits) 01 = Type of barcode is "ITF" (accept 1 to 32 digits) 02 = Type of barcode is "Code 128" (accept 1 to 32 characters)

Note**: The frequent use of this command can cause damage in the work memory therefore use it only when necessary.

4. COMMANDS TO THE ISSUANCE OF AN INVOICE

General diagram to the issuance of an invoice

```
                    ┌─────────────────────┐
                    │ Start of Cashier (*) │
                    │   Section 4.1.1      │
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐
                    │ Customer Info. (**)  │
                    │    Section 4.2       │
                    └──────────┬──────────┘
                               │
                    ┌──────────▼──────────┐◄───────────┐
                    │    Comment (**)      │            │
                    │    Section 4.3       │            │
                    └──────────┬──────────┘            │
                               │                        │
                    ┌──────────▼──────────┐            │
                    │ Product Registration │            │
                    │    Section 4.4       │            │
                    └──────────┬──────────┘            │
                               │                        │
                          ╱─────────╲      Yes          │
                         ╱ PLU Correction╲──────────►   │
                         ╲  Section 4.5  ╱              │
                          ╲─────────╱                   │
                               │ No                     │
                          ╱─────────╲      Yes          │
                         ╱  SubTotal   ╲──────────►     │
                         ╲ Section 4.6 ╱                │
                          ╲─────────╱                   │
                               │ No                     │
                          ╱─────────╲      Yes          │
                         ╱ Surcharge   ╲──────────►     │
                         ╲ – Discount  ╱                │
                         ╲ Section 4.7 ╱                │
                          ╲─────────╱                   │
                               │ No                     │
                          ╱─────────╲      Yes          │
                         ╱  Register   ╲──────────►     │
                         ╲  another    ╱                │
                         ╲    PLU      ╱                │
                          ╲─────────╱                   │
                               │ No                     │
                          ╱─────────╲      Yes          │
                         ╱ Void Item   ╲────────────────┘
                         ╲  Section    ╱
                         ╲   4.8.1     ╱
                          ╲─────────╱
                               │ No
                          ╱─────────╲      Yes   ┌────────────────┐
                         ╱ Void Invoice╲────────►│ Void of document│
                         ╲ Section 4.8.2╱        └────────────────┘
                          ╲─────────╱
                               │
  ┌──────────────┐   ┌──────────▼──────────┐
  │   Barcode    │──►│  Means of payment    │
  │ Section 4.10 │   │    Section 4.6       │
  └──────────────┘   └──────────┬──────────┘
                     ┌──────────▼──────────┐
                     │ End of cashier (*)   │
                     │   Section 4.1.2      │
                     └─────────────────────┘
```

Notes:

*These commands are used at the beginning of the workday or changing cashier. These commands are optional.

**These commands are optional.

4.1. Cashiers

4.1.1. Login of Cashier

This command allows certifying a cashier. This command cannot be used if the printer is in a transaction.

Characters position in the command line	1	2	3 ~ 7	8	9
Structure of the Command	STX	'5'	# Password	ETX	LRC

Description	# Password **(ASCII)**
Password of cashier (ASCII)	00000 - 99999

4.1.2. Logout of Cashier

This command reestablish cashier #1 as the active cashier. This command cannot be used if the printer is in a transaction. It is not necessary to execute this command in order to reassign a cashier.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'6'	ETX	LRC

4.2. Register of Customer

This command allows input RUC of the client

Characters position in the command line	1	2	3	4 ~ 25	45	46
Structure of the Command	STX	'j '	'R'	RUC	ETX	LRC

Description	Data (ASCII)
RUC	Maximum 20 characters

4.3. Social Reason of Customer

This command allows to input social reason of customer in a receipt, credit note or debit note.

Characters position in the command line	1	2	3	4 ~ 25	26	27
Structure of the Command	STX	'j '	'S'	sCmd	ETX	LRC

Description	Data (ASCII)
sCmd	40 characters fixed

4.4. Additional information of Customer

This command allows input additional lines of information of customer in a receipt, credit note or debit note.

Characters position in the command line	1	2	3	4 ~ 44	45	46
Structure of the Command	STX	' j '	SCmd0	Datos	ETX	LRC

Description	Data (ASCII)
sCmd0	Lines of additional information of client in
1 - 9	header → maximum of 40 characters

4.5. Comment

This command allows printing commercial messages, necessary for description of a product.

Characters position in the command line	1	2	3 ~ 22	23	24
Structure of the Command	STX	@	Message	ETX	LRC

Description	Message (ASCII)
Message on Invoice	20 Characters

```
Example:
|Coke                    B/. 1,50 |
|##On Sale##                    |←
```

4.6. Register of a Product

The register of a product can only be possible if the rate which is related is registered already.

It is possible to register until ($ ó B/.) 9999999.99 per transaction.

It is possible to register until ($ ó B/.) 9999999.99 per day.

Note: When limit amount is exceeded, the command to register a product is rejected.

If the maximum amount that the printer can accumulate is exceeded the printer reject all the sale commands, in this case it is necessary to issue a Z report to continue sales operations.

Characters position in the command line	1	2	3 ~ 12	13 ~ 20	21 ~ 137	138	139
Structure of the Command	STX	CMD	Price	Quantity	Description	ETX	LRC

Description	CMD (ASCII)
Tax Free Item (20h) / (32)	Space Character
Tax Rate 1 Item (21h) / (33)	!
Tax Rate 2 Item (22h) / (34)	"
Tax Rate 3 Item (23h) / (35)	#
Description	**Price (ASCII)**
The price: 8 Integers and 2 fixed Decimals	10 Digits
Description	**Quantity (ASCII)**
The quantity: 5 Integers and 3 fixed Decimals **(See Note*)**	8 Digits
Description	**Description (ASCII)**
Description of Product **(See Note**)**	116 Characters

Note*: Maximum value for quantity is **99999.999**

Note:** 116 characters for description in three lines (two lines with 40 characters and one line with 37 characters),

4.7. Product Correction

This command cancels the last input of an item or a discount.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'k'	ETX	LRC

```
|COKE                    B/. 1,50  |
|CORREC                            |←
|COKE                  - B/. 1,50  |
```

4.8. Subtotal

This command allows print or show in the display the subtotal amount of the sales. This command must be executed before doing a discount of the subtotal.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	CMD	ETX	LRC

Description	CMD (ASCII)
Printed Subtotal	'3'
Shows subtotal at Display	'4'

Printed Subtotal

```
|COKE                B/.  1.50  |
|HAMBURGUER          B/.  1.50  |
|SUBTOTAL            B/.  3.00  |
```

4.9. Discount

This command executes a discount over last item registered or over subtotal. To make a discount over subtotal, the command "Subtotal" must be executed previously, and the amount of discount applies proportionally over all the products. Discounts can be applied in two modes, by percentage or by amount.

• Percentage or surcharge discount:

Characters position in the command line	1	2	3	4 ~ 7	8	9
Structure of the Command	STX	CMD	Sign	Percentage	ETX	LRC

Description	CMD (ASCII)
Descriptor for discount or surcharge	p
Description	**Sign (ASCII)**
Discount	'-'
Description	**Percentage (ASCII)**
The Percentage: 2 Integers and 2 Decimals	4 Digits

Example of discount over subtotal:

```
Item tax 1                        Bs 1.50
Item tax 2                        Bs 3.50
---------------------------------------------------
SUBTOTAL                          Bs 5.00
Discount (10,00%)               - Bs 0.50
```

The discount must be calculated as follow:

```
Item tax 1            1.35  → (1.50*(100-10)/100)
Item tax 2            3.15  → (3.50*(100-10)/100)
```

- Discount by amount:

Characters position in the command line	1	2	3	4 ~ 12	13	14
Structure of the Command	STX	CMD	Sign	Quantity	ETX	LRC

Description	CMD (ASCII)
Descriptor for discount and surcharges	q
Description	**Sign (ASCII)**
Discount	'-'
Description	**Percentage (ASCII)**
Quantity: 7 Integers and 2 Decimals	9 Digits

4.10.   Invoice Cancellation

4.10.1.   Cancellation of an Item in the invoice

This command allows void a product previously registered in the invoice.

Characters position in the command line	1	2	3 ~ 12	13 ~ 20	21 ~ 137	138	139
Structure of the Command	STX	CMD	Price	Quantity	Description	ETX	LRC

Description	CMD (ASCII)
Tax-Free Item (A0h) (Note*)	"Space Character" (A0h)
Rate 1 Item (A1h)	¡
Rate 2 Item (A2h)	¢
Rate 3 Item (A3h)	£
Description	**Price (ASCII)**
The price is 8 Integers and 2 Fixed Decimals	10 Digits
Description	**Quantity (ASCII)**

The quantity is 5 Integers and 3 fixed Decimals **(Note*)**	8 Digits
Description	**Description (ASCII)**
Description of the Product (Note***)	116 Characters

Note*: The character for devolution of an item with Tax-Free rate is (A0h), that can be printed as a "space character", but mentioned character is totally different to the "space character" (20h), which is used to register a product with Tax-Free rate.

Note**: The maximum value for quantity is **99999.999**

Note***: 116 characters for description in three lines (two lines with 40 characters and one line with 37 characters),

4.10.2. Cancellation of an invoice

This command allows cancel an invoice. This command can be used before send total or partial payment.

Characters position in the command line	1	2	3	3
Structure of the Command	STX	'7'	ETX	LRC

4.11. Means of payment

4.11.1. Direct Mean of Payment

This command allows close an invoice and assigns the total amount to a mean of payment. Executing this command will open the drawer of money.

Characters position in the command line	1	2	3	4	5	6
Structure of the Command	STX	'1'	# Mean		ETX	LRC

Description	# Mean (ASCII)
Number of the mean of payment	'01' – '16'

The descriptors default programmed for the mean of payments are as follow:

Efectivo	'01'-'04'
Cheque	'05'-'08'
Tarjeta	'09'-'12'
Ticket	'13'-'16'

4.11.2. Partial Mean of Payment

This command allows assign part of the total amount of an invoice to a partial mean of payment. If the input amount is greater or equal to the total amount, the invoice will be closed and the drawer of money will be opened. This command is useful when the customer pays for example, with credit card and cash.

Characters position in the command line	1	2	3	4	4 ~ 16	17	18
Structure of the Command	STX	'2'	# Mean		Mean of Payment	ETX	LRC

Description	# Mean (ASCII)
Number of Mean of Payment	'01' – '16'
Description	**Amount of Payment (ASCII)**
The amount of payment is 10 Integers and 2 Decimals	12 Digits

4.12.   Barcode Command

This command allows print a barcode as a reference product inside invoice and in the invoice foot.

Characters position in the command line	1	2	3 ~ 14	15	16
Structure of the Command	STX	CMD	Code	ETX	LRC

Description	CMD (ASCII)
Barcode is printed in the invoice as description of the product	'Y'
Barcode is printed in the footer of the invoice	'y'
Description	**Code (ASCII)**
Number code associated with barcode	32 Characters

The type of barcode for fiscal printer is chosen with the Flag 43 by the next values:

Value	Features
00	EAN 13 (12 Numeric Characters)
01	ITF (1 to 32 Numeric Characters)
02	CODE 128 (1 to 32 Alphanumeric Characters)

The code number associated with barcode is shown in receipt under the barcode if "Flag 30" is programmed with "01" value.

5. COMMANDS TO ISSUANCE OF CREDIT NOTE

The following is a general diagram to issuance a Credit Note; it shows all the possible operations for building this document.

Start of Cashier (*)
Section 4.1.1

Customer and Invoice Data
Section 5.1

Registering a Product in a Credit Note
Section 5.2

Register another Product — Yes

No

Void an item
Section 5.3 — Yes → The document is voided

No

Closure of Credit Note
Section 5.4

End of Cashier (*)
Section 4.1.2
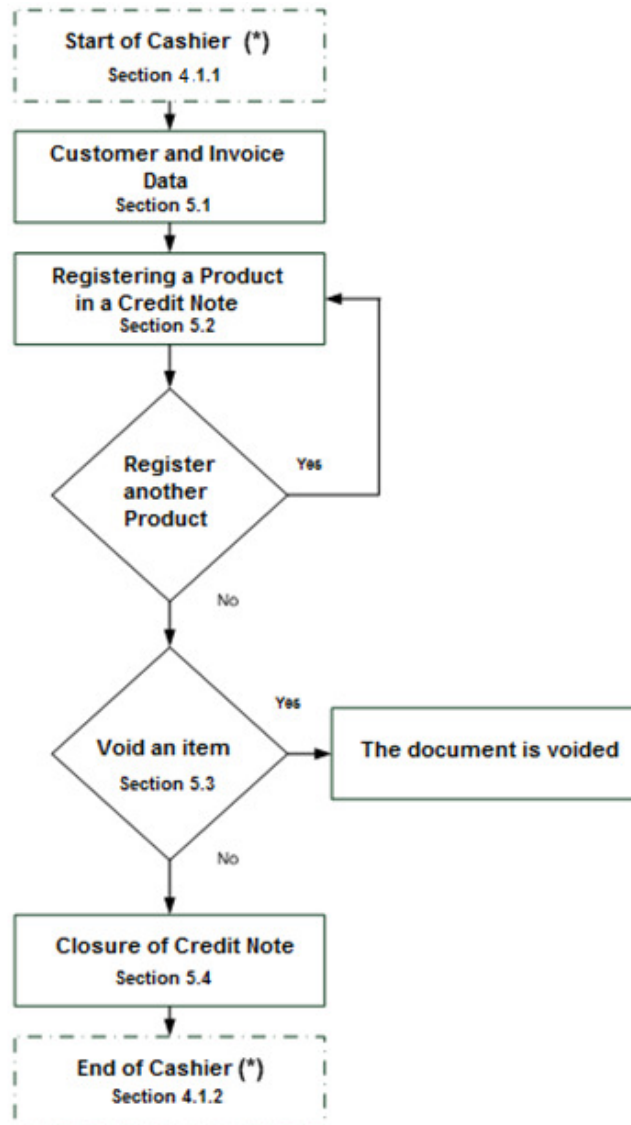
Section 4.1.1 (*)
Section 4.1.2 (*) These commands are used at the beggining of workday or changing cashiers; these commands are optional.

5.1. Register of Client

This command allows input RUC (Register Number of Contributor) of the client; It is mandatory to send this information if this document has to be issued.

Characters position in the command line	1	2	3	4 ~ 23	24	25
Structure of the Command	STX	' i '	'R'	RUC	ETX	LRC

Description	Data (ASCII)
RUC	Maximum 20 characters

5.1. Social Reason of Client

This command allows input Social Reason of the client in the Credit Note; It is mandatory to send this information if this document has to be issued.

Characters position in the command line	1	2	3	4 ~ 23	24	25
Structure of the Command	STX	' i '	'S'	sCmd	ETX	LRC

Description	Data (ASCII)
sCmd	40 characters fixed

5.2. Number of related receipt

This command allows input number of receipt to which is doing de Credit Note. It is mandatory send this information in order to issue the document.

Characters position in the command line	1	2	3	4 ~ 25	26	27
Structure of the Command	STX	'i '	'F'	sCmd	ETX	LRC

Description	Data (ASCII)
sCmd	22 characters fixed
	Example: AABBCC1234567-00000001

5.3. Additional information of client

This command allows input additional lines of information of client in a Credit Note.

Characters position in the command line	1	2	3	4 ~ 44	45	46
Structure of the Command	STX	'i '	SCmd0	Data	ETX	LRC

Description	Data (ASCII)
sCmd0	Lines of additional information of client in header → Maximum 40 characters
1-9	

5.4. Comment

This command allows input additional commercial messages in description of a product.

Characters position in the command line	1	2	3 ~22	23	24
Structure of the Command	STX	'A'	Message	ETX	LRC

Description	Data (ASCII)
Indicator of Message in receipt	20 characters

```
Example:
|Coke                         B/. 1,50 |
|##On Sale##                          |←
```

5.5. Register a Product in a Credit Note

This command allows register products in a Credit Note. With the register of the first product the next words will be printed in the ticket:

"NOTA DE CREDITO"

It is possible to register until ($ ó B/.) 9999999.99 by transaction.

It is possible to register until ($ ó B/.) 9999999.99 by day.

When limit amount is exceeded, the command to register a product is rejected.

If the maximum amount that the printer can accumulate is exceeded the printer reject all the sale commands, in this case it is necessary to issue a Z report to continue sales operations.

Characters position in the command line	1	2	3	4 ~ 13	14 ~ 21	22 ~ 138	139	140
Structure of the Command	STX	'd'	Tax	Price	Quantity	Description	ETX	LRC

Description	Rate (ASCII)
Free tax Item	0
Tax rate 1 Item	1
Tax rate 2 Item	2
Tax rate 3 Item	3

Description	Price (ASCII)
The price is 8 Integers y 2 fixed Decimals	10 Digits
Description	**Quantity (ASCII)**
The quantity is 5 Integers y 3 fixed Decimals	8 Digits
Description	**Quantity (ASCII)**
Description of the Product	116 Characters

5.6. Cancellation of an Item

Using this command, a registered item in a credit note can be voided.

Characters position in the command line	1	2	3	4 ~ 13	14 ~ 21	22 ~ 138	139	140
Structure of the Command	STX	'ä'	Tax rate	Price	Quantity	Description	ETX	LRC

Description	Rate (ASCII)
Free tax Item	0
Tax rate 1 Item	1
Tax rate 2 Item	2
Tax rate 3 Item	3
Description	**Price (ASCII)**
The price is 8 Integers y 2 fixed Decimals	10 Digits
Description	**Quantity (ASCII)**
The quantity is 5 Integers y 3 fixed Decimals	8 Digits
Description	**Quantity (ASCII)**
Description of the Product	116 Characters

5.7. Closure

- **Direct Payment**

This command allows assign a total amount of devolution for one mean of payment. When this command is executer, the cash-drawer is opened automatically.

Characters position in the command line	1	2	3 ~ 4	5	6
Structure of the Command	STX	'f'	# Mean of payment	ETX	LRC

Description	# Mean (ASCII)
Number of mean of Payment	01 – 16

- **Partial payment**

This command allows put some of the total devolution amount by <u>different means of payment</u>. When the document is totally paid, then drawer is opened automatically.

Characters position in the command line	1	2	3	4	5 ~ 16	17	18
Structure of the Command	STX	'2'	# Mean		Amount of payment	ETX	LRC

Description	# Mean (ASCII)
Indicator del Partial Method of Payment	'01' – '16'
Description	**Amount of Payment (ASCII)**
The amount of payment is de 10 Integers and 2 Decimals	12 Digits

Note: Another mode of close a Credit Note is using Direct Means of Payment.

6. Debit Notes Commands

6.1. Register of Client

This command allows input RUC (Register Number of Contributor) of the client; It is mandatory to send this information if this document has to be issued.

Characters position in the command line	1	2	3	4 ~ 23	24	25
Structure of the Command	STX	'i '	'R'	RUC	ETX	LRC

Description	Data (ASCII)
RUC	Maximum 20 characters

6.2. Social Reason of Client

This command allows input Social Reason of the client in the Debit Note; It is mandatory to send this information if this document has to be issued.

Characters position in the command line	1	2	3	4 ~ 23	24	25
Structure of the Command	STX	'i '	'S'	sCmd	ETX	LRC

Description	Data (ASCII)
sCmd	40 characters fixed

6.3. Number of related receipt

This command allows input number of receipt to which is doing de Debit Note. It is mandatory send this information in order to issue the document.

Characters position in the command line	1	2	3	4 ~ 25	26	27
Structure of the Command	STX	' i '	'F'	sCmd	ETX	LRC

Description	Data (ASCII)
sCmd	22 characters fixed Example: AABBCC1234567-00000001

6.4. Additional information of client

This command allows input additional lines of information of client in a Debit Note.

Characters position in the command line	1	2	3	4 ~ 43	44	45
Structure of the Command	STX	' i '	SCmd0	Data	ETX	LRC

Description	Data (ASCII)
sCmd0	Lines of additional information of client in header → Maximum 40 characters
1-9	

6.5. Comment

This command allows input additional commercial messages in description of a product.

Characters position in the command line	1	2	3 ~22	23	24
Structure of the Command	STX	'A'	Message	ETX	LRC

Description	Data (ASCII)
Indicator of Message in receipt	20 characters

```
Example:
|Coke                        B/. 1,50 |
|##On Sale##                        |←
```

6.6. Register a Product in a Debit Note

This command allows register products in a Debit Note. With the register of the first product the next words will be printed in the ticket:

"NOTA DE DEBITO"

It is possible to register until ($ ó B/.) 9999999.99 by transaction.

It is possible to register until ($ ó B/.) 9999999.99 by day.

When limit amount is exceeded, the command to register a product is rejected.

If the maximum amount that the printer can accumulate is exceeded the printer reject all the sale commands, in this case it is necessary to issue a Z report to continue sales operations.

Characters position in the command line	1	2	3	4 ~ 13	14 ~ 21	22 ~ 138	139	140
Structure of the Command	STX	0x60	Tax	Price	Quantity	Description	ETX	LRC

Description	Rate (ASCII)
Free tax Item	0
Tax rate 1 Item	1

Tax rate 2 Item	2
Tax rate 3 Item	3
Description	**Price (ASCII)**
The price is 8 Integers y 2 fixed Decimals	10 Digits
Description	**Quantity (ASCII)**
The quantity is 5 Integers y 3 fixed Decimals	8 Digits
Description	**Quantity (ASCII)**
Description of the Product	116 Characters

6.7. Cancellation of an Item

Using this command, a registered item in a credit note can be voided.

Characters position in the command line	1	2	3	4 ~ 13	14 ~ 21	22 ~ 138	139	140
Structure of the Command	STX	0xE0	Tax rate	Price	Quantity	Description	ETX	LRC

Description	**Rate (ASCII)**
Free tax Item	0
Tax rate 1 Item	1
Tax rate 2 Item	2
Tax rate 3 Item	3
Description	**Price (ASCII)**
The price is 8 Integers y 2 fixed Decimals	10 Digits
Description	**Quantity (ASCII)**
The quantity is 5 Integers y 3 fixed Decimals	8 Digits
Description	**Quantity (ASCII)**
Description of the Product	116 Characters

6.8. Closure of the Debit Note

• **Direct Payment**

This command allows assign a total amount of Debit Note for one mean of payment. When this command is executed, the cash-drawer is opened automatically.

Characters position in the command line	1	2	3 ~ 4	5	6
Structure of the Command	STX	'f'	# Mean of payment	ETX	LRC

Description	# Mean (ASCII)
Number of mean of Payment	01 – 16

• Partial payment

This command allows put some of the total amount of credit note by <u>different means of payment</u>. When the document is totally paid, then drawer is opened automatically.

Characters position in the command line	1	2	3	4	5 ~ 16	17	18
Structure of the Command	STX	'2'	# Mean		Amount of payment	ETX	LRC

Description	# Mean (ASCII)
Indicator del Partial Method of Payment	'01' – '16'
Description	**Amount of Payment (ASCII)**
The amount of payment is de 10 Integers and 2 Decimals	12 Digits

7. COMMANDS TO ISSUANCE OF NON FISCAL DOCUMENTS

The following is the general diagram for issuing any Non-Fiscal Document. It shows all the possible operations for making this document.
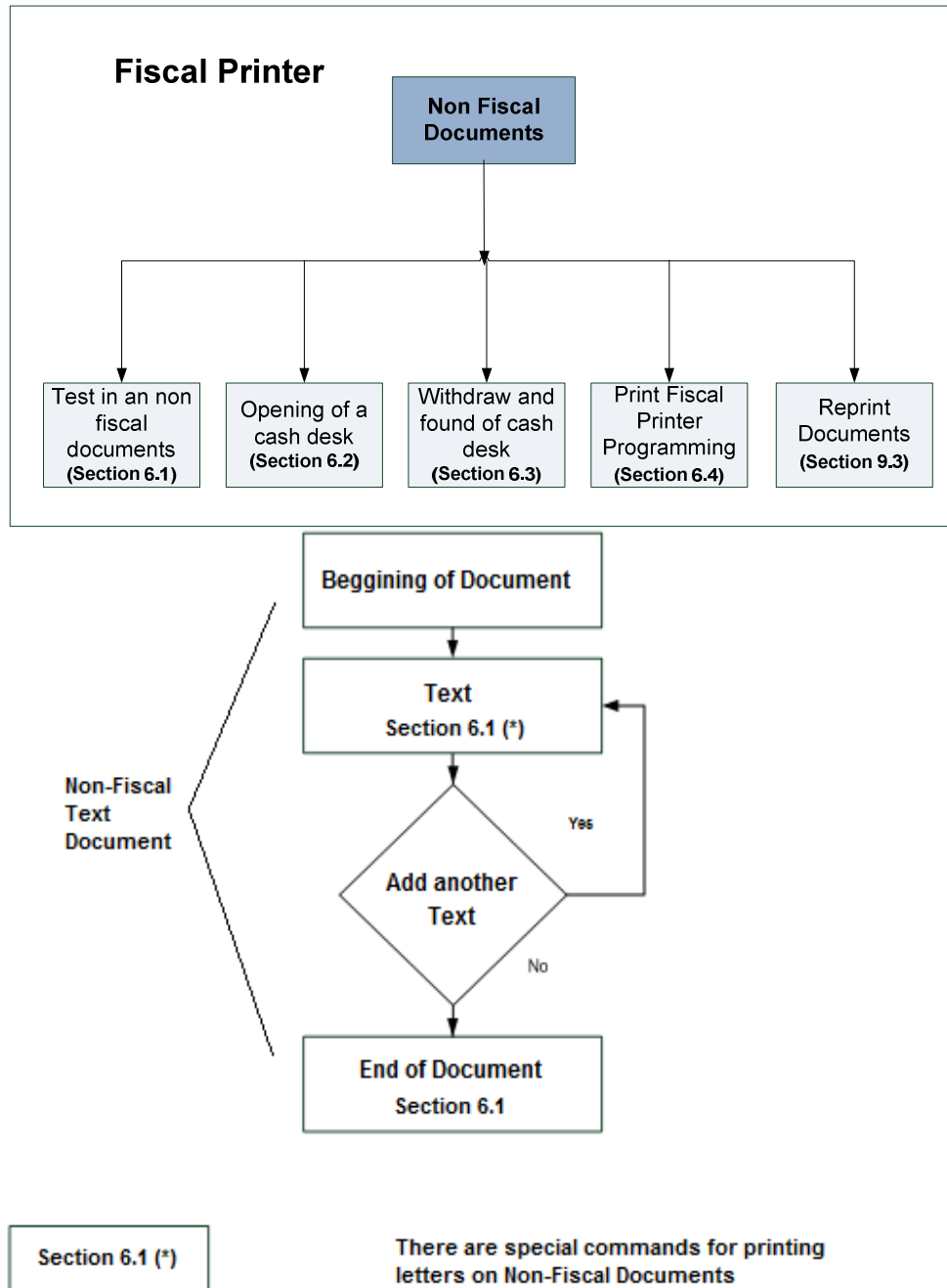
7.1. Text in a Non-Fiscal Document

This command allows print reports and notes as non-fiscal documents. In a non-fiscal document it prints automatically every four lines the word "NO FISCAL" (non-fiscal) as follow:

"N O F I S C A L"

Characters position in the command line	1	2	3	4	5 ~ 44	45	46
Structure of the Command	STX	'8'	STS1	STS2	Message	ETX	LRC

Description	STS 1 (ASCII)	STS 2 (ASCII)
Prints a line with text Normal and waits for another command	0	0
Prints a line with bold text and waits for another command (**)	0	*
Prints a line with expanded text and waits for another command (**)	0	>
Prints a line with double and bold text and waits for another command (**)	0	$
Prints a line with text centered and waits for another command (**)	0	!
Prints a line with text centered and bold and waits for another command (**)	0	i
Cierra el Documento No Fiscal (Corta el papel si tiene esa función la impresora)	1	0
Description	**Message (ASCII)**	
Text	40 Characters	

7.2. Opening of Cash Desk

This command allows opening the cash desk. This command prints a non-fiscal document with the title:

"A P E R T U R A" (Opening)

Characters position in the command line	1	2	3	4
Structure of the Command	STX	CMD	ETX	LRC

Description	CMD (ASCII)
Prints a non-fiscal document, with the message "Opening"	'0'
Allows the opening of the cash desk (invoice must have 1 product registered)	'w'

7.3. To withdraw and fund of cash-drawer

This command allows report funds and withdraws of cash or another mean of payment in the cash desk.

Characters position in the command line	1	2	3	4	5	6 ~ 17	18	19
Structure of the Command	STX	'9'	PR	# Mean		Amount of payment	ETX	LRC

Description	PR (ASCII)
To withdraw	0
Fund of cash	1
Description	**# Mean (ASCII)**
Number of Mean of payment	01 - 16
Description	**Amount (ASCII)**
The amount of payments is 10 Integers y 2 Decimals	12 Digits

7.4. Closure of Outcome / Income Cash Report (Fund of drawer)

This command performs the closure of the report of outcome / income of a mean of payment. When this command is executed, it closes the report and it opens the cash drawer..

Characters position in the command line	1	2	3	4
Structure of the Command	STX	't'	ETX	LRC

7.5. Printing Fiscal Printer programming

This command prints a document with the values stored for the following parameters:

- Taxes rates

- Name of cashiers

- Means of Payment Description

- System Flags

- Symbols

- Messages

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'D'	ETX	LRC

8. COMMANDS TO HANDLE THE DISPLAY

The following is the general diagram to handle the fiscal printer display.
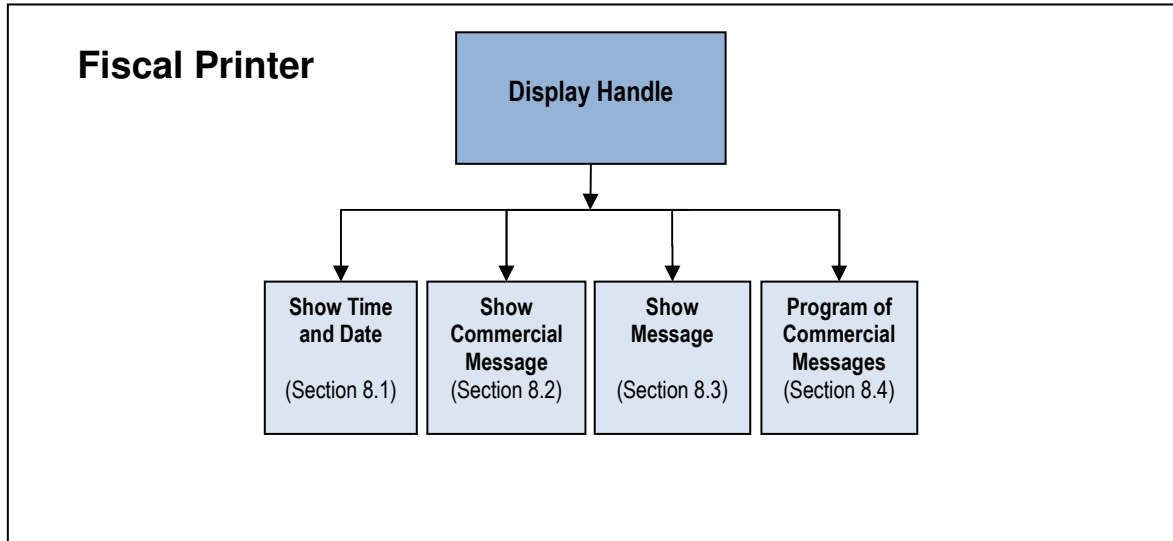
8.1. Show Time and Date

This command shows the time and date in the display. It is not possible to execute this command during a transaction.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'a'	ETX	LRC

8.2. Show Commercial Message

Show at the top of display the commercial message. It is not possible to execute this command during transaction.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'b'	ETX	LRC

8.3. Show Message

This command shows a message on the display.

Characters position in the command line	1	2	3	4 ~ 23	24	25
Structure of the Command	STX	'c'	Line	Message	ETX	LRC

Description	Line (ASCII)
Upper line of Display	U
Lower Line of Display	L
Description	**Message (ASCII)**
Message on Display	20 Characters

8.4. Programming of Commercial Messages on Display

This command allows programming the commercial message that shows the display.

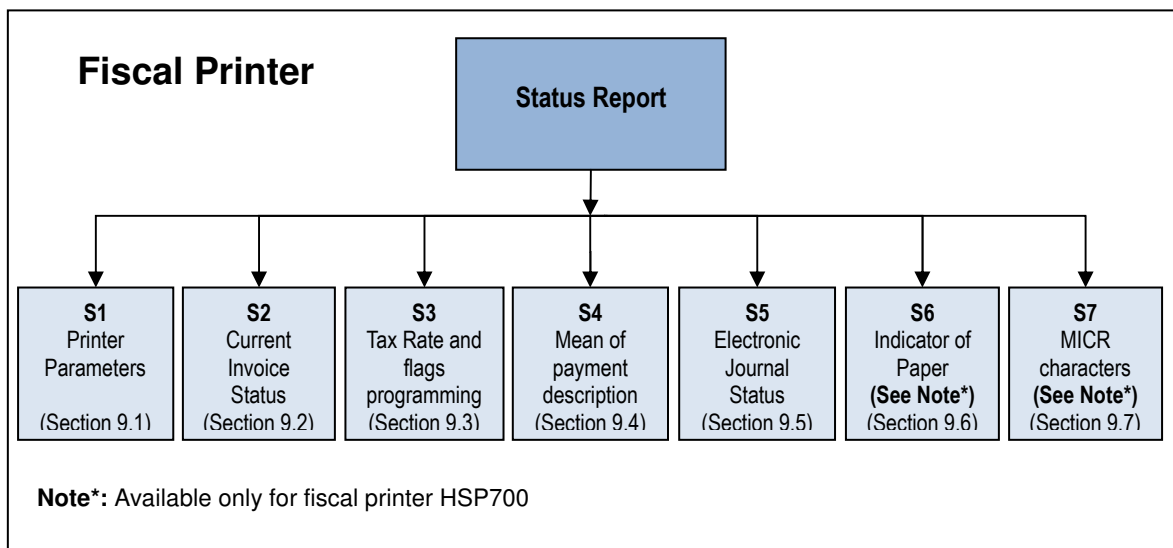| Characters position in the command line	1	2	3	4 ~ 53	54	55
Structure of the Command	STX	'P'	'I'	Message	ETX	LRC

Description	Message (ASCII)
Commercial message on Display	50 Characters

9. COMMANDS TO READ FISCAL PRINTER STATUS

The following is a general diagram to request and read status from the fiscal printer.

Note: Separator (0Ah) is present in the response from fiscal printer when is used the Direct Protocol. The TFHKA's DLL eliminates the separator (0Ah) in the answer.

Fiscal Printer

Status Report

| **S1** Printer Parameters (Section 9.1) | **S2** Current Invoice Status (Section 9.2) | **S3** Tax Rate and flags programming (Section 9.3) | **S4** Mean of payment description (Section 9.4) | **S5** Electronic Journal Status (Section 9.5) | **S6** Indicator of Paper **(See Note*)** (Section 9.6) | **S7** MICR characters **(See Note*)** (Section 9.7) |

Note*: Available only for fiscal printer HSP700

9.1. Status S1

This command allows read from host (PC) the status of the fiscal printer, related to parameters of the printer like serial number, tax identification number and invoice information. This command can be executed in any condition.

Characters position in the command line	**1**	**2**	**3**	**4**	**5**
Structure of the Command	STX	'S'	'1'	ETX	LRC

Response from the fiscal printer

Characters position	1	2 ～ 100	101	102
Structure of the Command	STX	Data	ETX	LRC

Detail of the printer response:

Since	Until	Length	Type	ITEM
2	3	2	ASCII	Command S1
4	5	2	ASCII	Number of assigned cashier
6	6	1	0Ah	Separator
7	23	17	ASCII	Total of daily sales(17 bytes)
24	24	1	0Ah	Separator
25	32	8	ASCII	Number of last invoice
33	33	1	0Ah	Separator
34	38	5	ASCII	Quantity of invoices during day
39	39	1	0Ah	Separator
40	47	8	ASCII	Number of last credit note
48	48	1	0Ah	Separator
49	53	5	ASCII	Quantity of credit notes during day
54	54	1	0Ah	Separator
55	62	8	ASCII	Number of last debit note
63	63	1	0Ah	Separator
64	68	5	ASCII	Quantity of debit notes during day
69	69	1	0Ah	Separator
70	77	8	ASCII	Number of non-fiscal document
78	78	1	0Ah	Separator
79	83	5	ASCII	Quantity of non-fiscal documents
84	84	1	0Ah	Separator
85	88	4	ASCII	Daily closure counter
89	89	1	0Ah	Separator
90	93	4	ASCII	Fiscal memory reports counter
94	94	1	0Ah	Separator
95	114	20	ASCII	RUC
115	115	1	0Ah	Separator
116	117	2	ASCII	DV
118	118	1	0Ah	Separator
119	131	13	ASCII	Serial number of the machine.
132	132	1	0Ah	Separator
133	138	6	ASCII	Actual time in the printer
139	139	1	0Ah	Separator
140	145	6	ASCII	Actual date in the printer

9.2. Status S2

This command allows read from host (PC) the status of the invoice in transaction. If this command is executed without an invoice open the obtained values will be zero.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'2'	ETX	LRC

Response from the fiscal printer

Characters position	1	2 ∼ 77	78	79
Structure of the Command	STX	Data	ETX	LRC

Detail of the printer response:

Since	Until	Length	Type	ITEM
2	3	2	ASCII	Command S2
4	4	1	20h	Separator (space)
5	17	13	ASCII	Taxable bases Sub-Total (13 bytes)
18	18	1	0Ah	Separator
19	19	1	20h	(space character)
20	32	13	ASCII	Tax Subtotal
33	33	1	0Ah	Separator
34	34	1	20h	(space character)
35	47	13	ASCII	Data Dummy
48	48	1	0Ah	Separator
49	54	6	20h	**See Note S2**
55	55	1	ASCII	Separator
56	56	1	0Ah	Separator (space)
57	69	13	ASCII	Amount payable
70	70	1	0Ah	Separator
71	74	4	ASCII	Number of realized payments
75	75	1	0Ah	Separator
76	76	1	ASCII	Condition 0 = No transaction 1 = In invoice payment 2 = Credit Note 3 = Debit Note
77	77	1	0Ah	Separator

Note: Depending of value programmed in the flag 28, this data have different meanings. If flag 28 value is "0", this data in the report is data dummy. Otherwise flag 28 value is "1", this data is the quantity of products of the invoice in transaction. For further information please read the fiscal printer flag manual.

9.3. Status S3

This command allows reading from host (PC) the status of the fiscal printer, related to taxes rates and status flag. This command can be executed in any condition.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'3'	ETX	LRC

Response from fiscal printer

Characters position	1	2 ~ 122	123	124
Structure of the Command	STX	Data	ETX	LRC

Detail of the printer response:

Since	Until	Length	Type	ITEM
2	3	2	ASCII	Command
4	4	1	ASCII	Rate type 1
5	8	4	ASCII	Rate value 1
9	9	1	0Ah	Separator
10	10	1	ASCII	Rate type 2
11	14	4	ASCII	Rate value 2
15	15	1	0Ah	Separator
16	16	1	ASCII	Rate type 3
17	20	4	ASCII	Rate value 3
21	21	1	0Ah	Separator
22	121	100	ASCII	System Flags 1-50 (Every Flag has 2 characters)
122	122	1	0Ah	Separator

9.4. Status S4

This command allows reading from host (PC) the status of the fiscal printer, related to the mean of Payment. It is possible to execute this command in any condition.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'4'	ETX	LRC

Response from fiscal printer

Characters position	1	2 ~ 178	179	180
Structure of the Command	STX	Data	ETX	LRC

Detail of the printer response:

Since	Until	Length	Type	ITEM
2	3	2	ASCII	Command S4
4	13	10	ASCII	Mean of Payment 1
14	14	1	0Ah	Separator
15	24	10	ASCII	Mean of Payment 2
25	25	1	0Ah	Separator
26	35	10	ASCII	Mean of Payment 3
36	36	1	0Ah	Separator
37	46	10	ASCII	Mean of Payment 4
47	47	1	0Ah	Separator
48	57	10	ASCII	Mean of Payment 5
58	58	1	0Ah	Separator
59	68	10	ASCII	Mean of Payment 6
69	69	1	0Ah	Separator
70	79	10	ASCII	Mean of Payment 7
80	80	1	0Ah	Separator
81	90	10	ASCII	Mean of Payment 8
91	91	1	0Ah	Separator
92	101	10	ASCII	Mean of Payment 9
102	102	1	0Ah	Separator
103	112	10	ASCII	Mean of Payment 10

Since	Until	Length	Type	ITEM
113	113	1	0Ah	Separator
114	123	10	ASCII	Mean of Payment 11
124	124	1	0Ah	Separator
125	134	10	ASCII	Mean of Payment 12
135	135	1	0Ah	Separator
136	145	10	ASCII	Mean of Payment 13
146	146	1	0Ah	Separator
147	156	10	ASCII	Mean of Payment 14
157	157	1	0Ah	Separator
158	166	10	ASCII	Mean of Payment 15
167	167	1	0Ah	Separator
168	177	10	ASCII	Mean of Payment 16
178	178	1	0Ah	Separator

9.5. Status S5

This command allows read from host (PC) the status of the fiscal printer, related to the status of the Electronic Journal. This command can be executed in any condition.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'5'	ETX	LRC

Response from fiscal printer

Characters position	1	2 ~ 47	48	49
Structure of the Command	STX	Data	ETX	LRC

Detail of the printer response:

Since	Until	Length	Type	ITEM
2	3	2	ASCII	"S5"
4	14	20	ASCII	RUC
24	24	1	0Ah	separator 0x0A
25	26	2	ASCII	DV
27	27	1	0Ah	Separator 0x0A
28	25	13	ASCII	Serial
41	41	1	0Ah	separator 0x0A
42	45	4	ASCII	Number of Electronic Journal
46	46	1	0Ah	separator 0x0A
47	50	4	ASCII	Memory Capacity (MB)
51	51	1	0Ah	separator 0x0A
52	55	4	ASCII	Free Memory Space (MB)
56	56	1	0Ah	separator 0x0A
57	63	6	ASCII	Quantity of registered documents.

9.6. Status S6

This command makes a request for Status S6 information; indicating if there is paper in each of the 3 printing devices (Billing, Slip/Check Printer, and Validation). This command is valid for fiscal printer Star HSP7000

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'6'	ETX	LRC

Detail of the answer:

From	To	SIZE	Type	ITEM
0	1	2	ASCII	"S6"
2	2	1	ASCII	Indicator of paper in Print Device for Billing
3	3	1	ASCII	Indicator of paper in Print Device for Slip/Check Printer
4	4	1	ASCII	Indicator of paper in Print Device for Validation

9.7. Status S7

This command makes a request for status S7 information, which contains MICR characters. This command is valid for fiscal printer Star HSP7000

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	'S'	'7'	ETX	LRC

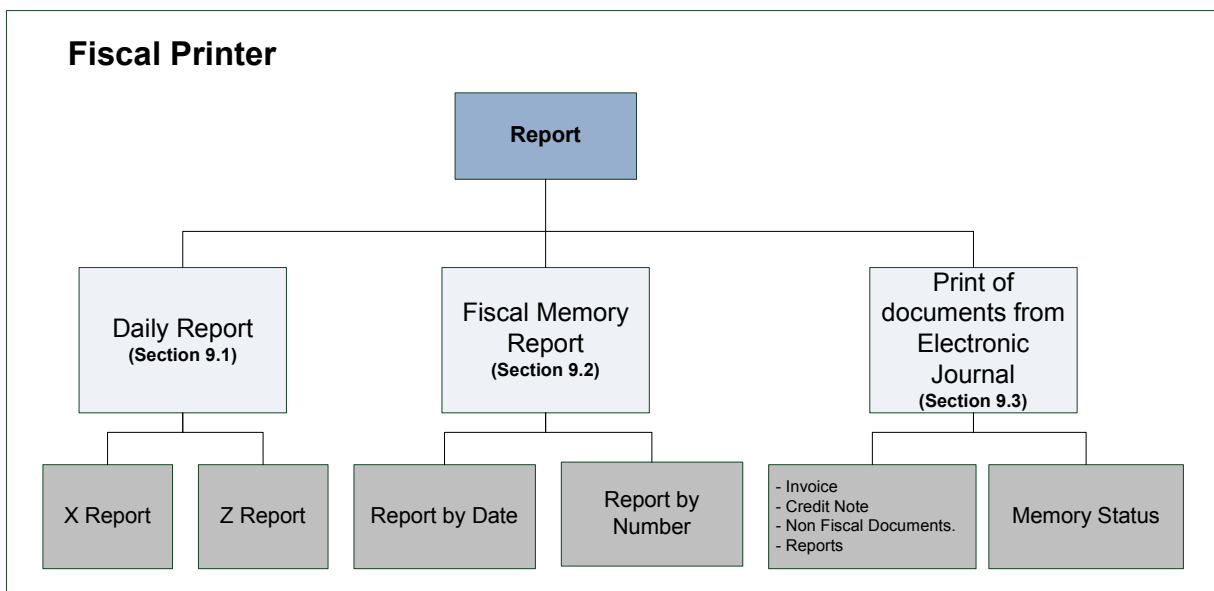| From	To	SIZE	Type	ITEM
0	1	2	ASCII	"S7"
2	38	39	ASCII	MICR Characters

10. COMMANDS FOR THE ISSUANCE OF REPORTS

The following is the general diagram for requesting reports from the fiscal printer.

This is the sequence for requesting and reading X Report and Z Report.

PC		Fiscal Printer
STX+U+…+ETX+LRC	→→→→→→→→→→→→→	*ENQ*
	←←←←←←←←←←←←	
ACK	→→→→→→→→→→→→→	*STX- DATAn-ETB-LCR*
	←←←←←←←←←←←←	
ACK	→→→→→→→→→→→→→	*EOT*

General Structure of Fiscal Printer Reports:

Fiscal Printer

Report

- Daily Report (Section 9.1)
  - X Report
  - Z Report
- Fiscal Memory Report (Section 9.2)
  - Report by Date
  - Report by Number
- Print of documents from Electronic Journal (Section 9.3)
  - - Invoice
    - Credit Note
    - Non Fiscal Documents.
    - Reports
  - Memory Status

10.1. X & Z Report

This command allows generate daily reports with non-fiscal value (X), and daily reports with fiscal value (Z). The information of the daily report (Z Report) is stored in the fiscal memory in the time of printing.

The accumulated values can be used to do weekly sale reports, monthly, etc.

Characters position in the command line	1	2	3	4	5	6
Structure of the Command	STX	CMD	Type	Mode	ETX	LRC

Description	CMD (ASCII)
Indicator to print specified report	'I'
Indicator to erase specified report	'X'
Indicator to send report to PC	'U'
Description	**Type (ASCII)**
Report of Transaction of the day	'0'
Report of accumulated Total (X2 ó Z2 according to the case)	'1'
Description	**Mode (ASCII)**
Partial cut of the daily sales	'X'
Daily closure of operations	'Z'

10.2.   Fiscal Memory Reports

10.2.1.   Fiscal Memory Report by Dates

This command allows print an Audit report that is defined between two dates

Characters position in the command line	1	2	3	4	5 ∼ 10 Start Date			11 ∼ 16 Final Date			17	18
					Day	Month	Year	Day	Month	Year		
Structure of the Command	STX	CMD	'2'	Mode	Day	Month	Year	Day	Month	Year	ETX	LRC

Description	CMD (ASCII)
Issue a printed report	'I'
Send information report to PC	'U'
Description	Mode (ASCII)
Includes all the information of the reports	'A'
Is a summary of reports	'S'
Is a monthly summary of the reports	'M'

10.2.2. Fiscal Memory Reports by Z number

This command allows print an Audit Report that is defined between two numbers of daily reports (Z Report).

Characters position in the command line	1	2	3	4	5	6	7～ 10	11	12	13～16	17	18
Structure of the Command	STX	CMD	'3'	Mode	'0'	'0'	Z counter (Start)	'0'	'0'	Z counter (Final)	ETX	LRC

Description	CMD (ASCII)
Issue a printed report	'I'
Send information report to PC	'U'
Description	Mode (ASCII)
Includes all the information of the reports	'A'
Is a summary of reports	'S'
Is a monthly summary of the reports	'M'

Format of response from fiscal printer

Characters position	1	2～143	144	145
Structure of the Command	STX	Data	ETX	LRC

Detail of answer from the printer:

Since	Until	Length	Type	ITEM
2	5	4	ASCII	Number of last Z Report
6	6	1	0Ah	separator 0x0A
7	12	6	ASCII	Date of last Z Report
13	13	1	0Ah	separator 0x0A
14	17	4	ASCII	Time of last Z report
18	18	1	0Ah	separator 0x0A
19	28	10	ASCII	Free-Taxes Accumulated
29	29	1	0Ah	separator 0x0A
30	39	10	ASCII	Amount of Tax Rate1 Accumulated
40	40	1	ASCII	separator 0x0A
41	50	10	ASCII	Amount of Tax Rate 2 Accumulated
51	51	1	0Ah	separator 0x0A
52	61	10	ASCII	Amount of Tax Rate 3 Accumulated
62	62	1	0Ah	separator 0x0A
63	72	10	ASCII	Total Sales (without tax)
73	73	1	0Ah	separator 0x0A
74	83	10	ASCII	Total amount of Credit Note (without tax)
84	84	1	0Ah	separator 0x0A
85	94	10	ASCII	Total amount of Debit Note (without tax)
95	95	1	0Ah	separator 0x0A
96	103	8	ASCII	Number of last invoice
104	104	1	0Ah	separator 0x0A
105	110	6	ASCII	Date of last invoice
111	111	1	0Ah	separator 0x0A
112	115	4	ASCII	Time of last invoice
116	116	1	0Ah	separator 0x0A
117	124	8	ASCII	Number of last credit note
125	125	1	0Ah	separator 0x0A
126	133	8	ASCII	Number of last debit note
134	134	1	0Ah	separator 0x0A
135	143	8	ASCII	Number of last Non fiscal document

Sequence of Fiscal Reading

PC		Printer
STX+U+…+ETX+LRC	→→→→→→→→→→→→	
	←←←←←←←←←←←←	
ACK	→→→→→→→→→→→→	*ENQ*
	←←←←←←←←←←←←	
ACK	→→→→→→→→→→→→	*STX- DATAn-ETB-LCR (See Note)*
	←←←←←←←←←←←←	
	→→→→→→→→→→→→	*EOT*

Note: The indicated segment will be repeated (n-1) times, where n means the value of quantity of reports to be loaded in the machine. For example, if there are ten Z reports, the segment will be repeated 9 times and then will follow the shown scheme.

10.3.   Electronic Journal Documents & Status

This command is supported by printers with "electronic journal" only. In the electronic journal are stored all the documents that were printed.

10.3.1.   Reprint Documents command

This command allows re-print documents stored in the "Electronic Journal". The general form of this command is as follow:

Characters position in the command line	1	2	3	4 ~ 10	11 ~ 17	18	19
Structure of the Command	STX	'R'	Mode	Start	End	ETX	LRC

The field **Mode** is related to type of document, when this field is indicated with a capital letter the request is by range of number and when the fields is indicated with a minuscule letter, the request is by range of dates. The range will be indicated by **Start** and **End.**

For a request by range of number, Mode may be:

Description	Mode (ASCII)
For invoices stored in Electronic Journal	'F'
For credit notes stored in Electronic Journal	'C'
For debit notes stored in Electronic Journal	'D'
For all non fiscal documents	'T'
X Report	'X'
For Z reports stored in Electronic Journal	'Z'
RAM CLEAR	'Y'
Copies	'E'
Receipts, credit notes and debit notes	'S'
All documents except copies and blocking errors	'A'
Non fiscal documents except RAM CLEAR, copies and X report	'N'
All documents (including RAM CLEAR, copies and X report	'*'

For a request by range of date (format 0YYMMDD both for start and for end), **Mode** may be:

Description	Mode (ASCII)
For invoices stored in Electronic Journal	'f'
For credit notes stored in Electronic Journal	'c'
For debit notes stored in Electronic Journal	'd'
For all non fiscal documents	't'
X Report	'x'
For Z reports stored in Electronic Journal	'z'
For reports of reading of fiscal memory, stored in Electronic Journal	'r'
Hardware error	'w'
RAM CLEAR	'y'
Copies	'e'
Receipts, credit notes and debit notes	's'
All documents except copies and blocking errors	'a'
Non fiscal documents except RAM CLEAR, copies and X report	'n'
All documents (including RAM CLEAR, copies and X report)	'@'

Note: For the special case of printing last document stored in "Electronic Journal", Mode will be 'U' and both Start and End will be "0000000", as follow:

Characters position in the command line	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Structure of the Command	STX	'R'	'U'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	'0'	ETX	LRC

10.3.2. Re-printing documents by number of CIP

Para reimprimir documentos por el número de cédula del cliente se debe enviar el número de cédula hasta un máximo de 20 caracteres, del mismo modo que en el comando de registro del cliente (Sección **¡Error! No se encuentra el origen de la referencia.**). La forma general del comando es la siguiente:

Characters position in the command line	1	2	3	4～24	25	26

Structure of the Command	STX	'R'	'K'	CIP	ETX	LRC

DATO	VALOR	DESCRIPCION
CIP	STRING	Number of CIP

10.3.3. Printing Electronic Journal Status

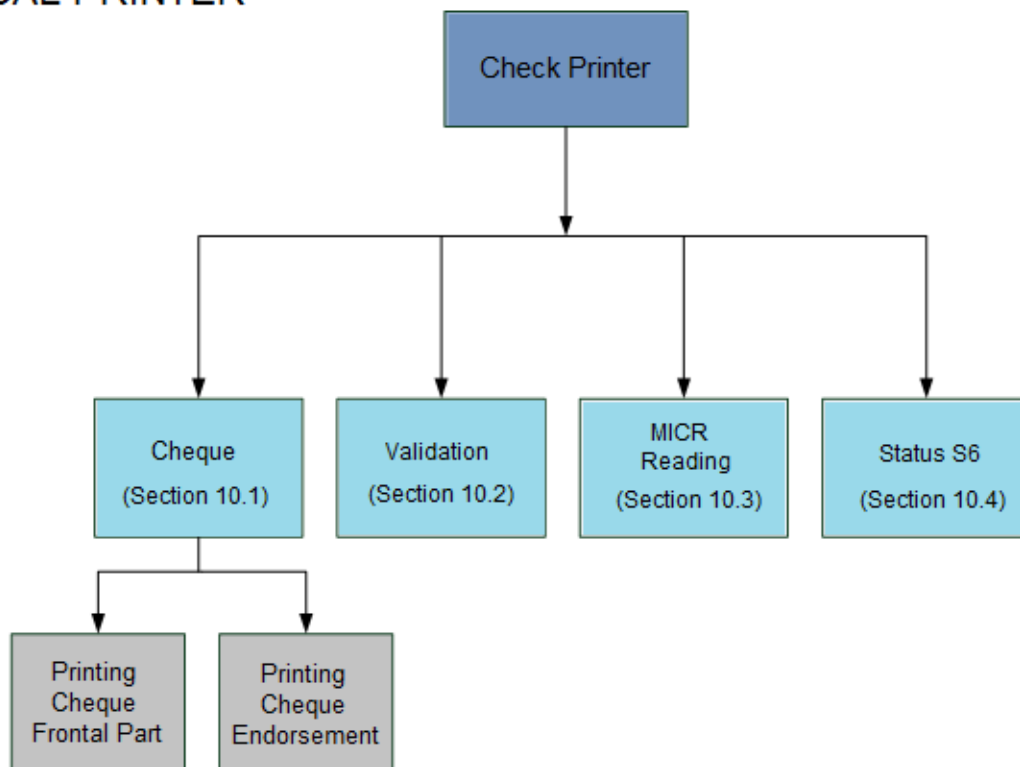| Characters position in the command line	1	2	3	4
Structure of the Command	STX	'E'	ETX	LRC

With this command the printer generates a ticket with the following information corresponding to the general status of the Electronic Journal:

- Number of Electronic Journal

- Total capacity of the Electronic Journal

- Available space of the Electronic Journal

- Number of stored documents in the Electronic Journal

11. COMMANDS FOR THE ISSUANCE OF CHECKS

The following commands are for exclusive use for fiscal printers with check printing capabilities as the STAR HSP7000.

FISCAL PRINTER

```
                        Check Printer


     Cheque          Validation        MICR          Status S6
   (Section 10.1)   (Section 10.2)    Reading       (Section 10.4)
                                    (Section 10.3)


  Printing        Printing
  Cheque          Cheque
  Frontal Part    Endorsement
```

11.1. Check

11.1.1. Slip Mode

This command enables slip printer functions. This is the first command required for any of the following functions

.

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	':'	ST	ETX	LRC

Description	ST
Slip activation	1
Slip deactivation	0

11.1.2. Check Format (Frontal Part)

This command sends to the slip printer data that will be printed in the check.

Characters position in the command line	1	2	3	4	5	6	7	8 ～ 19	20 ～ 69	70 ～ 119	120	121
Structure of the Command	STX	'<'	F1	F2	F3	F4	F5	Quantity	Client Data	Date Data	EXT	LRC

Description	F1 -> F5 (ASCII)
F1 (Number of Lines between Check Top and Quantity)	0 -> 9
F2 (Number of Lines between Quantity and "No Endosable")	0 -> 9
F3 (Number of Lines between "No Endosable" and Name)	0 -> 9
F4 (Number of Lines between Name and Quantity)	0 -> 9
F5 (Number of Lines between Quantity and Date)	0 -> 9

Description	(ASCII)
Quantity (8 Integers y 2 Decimals) E.g.: 12.345.678,90	10 Characters
Client Data	50 Characters
Date Data	50 Characters

11.1.3.   Check Format (Endorsement)

Characters position in the command line	1	2	3	4 ～ 33	34	35
Structure of the Command	STX	=	F1	Line	ETX	LRC

Description	F1 (ASCII)
F1 (Number of Line sent for each command)	1 -> 9
Description	**(ASCII)**
Line 1 (Account Number), ------> "Nº: "	30 Characters
Line 2 (Payee Name), ----> "De: "	30 Characters
Line 3 (…Payee Name continuation)	30 Characters
Line 4 (Bank Name), -------> "En el banco: "	30 Characters
Line 5 (Additional Line) **optional	30 Characters
Line 6 (Additional Line) **optional	30 Characters
Line 7 (Additional Line) **optional	30 Characters
Line 8 (Additional Line) **optional	30 Characters
Line 9 (Additional Line) **optional	30 Characters

Note: Text in quotes for the previous command description line is written automatically by the fiscal printer. Every Command Line must have 30 characters, if it is necessary, blank space characters can be used to complete this quantity of characters.

11.1.4.   Print Endorsement

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	[	F1	ETX	LRC

Description	F1 (ASCII)
F1 (Number of Lines between Top and "Nº: ")	0 -> 9

Note: This command always must be sent after all the endorsement commands. (See 10.1.3- Check Format (Endorsement))

NOTE: While fiscal printer is issuing an invoice, it is possible to use check printer.

11.2. Validation Commands

11.2.1. Validation Mode

Characters position in the command line	1	2	3	4	5
Structure of the Command	STX	';'	ST	ETX	LRC

Description	ST
Activate Validation	1
Deactivate Validation	0

11.2.2. Print Validation

Characters position in the command line	1	2	3 ~ 52	53	54
Structure of the Command	STX	'>'	Text	ETX	LRC

Description	(ASCII)
Text	50 Characters

11.2.3. MICR Reading

This command read information from Magnetic Characters printed in the bottom of the check and stores this information in the printer buffer for later reading from pc.

Characters position in the command line	1	2	3	4
Structure of the Command	STX	'?'	ETX	LRC

11.3. Gift Certificate and POS note:

11.3.1. On and Off of the Slip:

Character position (s) in the Command Line	1	2	3	4	5
Command Structure	STX	':'	ST	ETX	LRC

Description	ST
Activate Validation	1
Disabling Validation	0

11.3.2. Lines of Information

Character position (s) in the Command Line	1	2	3 ∼ 33	34	35
Command Structure	STX	=	Line	ETX	LRC

Description	(ASCII)
Line 1	30 Characters
Line 2	30 Characters
Line 3	30 Characters
Line 4	30 Characters
Line Between 4 and 5 are automatically set a dividing line	
Line 5 (Line Additional) **optional	30 Characters
Line 6 (Line Additional) **optional	30 Characters
Line 7 (Line Additional) **optional	30 Characters
Line 8 (Line Additional) **optional	30 Characters
Line 9 (Line Additional) **optional	30 Characters

11.3.3. Gif certifícate and POS note:

Character position (s) in the Command Line	1	2	3	4	5	6	7
Command Structure	STX	[	Type	X	Y	ETX	LRC

Description	Type
Gift coupon	R
POS Note	N

Description	X (ASCII)
Number of Lines added to left margin	0 -> 9
Description	**Y (ASCII)**
Number of Lines added to up margin	0 -> 9

12. ERROR LIST

# ERROR	Name	Description
2	ERROR_I2C	Writing or Reading error of fiscal memory or work memory
3	ERROR_COM2	Communication Error or timeout with COM2
4	ERROR_COM3	Communication Error or timeout with COM3
5	ERROR_CRC	Wrong CRC
6	ERROR_COMANDO	When a command has a wrong format (out of range, command doesn't exist, or any error during fiscalization)
7	ERROR_JOB	Internal Error of the printer
8	ERROR_BUFFER_VA	Error in printer buffer
9	ERROR_FECHA	Date error
10	ERROR_NO_PLU_DATA	PLU or discount wasn't found
11	ERROR_ESTADO	Printer in its state can't receive actual command
12	ERROR_RESET	Error during execution of RESET
13	ERROR_RAM_CLEAR	Error during RAM CLEAR
14	ERROR_FM_LECTURA	Fiscal Memory read only
15	ERROR_FM_NUEVA	Fiscal Memory new
16	ERROR_TOTALES	Max Amounts allowed for receipts or accumulators for daily report (Z report) have been exceeded
17	ERROR_TASA	Tax rate error
# ERROR	Nombre	Descripción
18	ERROR_EJ_CRC	EJ Reading memory
19	ERROR_EJ	EJ Error
20	ERROR_WORK_V	Work Memory error to read data related to sales of day (data error or failure in work memory)
21	ERROR_WORK_C	Work memory error to read data related to system settings, because of wrong data or

		failures in work memory
22	ERROR_WORK_D	Work Memory Error in order to read or save data related to actual document
23	ERROR_RAM	Work Memory Error
24	ERROR_EJ_REG	Register error in EJ
25	ERROR_EJ_NO_CARD	EJ is not connected
26	ERROR_INDICEZ	Daily report Index Error
27	ERROR_FM_G	Fiscal Memory Error
28	ERROR_FM_C	Fiscal Memory Error
29	ERROR_FM_B	Fiscal Memory Error
30	ERROR_FM_FULL	Fiscal Memory Full
31	ERROR_FM	Fiscal Memory Error