

# EPSON

## Fiscal Printer

### Application Sw Development Guide

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## Index

<b>1. Overview</b>	5
<b>2. List of related documents</b>	5
<b>3. Abbreviation</b>	5
<b>4. Fiscal printer architecture</b>	6
<b>5. Epson fiscal printer main features</b>	8
<b>6. How to use the Epson Fiscal Printer using the keyboard</b>	10
<b>7. REG MODE</b>	12
7.1. Key <CL>	12
7.2. Key <X>	12
7.3. Key <VOID>	12
7.4. Key <REPARTO>	12
7.5. Key <CREDITO/CARTA DI CREDITO>	12
7.6. Key <ASSEGNI>	12
7.7. Key <SUBTOTALE/APERTURA CASSETTO>	12
7.8. Key <TOTALE>	12
7.9. Key <↑G>	13
7.10. Key <↑S>	13
7.11. Key <RESO> (return goods)	13
7.12. Key <%-> e <%+>	13
7.13. Key <STORNO>	13
7.14. Key <ALL VOID >	13
7.15. Key <CHIAVE SOFTWARE>	13
<b>8. X MODE</b>	14
8.1. Mode state 01: Daily financial report	14
8.2. Mode state 02: daily report category	14
8.3. Mode state 03: daily report department total amount	14
8.4. Mode state 04: daily report PLU data	14
8.5. Mode state 05: daily report by hour	14
8.6. Mode state 06: daily report by operators	14
8.7. Mode state 07: report by department operators	15
8.8. Mode state 08: report by category	15
8.9. Mode state 09: total report by department	15
8.10. Mode state 10: PLU report	15
8.11. Mode state 11: PLU report by hour	15
8.12. Mode state 12: operator report by hour	15
8.13. Mode state 12: display the cash in the cash drawer	15
<b>9. Z MODE</b>	16
9.1. Mode state 01: Daily closure	16
9.2. Mode state 02: daily financial report	16
9.3. Mode state 03: daily category report	16
9.4. Mode state 04: daily PLU report	16
9.5. Mode state 05: daily report by hours	16
9.6. Mode state 06: daily operators report	16
9.7. Mode state 07: financial report	17
9.8. Mode state 08: category report	17
9.9. Mode state 09: PLU report	17
9.10. Mode state 10: selling report by hour	17

9.11.	Mode state 11: selling report by operator .....	17
9.12.	Mode state 12: Print-out of daily closure by number.....	17
9.13.	Mode state 13: Print-out of daily closure by date .....	18
9.14.	Mode state 14: Print-out of daily closure sum of total amount by date.....	18
9.15.	Mode state 15: Print-out of total daily closure saved in fiscal memory .....	18
9.16.	Mode state 16: Save in fiscal memory COMPANY NAME .....	19
9.17.	Mode state 96: Send the content of electronic Journal on serial interface using ASCII protocol.....	19
9.18.	Mode state 97: Format the DGFE flash memory.....	19
9.19.	Mode state 98: Print out the content of DGFE (E/J) between two fiscal receipt number in one particular day. ....	20
9.20.	Mode state 99: Print out the content of DGFE (E/J) between two date.....	20
<b>10.</b>	<b>STATO SET .....</b>	<b>21</b>
10.1.	Mode state 01: date and time setting.....	21
10.2.	Mode state 02: department program.....	21
10.3.	Mode state 02: PLU program.....	23
10.4.	Mode state 04: program discount or surcharge.....	24
10.5.	Mode state 05: VAT program.....	24
10.6.	Mode state 06: currency program.....	25
10.7.	Mode state 07: Program the Credit card description .....	26
10.8.	Mode state 09: Fixed cash key program .....	27
10.9.	Mode state 10: Program the tickets .....	27
10.10.	Mode state 11: Promotion MXn program .....	28
10.11.	Mode state 12: PLU direct key program.....	28
10.12.	Mode state 13: Operator program.....	29
10.13.	Mode state 14: Fiscal printer setting. ....	30
10.14.	Mode state 14: Fiscal printer setting (second part).....	36
10.15.	Mode state 16: program header of fiscal receipt character type.....	38
10.16.	Mode state 14: Serial communication setting .....	39
10.17.	Mode state 21: RAM reset.....	40
10.18.	Mode state 22: Printer test. ....	40
10.19.	Mode state 23: Serial test.....	40
10.20.	Mode state 28: Enable the technical check reminder. ....	40
10.21.	Mode state 29: PS2 configuration. ....	41
<b>11.</b>	<b>Epson fiscal printer error messages .....</b>	<b>42</b>
<b>12.</b>	<b>How to use the Epson Fiscal Printer using serial interface.....</b>	<b>44</b>
12.1.	DEMO PROGRAM .....	45
12.2.	Minimum methods to be implemented .....	49
12.3.	How to use a method.....	49
12.4.	How to print out a receipt .....	50
12.5.	How to perform a daily closure .....	50
<b>13.</b>	<b>VAT.....</b>	<b>50</b>
<b>APPENDIX A Keyboard layout .....</b>		<b>51</b>
32 Keyboard PS2 interface .....		51
APPENDIX B Cross reference between PC keyboard and 32 keys keyboard .....		52
<b>APPENDIX C Keyboard code .....</b>		<b>53</b>
<b>APPENDIX D: Interface signal .....</b>		<b>54</b>

## 1. Overview

Aim of this manual is to provide the basic information for the software houses that have to integrate the Epson fiscal printer in their application software.

Epson fiscal printer is a complete fiscal cash register. It can be used in stand alone mode (as cash register) or connected to a PC (as fiscal printer).

Using the Epson fiscal printer it is no needed any Government approval when you connect the fiscal printer to a POS system.

The fiscal printer is a complete cash register that you can connect to any kind of PC and application software.

Fiscal printers got the approval from Italian government as stand alone product or connectable printer.

The PS2 keyboard gives you the freedom to use any kind of PC or POS keyboard.

When the fiscal printer is connected to a PC/POS you can use the keyboard, of course the application software must provide all the basic fiscal function as for example daily closure.

## 2. List of related documents

Communication protocol rel. 1.7

FPxxx manuale operatore

ActiveX driver manual

## 3. Abbreviation

DGFE: Dispositivi Giornale Di Fondo Elettronico (electronic Journal)

## 4. Fiscal printer architecture

The Epson Fiscal printer provide the following interfaces/connectors:

- Power supply (24 Vcc 2Amp)
- Cash drawer
- Serial interface for Host communication
- Display
- PS2 interface
- Flash memory connector(for Electronic Journal model)

Following some details about configuration and devices:

**Power supply:** Epson model PS180 is the homologated power supply, it is possible to provide the power from computer like IR or other similar equipments.

**Cash drawer:** any kind of cash drawer can be used, the connector is a standard Epson TM printer.

**Serial Interface:** Standard serial interface is available to connect the printer to the computer, the following RS232 signals are used: CTS, RTS, RX and TX.

In stand alone mode it is possible to connect to the serial interface the following devices:

- Barcode reader
- Magnetic Card Reader

**Display:** Several kind of display 2 x 20 characters can be used:

- Epson DM-D110 and DM-D210 ( operator and user display)
- Double face display in FIP technology (CD7220 )
- Double face display in LCD technology (FD-110)

**PS2 Interface:** it is possible to connect to the printer any kind of Ps2 keyboard.

In standard package it is included in the box the PC keyboard, optionally Epson can provide a 32 keys POS keyboard.

It is possible to connect to the PS2 Interface a Barcode reader.

**Flash Memory connector:** In the model with electronic journal it is present a connector for installing a flash memory, on Fp90 model it is used the Multi Media Card (MMC). For MMC homologated pls contact Epson Italia Spa.

Epson fiscal printer can work in the following mode:

- Stand Alone mode
- On line mode: Master/Slave

In Stand alone mode the printer works as a complete cash register, on the serial interface it is possible to connect a card reader or a Barcode reader.

In on line mode the Epson fiscal printer is normally used to be connected to a computer that provide all the information needed, in this way we call this mode Slave mode.

It is possible to configure the Fiscal printer in Master mode, in this way the printer works as a cash register providing to the computer all the information relating the operation that the operator is doing.

In case the information relating a PLU is not available the printer ask to the computer such information.

## 5. Epson fiscal printer main features

### Epson Fiscal Printer is able to manage 4 different menu:

- “REG”: use in normal way to sell products.
- “X” : used to print-out not fiscal reports.
- “Z” use to print out the fiscal report and for daily closure
- “SET” to program the printer.

### Registers size:

Register name	Size (digit)	Max valueo
Items amount	7 +2	9.999.999,99
Receipt total amount	7+2	9.999.999,99
Daily total amount	7+2	9.999.999,99
Fiscal printer total amount	10+2	9.999.999.999,99

For the description 20 characters are used, in case of FP90 it is possible to extend up to 25 characters the products description

### Receipt header

It is possible to program up to 6 rows with different characters size to be used for the name of the company that is using the fiscal printer.

### PLU/Department

PLU and 40 department are programmable in the fiscal printer.

### Programmable parameters

Discount and surcharge percentage

Five taxes percentage

6 monetary standards

10 credit cards and a generic credit

10 product groups

5 key cash, with an associated value

2 promotions M x N

12 operators

Fiscal printer setup

The fiscal printer may work in stand alone mode or in slave mode connected to a computer



In stand alone mode the fiscal printer may have a slip printer connected in order to print receipts or invoices

Keyboard fully reprogrammable

Serial RS-232 port fully configurable

### **Total amount registers**

- One total amount for each department (40)
- Total number PLU register
- 4 total register amounts or the VAT with programmable VAT percentage.
- 6 + 1 monetary register value, 6 monetary + one for current monetary.
- 10 totals amount for credit card.

## 6. How to use the Epson Fiscal Printer using the keyboard

We assume the you are using the 32 keys POS keyboard connected to the PCS2 fiscal printer, if you are using a standard PC keyboard please check the following the cross reference table:

Example: VOID on 32 keys is equal to F1 to PC keyboard

Key on 32 POS keyboard				Equivalent Key in PC keyboard			
VOID	STORNO	RESO	ALL VOID	F1	F2	F3	F4
SCONTO %	SCONTO A VALORE	MAGG. %	PLU	F5	F6	F7	F8
7	8	9	IMPORTI NON RISCOSSI	7	8	9	F9
4	5	6	CARTA DI CREDITO	4	5	6	F10
1	2	3	CREDITO	1	2	3	F11
0	00	,	ASSEGNI	0	/	,	F12
CL	X	REP.	SUB-TOTALE	CANC	*	-	+
^S	^G	CHIAVE	TOTALE	S	G	C	INVIO

Using the keyboard it is possible to set one of the four different modes of the printer. REG, X, Z and SET.

To set the mode you have to do as follow:

**REG MODE:** Normal mode, used to sell the goods. Push the key CL (Clear) or CHIAVE to escape from other menu.

**X MODE:** From the REG MODE push 1111 + CHIAVE.

In this mode you can select different function used to print out the NOT fiscal report.

**Z MODE:** From the REG MODE, push 2222 + CHIAVE

In this mode you can perform the daily closure (function 01) and print put other fiscal report.

**SET MODE:** From the REG MODE, push 3333 + CHIAVE

In this mode you can select several programmed menu or function.

## 7. REG MODE

### 7.1. Key <CL>

Cancel the information on the display not already confirmed.  
In case of error it is possible to escape from the error state.

### 7.2. Key <X>

In case of receipt not open it is possible to show the DATE and TIME register on the display.

In other case it is possible to set the PLU: set the quantity (4 + 3 digit – 4.3) push X key then go on setting the price, department or PLU, STORNI or return goods.

### 7.3. Key <VOID>

Pushing this key it is possible to cancel the previous transaction. The amount of the transaction canceled is print-out with the negatives sign.

In case of close receipt, pushing this key you can print out the receipt header.

### 7.4. Key <REPARTO>

This key gives the possibility to perform a transaction to a dedicated department.

Pushing more then one time this key it is printed out the same item previous printed.

It is possible to program a description up to 20 characters, 3 kinds of price, VAT number, single item, max amount value, printer group and super department.

### 7.5. Key <CREDITO/CARTA DI CREDITO>

Pushing this key the transaction is closed, the payment is saved in the credit card payment.

### 7.6. Key <ASSEGNI>

Pushing this key the transaction is closed, the payment is saved in ASSEGNI (Check) payment.

### 7.7. Key <SUBTOTALE/APERTURA CASSETTO>

With a open receipt, pushing this key it is shown on the display the partial total amount.

To print out the partial total amount it is needed to manage a discount or surcharge.

Pushing this key with the receipt open, it is possible to control the cash drawer.

### 7.8. Key <TOTALE>

Pushing this key the transaction is closed, the payment is saved in cash payment.

Pushing this key with the receipt closed, the fiscal printer print out copy of the previous receipt without fiscal logo.

**7.9. Key <↑G>**

Used to feed the journal paper. IT is used also to confirm some program operation.

**7.10. Key <↑S>**

Used to feed the receipt paper roll.

**7.11. Key <RESO> (return goods)**

Used to save in the fiscal printer return back money or goods.  
The amount value is saved in a dedicated register.

**7.12. Keyi <%-> e <%+>**

Used to compute the amount in case of discount or surcharge,  
Pushing this key it is used to compute the percentage the value programmed.

**7.13. Key <STORNO>**

Used to cancel item from a open receipt.

It works in the following way:

1. Pushing the key STORNO
2. Pushing the amount to be cancelled (STORNO)
3. Pushing the department key

**7.14. Key <ALL VOID >**

It gives the possibility to cancel the current open receipt.

**7.15. Key <CHIAVE SOFTWARE>**

It gives the possibility to select one of the 4 different modes.

## 8. X MODE

After selecting the X mode, it is needed to input the function (state) requested (2 digits). After setting the state push the key CONTANTI to get the print-out. The result of print out is a not fiscal receipt with the content of fiscal memory.

### 8.1. Mode state 01: Daily financial report

X 01 FINANZIARIO GIOR.
---------------------------

### 8.2. Mode state 02: daily report category

X 02 MERCEOLOGICI G.
-------------------------

### 8.3. Mode state 03: daily report department total amount

X 03 REPARTI GIORNAL.
--------------------------

### 8.4. Mode state 04: daily report PLU data

X 04 PLU GIORNALIERI
-------------------------

### 8.5. Mode state 05: daily report by hour

X 05 ORARIA GIORNAL.
-------------------------

### 8.6. Mode state 06: daily report by operators

X 06 OPER. GIORNALIERI
---------------------------

**8.7. Mode state 07: report by department operators**

X 07 FINANZIARIO PER.
--------------------------

**8.8. Mode state 08: report by category**

X 08 MERCEOLOGICI P.
-------------------------

**8.9. Mode state 09: total report by department**

X 09 REPARTI PERIOD.
-------------------------

**8.10. Mode state 10: PLU report**

X 10 PLU PERIODICI
-----------------------

**8.11. Mode state 11: PLU report by hour**

X 11 ORARIA PERIODICA
--------------------------

**8.12. Mode state 12: operator report by hour**

X 12 OPER. PERIODICI
-------------------------

**8.13. Mode state 12: display the cash in the cash drawer**

X 13 TOTALE GIORNO
-----------------------

X 13 CONTANTE GIORNO
-------------------------

## 9. Z MODE

After selecting this mode (2222 + CHIAVE) you have to enter the state pushing 2 digit. Pushing the TOTALE key the print out is issued.

### 9.1. Mode state 01: Daily closure

Z 01 CHIUSURA GIORNALIERA
------------------------------

### 9.2. Mode state 02: daily financial report

Z 02 FINANZIARIO GIORN.
----------------------------

### 9.3. Mode state 03: daily category report

Z 03 MERCEOLOGICI G.
-------------------------

### 9.4. Mode state 04: daily PLU report

Z 04 PLU GIORNALIERI
-------------------------

### 9.5. Mode state 05: daily report by hours

Z 05 ORARIA GIORNAL.
-------------------------

### 9.6. Mode state 06: daily operators report

Z 06 OPER. GIORNALIERI
---------------------------



**9.7. Mode state 07: financial report**

Z 07 FINANZIARIO PER.
--------------------------

**9.8. Mode state 08: category report**

Z 08 MERCEOLOGICI P.
-------------------------

**9.9. Mode state 09: PLU report**

Z 09 PLU PERIODICI
-----------------------

**9.10. Mode state 10: selling report by hour**

Z 10 ORARIA PERIODICA
--------------------------

**9.11. Mode state 11: selling report by operator**

Z 11 OPER. PERIODICI
-------------------------

**9.12. Mode state 12: Print-out of daily closure by number**

Z 12	NUMERO
NUMERO INIZIALE	

Select the starting number daily closure then push TOTALE

Z 12	NUMERO
NUMERO FINALE	

Select the end number of daily closure then push TOTALE

**9.13. Mode state 13: Print-out of daily closure by date**

Z 13	DATA
DATA INIZIALE	

Select the starting date then push TOTALE key

Z 13	DATA
DATA FINALE	

Select the end date + push TOTALE key.

**9.14. Mode state 14: Print-out of daily closure sum of total amount by date**

Z 14	DATA
DATA INIZIALE	

Select starting date then push TOTALE key

Z 14	DATA
DATA FINALE	

Select the end o date then prush TOTALE key.

**9.15. Mode state 15: Print-out of total daily closure saved in fiscal memory**

Z 15	
STAMPA FISCALE	

.

**9.16. Mode state 16: Save in fiscal memory COMPANY NAME**

This operation must be done by authorized technical person.

By means of this operation it is possible to save in fiscal memory the information that will be printed out on the header of fiscal receipt.

To perform this operation the internal jumper must be removed.

Pls contact Epson Italia spa.

**9.17. Mode state 96: Send the content of electronic Journal on serial interface using ASCII protocol**

Z 96 TRASMISSIONE DGFE
---------------------------

Push the ^G key to start the transmission. On the display will be shown ATTENDERE.

**9.18. Mode state 97: Format the DGFE flash memory**

Z 97 FORMATTAZIONE DGFE
----------------------------

Push the ^G key to start the transmission. On the display will be shown ATTENDERE.

Do not switch off the printer during this phase.

**9.19. Mode state 98: Print out the content of DGFE (E/J) between two fiscal receipt number in one particular day.**

Z 98	DATA
DATA	

Select the date then push TOTALE key

Z 98	NUMERO
SCONTRINO INIZIALE	

Select the starting number of fiscal receipt then push TOTALE key

Z 98	NUMERO
SCONTRINO FINALE	

Select the end number of fiscal receipt then push TOTALE key, the printer start printing.

**9.20. Mode state 99: Print out the content of DGFE (E/J) between two date.**

Z 99	DATA
DATA INIZIALE	

Select the starting date then push TOTALE

Z 99	DATA
DATA FINALE	

Select the end date then push TOTALE

## 10. STATO SET

After selecting this mode (3333 + CHIAVE) you have to enter the number of state pushing 2 digit.

### 10.1. Mode state 01: date and time setting.

S 01 DATA/ORA
------------------

To perform this operation you have to arrange in advance a daily closure.  
Select the date and time then push TOTALE key.

### 10.2. Mode state 02: department program.

S 02    N° REP NUMERO REPARTO
----------------------------------

Select the number of department then push TOTALE.  
Enter the department description using ASCII CODE, "X" move the cursor, VOID move back the cursor, <↑S> set the description in the center, 00 repeat last character ASCII code, STORNO cancel the test.

S 02    N° REP    N. CAR.    ASCII* DESCRIZIONE REPARTO
--

Select the price of department.  
Using the numeric keyboard edit the price ( max 9 digit).  
CL to cancel then push TOTALE.

S 02    N° REP    PREZZO    TIPO PREZZO UNITARIO
---

Enable or disable single item or normal receipt

S 02    N° REP    0/1 NO/SI SINGOLO REP.
---

VAT number program (0÷4), CL cancel the value. Then push TOTALE.

S 02    N° REP    TASSA GRUPPO TASSA REP.
--

To program the upper limit of the price in this department, input the value to be set as limit, then TOTALE key.

S 02	N° REP	LIMITE
LIMITE PREZZO		

Enter the printer group if needed then TOTALE

S 02	N° REP	GRUPPO
GRUPPO STAMPA		

Enter the super department if needed, then TOTALE:

S 02	N° REP	N.MERC.
N. MERCEOLOGICO		

Enter the unit for the goods.

S 02	N° REP	UM
UNITA' MISURA		

### 10.3. Mode state 02: PLU program.

S 03	N. PLU
NUMERO	PLU

PLU number start from 1 to 1000.

Pushing the KEY SUBTOTALE, you can get the print-out of the programmed PLU.

Pushing the key TOTALE step by step you can program:

PLU description:

Max 20 characters using the ASCII code of the characters, pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last character entered, the key STORNO cancel all the description.

S 03	N. PLU	N. CAR.	ASCII*
DESCRIZIONE PLU			

Enter the price, to do that use the numerical keys then confirm with TOTALE key.

S 03	N° PLU	PREZZO
PREZZO UNITARIO		TIPO

Department set, select the department from 1 to 40 then push TOTALE

S 03	N° PLU	N° REP.
REPARTO PLU		

BAR CODE set: enter up to 40 character code then push TOTALE.

S 03	N° PLU	N° CAR
CODICE A BARRE		

**10.4. Mode state 04: program discount or surcharge.**

S 04	TASSO
%	SCONTO

Set the percentage for the discount (0÷99.99).

Push key CONTANTE to set the surcharge:

S 04	TASSO
%	MAGG.

**10.5. Mode state 05: VAT program.**

S 05	GR. IVA	VALORE
ALIQUOTA		TASSA

Set the value of the VAT number percentage, then push TOTALE key to select one of the 4 VAT number.

Pushing key SUBTOTALE you can get the print-out of the VAT number programmed.



## 10.6. Mode state 06: currency program.

S 06	N° VAL.
NUMERO VALUTA	

Pushing key SUBTOTALE you can get the print-out of the currency programmed.  
programmed.

Setting step by step the TOTALE key you can program the following:

### Currency description

Used to enter the description (max 2 characters) in ASCII code; pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last character entered, the key STORNO cancel all the description.

S 06	N° VAL	N. CAR.	ASCII*
DESCRIZIONE VALUTA			

Currency exchange rate: set the value then push TOTALE key

S 06	VALORE
VAL.	CAMBIO

## 10.7. Mode state 07: Program the Credit card description

S 07	N°C.CRE.
CARTA CREDITO	

Pushing key SUBTOTALE you can get the print-out of the current description of credit card.

Then select the credit card number and push TOTALE.

Credit card description:

Max 20 characters using the ASCII code of the characters, pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last character you have input, the key STORNO cancel all the description.

S 07	N.C.CRE.	N. CAR.	ASCII*
DESCRIZIONE CARTA DI CREDITO			

Mode state 08: program the category

S 08	N°MERC.
MERCEOLOGICO	

Set the number of category, then push TOTALE key.

Category description:

Max 20 characters using the ASCII code of the characters, pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last character you have input, the key STORNO cancel all the description.

S 08	N.MERC.	N. CAR.	ASCII*
DESCRIZIONE MERCEOLOGICO			

**10.8. Mode state 09: Fixed cash key program**

S 09	VALORE
VALORE CONT.	N.

Set the amount of cash requested (max 9 digit) then push TOTALE to link the fixed key.

**10.9. Mode state 10: Program the tickets**

S 10	N. TICK.
NUMERO	TICKET

Set the number of ticket 1÷10) then TOTALE.

Pushing key SUBTOTALE you can get the print-out of the current description of tickets.

Tickets description:

Max 20 characters using the ASCII code of the characters, pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last charater you have input, the key STORNO cancel all the description.

S 10	N° TICK.	N. CAR.	ASCII*
DESCRIZIONE	TICKET		

**10.10. Mode state 11: Promotion MXn program**

S 11	NUM.	MxN
PROMOZIONE	MxN	

Set the number of M (max 99) then push X to program N (max 989).  
M must be more than N.

**10.11. Mode state 12: PLU direct key program.**

S 12	NUM.	CODICE
COD. PLU DIRETTI		

Set the number of PLU then push TOTALE to confirm.

Pushing key SUBTOTALE you can get the print-out of the current PLU keys.

## 10.12.Mode state 13: Operator program

S 13	N. OP.
N°	OPERATORE

Set the number of operator (1-12) then TOTALE.

Pushing key SUBTOTALE you can get the print-out of the current description of operator.

Set the name of operator:

Max 20 characters using the ASCII code of the characters, pushing key <X> the cursor move forward, the <VOID> key move back the cursor, the key <↑S> set in center the description, the key <00> repeat last charater entered, the key STORNO cancel all the description.

S 13	N° OP.	N. CAR.	ASCII*
NOME OPERATORE			

Set the operator password

Use the numeri keys to set the password (0-9999) then TOTALE.

S 13	N° OP.	CODICE
CODICE OPERATORE		

Sales commission

Using the numerc keys to set the percentage of sales commission. (0-99,99) then TOTALE.

S 13	N° OP.	VAL. %
COMMISSIONE OPER.		

### 10.13. Mode state 14: Fiscal printer setting.

Pushing SUBTOTALE key it is possible to have the current status of the fiscal printer

Pushing the X key you toggle between the status YES or NOT APPENDIMENTO.

If you set yes you can issue fiscal receipt w/o saving in fiscal memory.

The fiscal receipt in APPENDIMENTO are printed out with "?" characters instead of space.

S 14	1	0
NO APPENDIMENTO		

S 14	1	1
SI APPENDIMENTO		

Then push TOTALE to set the possibility to enable the print out of a receipt when the cash drawer is open

Pushing the X key you toggle between the status YES or NOT

S 14	3	0
NO STAMPA CASS.		

S 14	3	1
SI STAMPA CASS.		

Then push TOTALE key to select the use of OPERATOR information

Pushing the X key you toggle between the status YES or NOT

S 14	4	0
NO OPERATORI		

S 14	4	1
SI OPERATORI		

Push the TOTALE key to enter password for operator

Pushing the X key you toggle between the status YES or NOT

S 14	5	0
NO OPER. SEGRETI		

S 14	5	1
SI OPER. SEGRETI		

Push the TOTALE key to enter the possibility to change the operator.  
Pushing the X key you toggle between the status YES or NOT

S 14	6	0
NO RESET OPER.		

S 14	6	1
SI RESET OPER.		

Push the TOTALE key to enter the possibility to print out the operator number on receipt  
Pushing the X key you toggle between the status YES or NOT

S 14	7	0
NO STAMPA OPER.		

S 14	7	1
SI STAMPA OPER.		

Push the TOTALE key to enter the possibility to print out the number of items in the fiscal receipt  
Pushing the X key you toggle between the status YES or NOT

S 14	8	0
NO STAMPA PEZZI		

S 14	8	1
SI STAMPA PEZZI		

Push the TOTALE key to enter the possibility to print out a long or short product code  
Pushing the X key you toggle between the status YES or NOT

S 14	9	0
COD. PROD CORTO		

S 14	9	1
COD. PROD. LUNGO		

Push the TOTALE key to enter the possibility to set the ON LINE or STAND ALONE MODE.  
Pushing the X key you toggle between the status YES or NOT

S 14	10	0
NO PC IN LINEA		

S 14	10	1
SI PC IN LINEA		

Push the TOTALE key to enter the possibility to set mandatory to push SUBTOTAL key before closing the fiscal receipt.

Pushing the X key you toggle between the status YES or NOT

S 14	13	0
NO SUB-TOTALE		

S 14	13	1
SI SUB-TOTALE		

Push the TOTALE key to enter the possibility to print out copy of fiscal receipt.

Pushing the X key you toggle between the status YES or NOT

S 14	14	1
SI RISTAMPA SCON		

S 14	14	0
NO RISTAMPA SCON		

Push the TOTALE key to enter the possibility to select the use of particular barcode

Pushing the X key you toggle between the status YES or NOT

S 14	15	0
BC 2 a CODIF TIPO 1		

S 14	15	1
BC 2 A CODIF TIPO 2		



Push the TOTALE key to enter the possibility to manage different kind of barcode  
Pushing the X key you toggle between the status YES or NOT

S 14	16
BC2 CON CKS INTERM	

S 14	16
BC2 SENZA CKS INTERM	

Push the TOTALE key to enter the possibility to manage different bar code  
Pushing the X key you toggle between the status YES or NOT

S 14	17
BC2 CON DATI DI PESO	

S 14	17
BC2 CON DATI DI Q.TA	

Push the TOTALE key to enter the possibility to enable/disable the SHIFT key  
Pushing the X key you toggle between the status YES or NOT

S 14	18
SI TASTO SHIFT	

S 14	18
NO TASTO SHIFT	

Push the TOTALE key to enter the possibility to enable/disable the STORNO key  
Pushing the X key you toggle between the status YES or NOT

S 14	19
SI TASTO STORNO	

S 14	19
NO TASTO STORNO	

Push the TOTALE key to enter the possibility to enable/disable the RESO key  
Pushing the X key you toggle between the status YES or NOT

S 14	20
SI TASTO RESO	

S 14	20
NO TASTO RESO	

Push the TOTALE key to enter the possibility to enable/disable the VOID key  
Pushing the X key you toggle between the status YES or NOT

S 14	21
SI TASTO ANNULLO	

S 14	21
NO TASTO ANNULLO	

Push the TOTALE key to enter the possibility to enable/disable SCONTO key  
Pushing the X key you toggle between the status YES or NOT

S 14	22
SI TASTO SCONTO	

S 14	22
NO TASTO SCONTO	

Push the TOTALE key to enter the possibility to enable/disable the ABBUONO key  
Pushing the X key you toggle between the status YES or NOT

S 14	23
SI TASTO ABBUONO	

S 14	23
NO TASTO ABBUONO	

Push the TOTALE key to enter the possibility to enable/disable chage currency function  
Pushing the X key you toggle between the status YES or NOT

S 14	24
NO STAMPA VALUTA	

S 14	24
SI STAMPA VALUTA	

Push the TOTALE key to enter the possibility to enable/disable the print out of EURO/LIRE in the fiscal receipt

Pushing the X key you toggle between the status YES or NOT

S 14	25
NO TOTALE EURO/LIRE	

S 14	25
SI TOTALE EURO/LIRE	

**10.14. Mode state 14: Fiscal printer setting (second part)**

Pushing SUBTOTALE key it is possible to have the current status of the fiscal printer

S 15 1 VALORE V. IMPUTAZIONE
---------------------------------

Push the key TOTALE to go through the program steps.

Around: use the numeric key to select the right around (1-999)

S 15 2 VALORE ARROT. IMPORTO
---------------------------------

Percentage around: use the numerical key to set the right value, then TOTALE

S 15 3 VALORE ARROT. %
---------------------------

Currency around: use the numerical key to set the right value, then TOTALE

S 15 4 VALORE ARROT. VALUTA
--------------------------------

Number of retry during transmission to the PC: set the value (1-99) then push TOTALE

S 15 5 VALORE NUM. RITRASMISSIONI
--------------------------------------

Time of the retry: set the value in seconds between one retry and the next one, then push TOTALE.

S 15 6 VALORE TEMPO RITRASMISSIONE
---------------------------------------

Print head intensity level: use X key to set the value, then TOTALE.

S 15 7 VALORE INTENSITA' STAMPANTE
---------------------------------------

Display intensity level use X key to set the value, then TOTALE

S 15 8	VALORE
INTENSITA' VISORE	

Header Graphic logo: select one of the 9 logo pre loaded in flash area, 0 for none.

S 15 9	VALORE
HEADER GRAFICO	

Footer graphic logo: select one of the 9 logo pre loaded in flash area, 0 for none.

S 15 10	VALORE
FOOTER GRAFICO	

Enable paper roll 60 mm: set 1 then TOTALE key to enable the 60 mm paper roll.

S 15 11	VALORE
STAMPA 80/60mm	

**10.15. Mode state 16: program header of fiscal receipt character type.**

S 16	N° RIGA
RIGA NORMALE	

Pushing the TOTALE key you can select the raw and the following kind of character style, use the key X to select the right one:

Riga doppia evidenziata	: double height underline
Riga normale	: normal
Riga evidenziata	: underline
Riga doppia	: double height

**10.16. Mode state 14: Serial communication setting**

Pushing the SUBTOTALE key it is possible to print out the current configuration

S 17	DISPOSITIVO
TIPO CONNESSIONE	

Push X key to select between:

NOT USED  
COMPUTER  
BARCODE READER  
CARD READER

Select the computer then select the baud rate, parity, number of bit and stop bits

Tasto <TOTALE>	Tasto <X>
Baud rate	38400, 19200, 9600, 4800, 2400, 1200
Parità	ODD, EVEN, NONE
Bits dato	7, 8
Stop bits	1, 2

**10.17. Mode state 21: RAM reset**

S 21	PASSW
AZZERA RAM	

Insert the password and reset the non fiscal RAM.

**10.18. Mode state 22: Printer test.**

S 22
TEST STAMPANTE

Every 4 minutes the printer print out a test receipt.

**10.19. Mode state 23: Serial test**

S 23
TEST SER:

Use the loopback connector to do the test

**10.20. Mode state 28: Enable the technical check reminder.**

S 28
VISITA ANNUALE



**10.21. Mode state 29: PS2 configuration.**

S 29          FUNZ.  
FUNZIONE TASTO PS2

Push one key you want to change, then change the code using the below table.  
Push TOTALE key to confirm.

TASTO	CODICE	TASTO	CODICE
0÷9	0÷9	USCITE	107
00	10	%+	108
000	11	%-	109
CL	12	ABBUONO	110
X	13	NON CALCOLA	111
VOID	14	STORNO	112
,	15	TICKET	113
REP1÷REP40	16÷55	SCELTAPREZZO	114
PLU1÷PLU30	56÷85	ULTIMO TOT.	115
CONT1÷CONT5	86÷90	MxN (1)	116
VAL1÷VAL5	91÷95	MxN (2)	117
VALUTA	96	OPERATORE	118
CARTA CRED.	97	VOID TOTALE	119
ASSEGNI	98	NOT USED	120
SUB-TOTALE	99	Cod.PRODOTTO	121
TOTALE	100	SUPERO LIMITE	122
↑S	101	NON USATO	123
↑G	102	NON USATO	124
PLU	103	VISUAL. PROD.	125
PLU-ENTRY	104	TICKET 1÷10	126÷135
RESO	105	COD. CLIENTE	136
ENTRATE	106	COD. FISCALE	137
		CHIAVE SW	138

Code "NESSUNA FUNZIONE" = 999

ASCII\* the ASCII code is the standard ASCII code reduced of the value 32.

Ex:

- To program space " " (ASCII decimal code 32) then use 00
- To program "A" (ASCII decimal code 65) then set 33

## 11. Epson fiscal printer error messages

DISPLAY	CAUSE	POSSIBLE SOLUTION
CARTA SCONTRINO	Receipt roll paper end	Change the roll paper
STAMPANTE OFF-LINE	Mechanism printer is off or OFF LINE	Check the cover, try to switch off and ON again, if error persist call technical support
TASTO ERRATO	A key not valid has been pushed.	Push CL
DATA INFERIORE	The date is lower then permitted value.	Push CL and try again
DATA ERRATA	Error during the program of the date	Push CL and try again
SEQUENZA ERRATA	During setting a sequence not valid happened	Push CL and try again
DATI INESISTENTI	A not existing parameter has been selected	Push CL and try again
VALORE ERRATO	A value out of range has been selected	Push CL and try again
<b>PROGR. MATRICOLA</b>	<b>Fiscal printer not valid</b>	<b>CALL SERVICE CENTER</b>
GIA' ESISTENTE	A value already existing has been try to be set.	Push CL and try again
NON PREVISTO	Try to use a function non existing	Push CL and try again
I IMPOSSIBILE ORA	Try to set a parameter that can not be done at the moment.	Push CL and try again ( may be with daily closure)
NON POSSIBILE	A function not available has been selected	Push CL and try again
SCRITTA INVALIDA	Not valid character has been used	Push CL and try again
SUPERA VALORE	A amount over the limit	Push CL and try again
SUPERA LIMITE	A parameters over the limit	Push CL and try again
NON PROGRAMMATO	Try to use a function not enabled	Push CL and try again
CHIUDI SCONTRINO	Max number of items reached	Push CL and Close the receipt using TOTALE or other payments
	Over the limit of fiscal	Push CL and try again

CHIUDI PAGAMENTO	amount	
MANCA OPERATORE	The operator has not been set	Push CL and try again
CASSA INFERIORE	A not valid value set	Push CL and check the money
OLTRE PROGRAMMAZ	Try to use a department over the limit set	Push CL and try again
PC NON CONNESSO	PC communication error	Push CL and check the communication with the computer
CHECKSUM ERRATO	Communication error, check sum error	Push CL and check the communication with the PC
DATI INESISTENTI PC	In MASTER MODE the computer has not the ITEM in the data base	Push CL and try again
D.G.F.E ASSENTE	Flash memory non insert	Push CL and check the MMC card
D.G.F.E DA FORMATTARE	The flash memory is new	Select the right operation to format the memory ( SET 96)
D.G.F.E PROSSIMO ESAURIENDO	MMC close to be full	Prepare a new MMC
D.G.F.E ESAURITO	Flash memory FULL	Change MMC
D.G.F.E DI ALTRO M.F:	MMC of other fiscal receipt	Check the right MMC for your printer
D.G.F.E ERRORE XXXXXXXX	Error Flash memory (E/J)	Contact EPSON ITALIA

## 12. How to use the Epson Fiscal Printer using serial interface

It is recommended to use the ActiveX driver in order to communicate with the fiscal printer.

You can download from our web site the last version.

The ActiveX control works in synchronous way, the application program that use this control must wait that the control close the communication with the printer before going on.

The returned value from the fiscal printer relating last command received is available in the propriety called "LAST".

The methods relating the fiscal printer use the prefix "op". Each methods implement a single command managed from the printer.

The input parameters of the methods are defined with the following type:

- **String:** used for all the description
- **Integer:** used for all the value up to 32.767
- **Long:** used for all the value up to 2.147.483.647
- **Single:** used for all the decimal value, not used in the currency ratio.
- **Double:** used in the currency ratio for exchange the currency
- **Currency:** used for all the figures relating money.
- **Date:** use for the date, the single items (day, year etc.) are used as integer.

Relating the Currency, this activeX is able to format automatically the field to send to the printer, this is done using the propriety **EuroSetting, this propriety MUST BE SET.**

*This control does not manage the communication retry, in case of communication error it returns back an ERROR.*

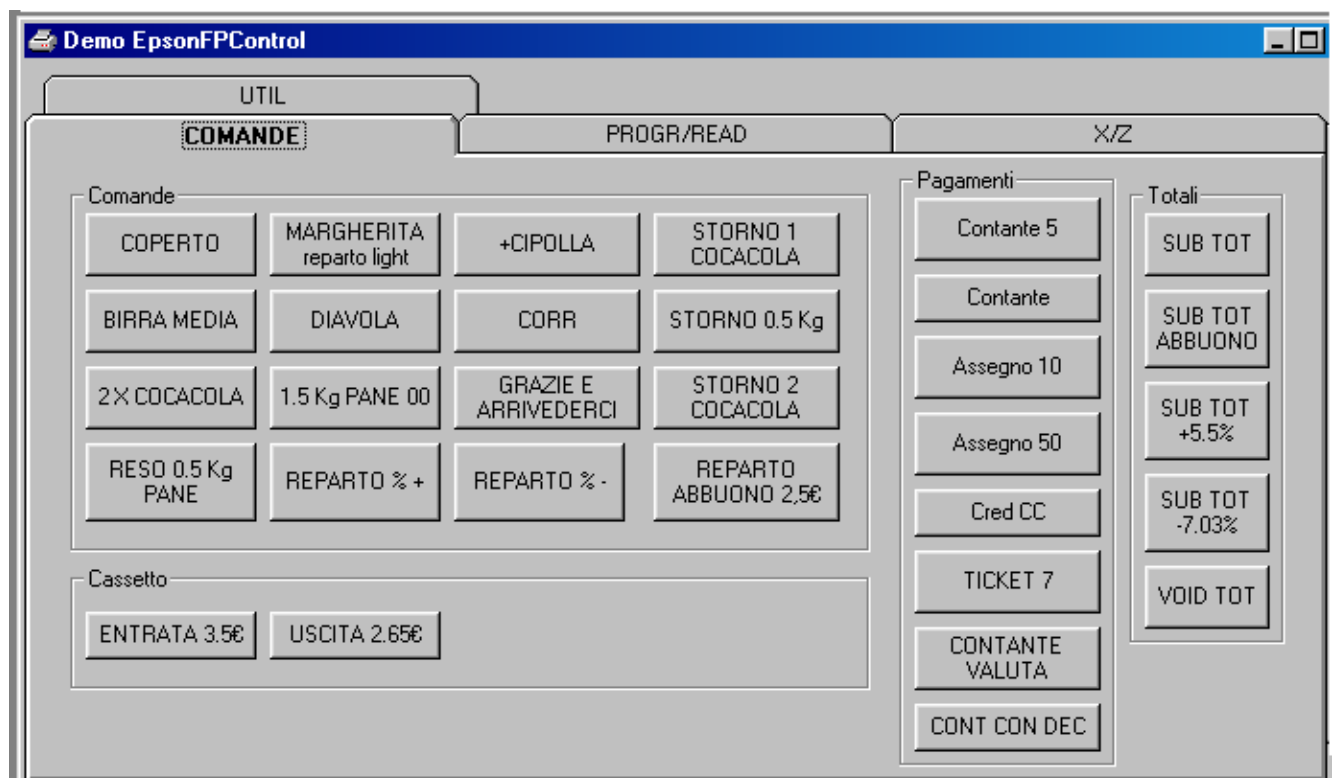
## 12.1. DEMO PROGRAM

Use the CLIENT DEBUG EPSON program to understand how to use this driver.

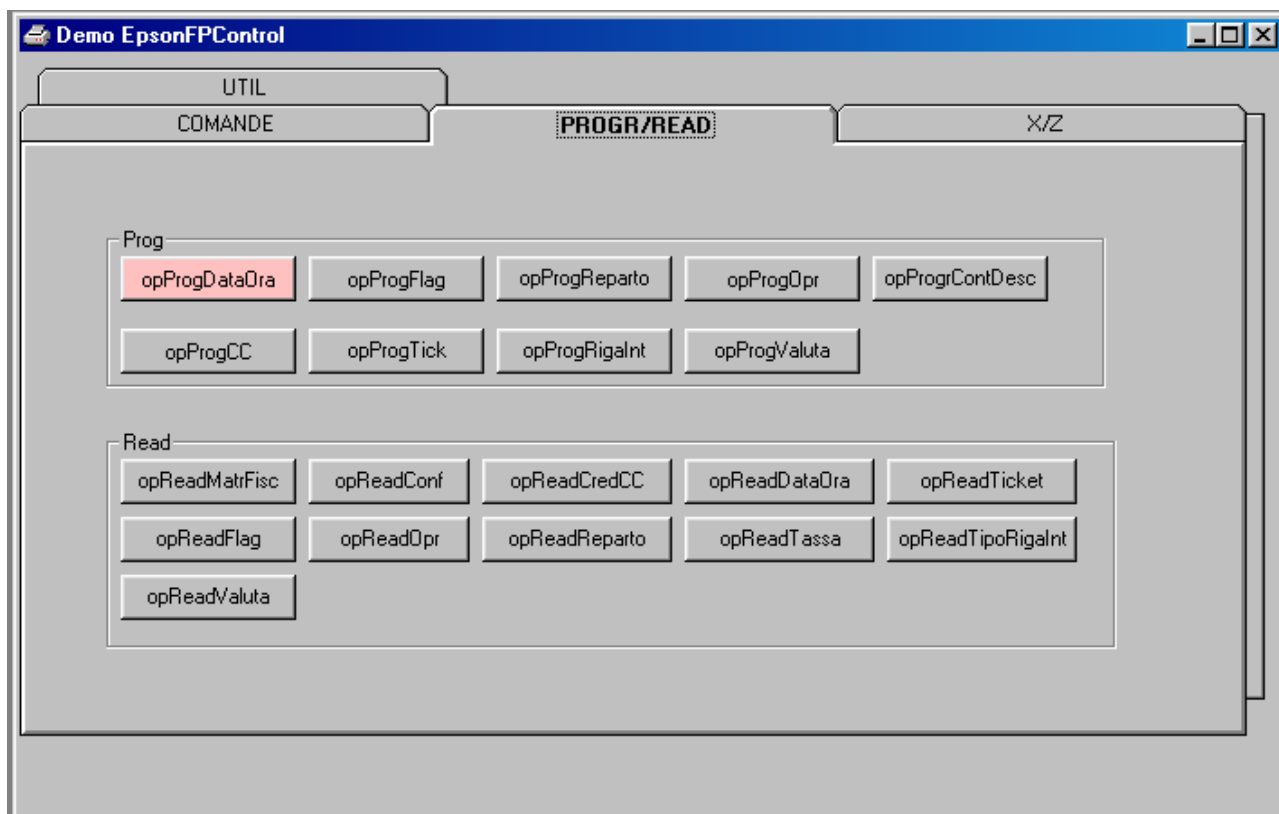
This demo program is provided with source code and give you a demo how to use this activeX. This demo program simulate a restaurant (PIZZERIA) demo.

There are 4 sheets:

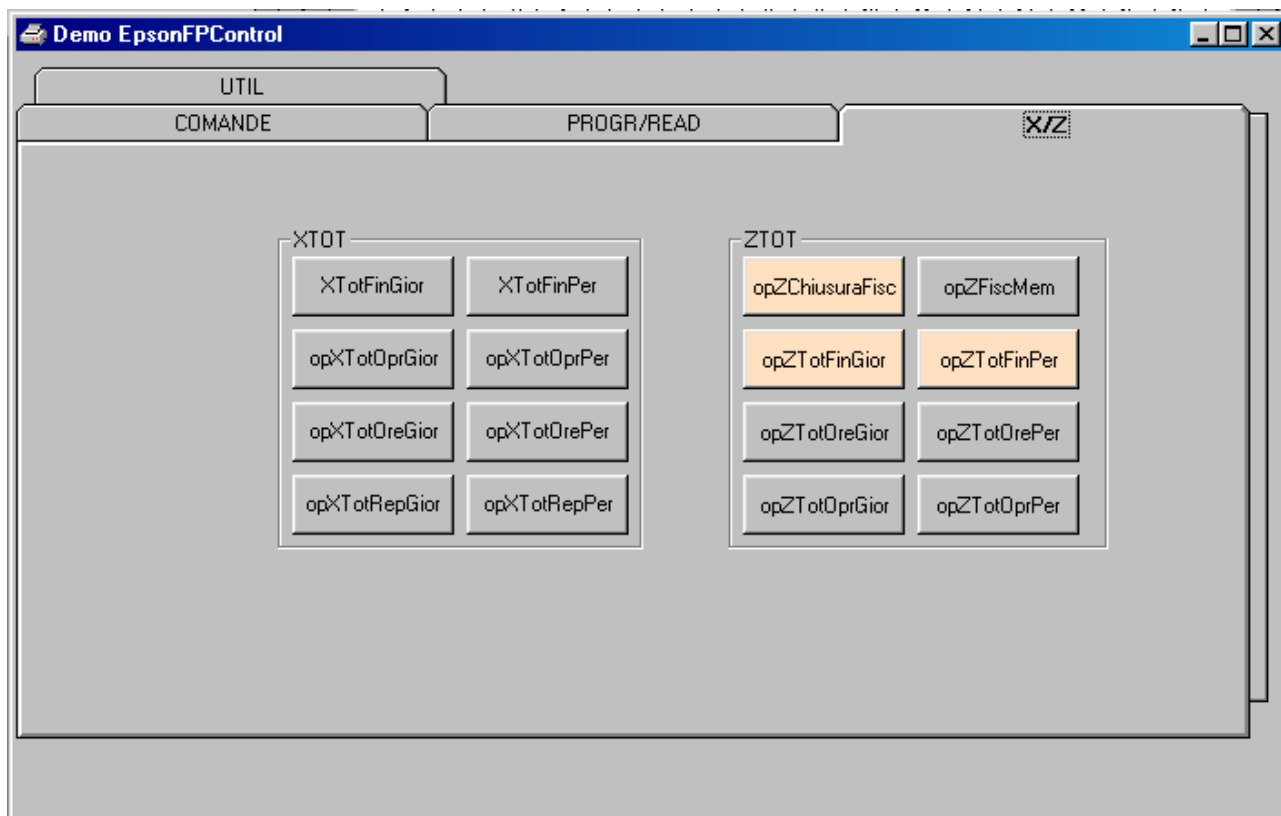
- 1<sup>st</sup> sheet:
  - COMANDE: to sell ITEM (ex. MARGHERITA PIZZA)
  - PAGAMENTI: Payments (Contante: cash – assegno: CHECK)
  - TOTALI: total amount



- 2<sup>nd</sup> sheet: there are 3 areas:
  - PROG: to program parameters
    - OpProgDataOra: use to program the time and date
  - READ: to read the parameters

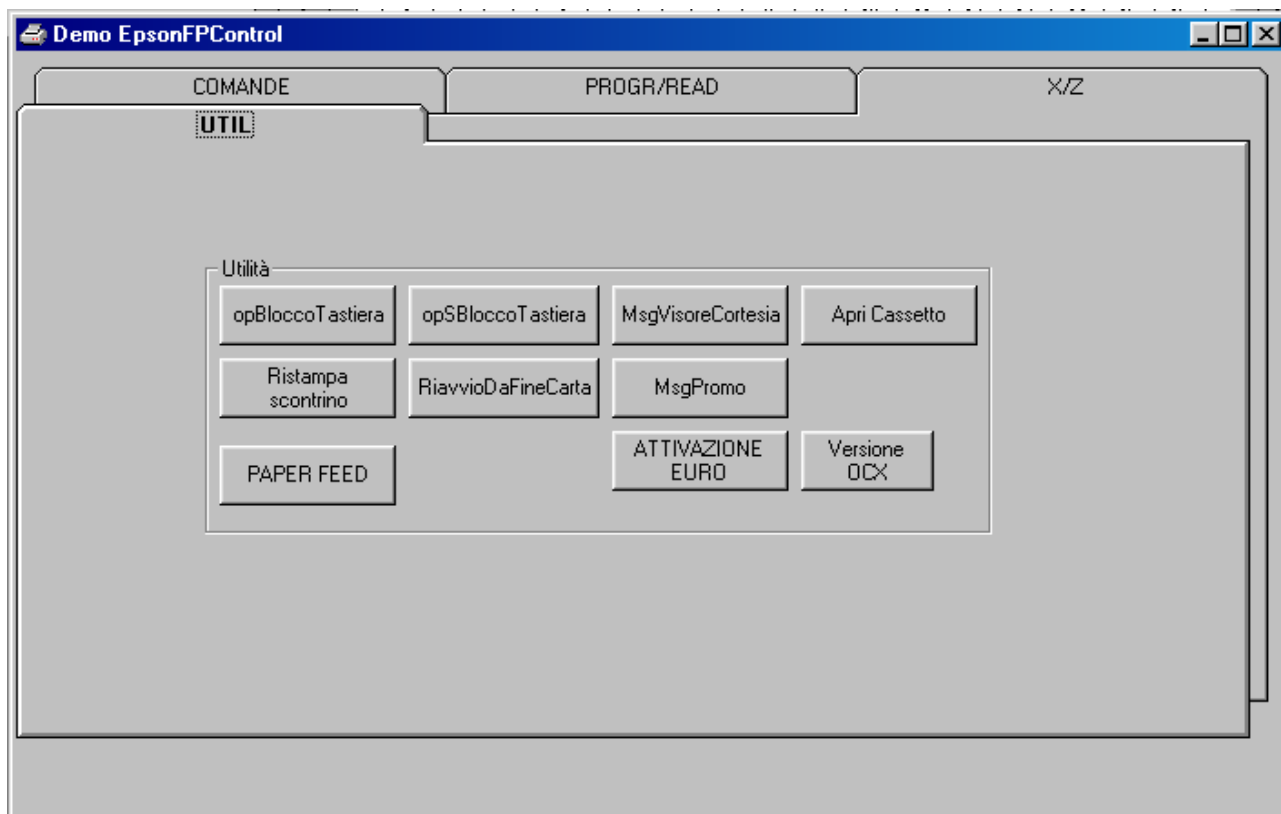


- 3rd sheet: this sheet is arranged to simulate the two states X and Z
  - XTOT: used to get reports X
  - ZTOT: used to arrange the Z report, the most important METHOD is the opZChiusuraFisc: daily closure



4<sup>th</sup> sheet: to demo some UTILITY functions like:

- RistampaScontrino: print copy of last receipt
- MsgPromo: to send characters to the display





## 12.2. Minimum methods to be implemented

Minimum methods that should be integrated in your application program.

- PortOpen()
- PortClose
- OpRepart() : use to sell items
- OpRepartoLight(): same as opReparto() but much faster (no Optional parameter)
- OpRepartoReso() : use to return back the goods
- OpReaprttoStorno(): use to cancel items in the current fiscal receipt
- OpRepartoVoid(): use to cancel last item issue
- OpContante(): use for close the receipt with payment cash
- OpZChiusuraFiscale(): daily closure
- OpProgDataOra(): use to program date and time

## 12.3. How to use a method

To use a method like opReparto() used to sell items, an example is in Visual Basic is:

```
Private Sub CmdOpReparto2_Click()  
    Dim risOpReparto As EpsonFP2.enumEPS_OP_RETVALUE  
    risOpReparto = EpsonFPControl1.opReparto(1, "PIZZA", 0.77, 1)  
    If risOpReparto = OP_OK Then  
        Debug.Print "opReparto OK"  
    Else  
        Debug.Print "opReparto PROBLEMI"  
    End If  
End Sub
```

Parameters of opReparto method:

- 1 : Number of operator
- "PIZZA" : what you are selling
- 0,77 : Price
- 1 : Department store

#### **12.4. How to print out a receipt**

There are two steps to print out a simple receipt for example a PIZZA

1 – EpsonFPControl1.opReparto(1, "PIZZA", 0.77, 1)    TO SELL THE PIZZA  
2 - EpsonFPControl1.opContante(1)                      TO PAY CASH

#### **12.5. How to perform a daily closure**

To arrange a daily closure use this method:

EpsonFPControl1.opZChiusuraFisc(1)

### **13. VAT**

In Italy several VATs are available the most common VAT is 20%.

In case of fiscal cash register or fiscal printer it is not needed to save VAT amount from total Amount.

When you sell goods you have to specify the PRICE included the VAT and sell the item.

In case you want to separated the goods with different VAT we suggest to use the DEPARTMENT (REPARTI) to sell products with different VAT.

## APPENDIX A Keyboard layout

### 32 Keyboard PS2 interface

<b>VOID</b>	<b>STORNO</b>	<b>RESO</b>	<b>ALL VOID</b>
<b>SCONTO %</b>	<b>SCONTO</b>	<b>MAGG. %</b>	<b>PLU</b>
<b>7 P R S</b>	<b>8 T U V</b>	<b>9 W X Y</b>	<b>NON RISC.</b>
<b>4 G H I</b>	<b>5 J K L</b>	<b>6 M N</b>	<b>CARTA DI CRED.</b>
<b>1</b>	<b>2 A B C</b>	<b>3 D E F</b>	<b>CRED.</b>
<b>0 O Q Z</b>	<b>00</b>	<b>,</b>	<b>ASSEGNI</b>
<b>CL</b>	<b>X</b>	<b>REP.</b>	<b>SUB- TOTALE</b>
<b>↑S</b>	<b>↑G</b>	<b>CHIAVE</b>	<b>TOTALE</b>

**APPENDIX B Cross reference between PC keyboard and 32 keys keyboard**

<b>32 keyboard</b>				<b>PC keyboard</b>			
<b>VOID</b>	<b>STORNO</b>	<b>RESO</b>	<b>ALL VOID</b>	<b>F1</b>	<b>F2</b>	<b>F3</b>	<b>F4</b>
<b>SCONTO %</b>	<b>SCONTO A VALORE</b>	<b>MAGG. %</b>	<b>PLU</b>	<b>F5</b>	<b>F6</b>	<b>F7</b>	<b>F8</b>
<b>7</b>	<b>8</b>	<b>9</b>	<b>IMPORTI NON RISCOSSI</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>F9</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>CARTA DI CREDITO</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>F10</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>CREDITO</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>F11</b>
<b>0</b>	<b>00</b>	<b>,</b>	<b>ASSEGNI</b>	<b>0</b>	<b>/</b>	<b>,</b>	<b>F12</b>
<b>CL</b>	<b>X</b>	<b>REP.</b>	<b>SUB- TOTALE</b>	<b>CANC</b>	<b>*</b>	<b>-</b>	<b>+</b>
<b>^S</b>	<b>^G</b>	<b>CHIAVE</b>	<b>TOTALE</b>	<b>S</b>	<b>G</b>	<b>C</b>	<b>INVIO</b>

**APPENDIX C Keyboard code**

Code	Character	Code	Carattere	Code	Character	Code	Character	Code	Character
<b>00</b>	SPAZIO	<b>19</b>	3	<b>38</b>	F	<b>57</b>	Y	<b>76</b>	l
<b>01</b>	!	<b>20</b>	4	<b>39</b>	G	<b>58</b>	Z	<b>77</b>	m
<b>02</b>	“	<b>21</b>	5	<b>40</b>	H	<b>59</b>	[	<b>78</b>	n
<b>03</b>	#	<b>22</b>	6	<b>41</b>	I	<b>60</b>	\	<b>79</b>	o
<b>04</b>	\$	<b>23</b>	7	<b>42</b>	J	<b>61</b>	]	<b>80</b>	p
<b>05</b>	%	<b>24</b>	8	<b>43</b>	K	<b>62</b>	^	<b>81</b>	q
<b>06</b>	&	<b>25</b>	9	<b>44</b>	L	<b>63</b>	_	<b>82</b>	r
<b>07</b>	‘	<b>26</b>	:	<b>45</b>	M	<b>64</b>	`	<b>83</b>	s
<b>08</b>	(	<b>27</b>	;	<b>46</b>	N	<b>65</b>	a	<b>84</b>	t
<b>09</b>	)	<b>28</b>	<	<b>47</b>	O	<b>66</b>	b	<b>85</b>	u
<b>10</b>	*	<b>29</b>	=	<b>48</b>	P	<b>67</b>	c	<b>86</b>	v
<b>11</b>	+	<b>30</b>	>	<b>49</b>	Q	<b>68</b>	d	<b>87</b>	w
<b>12</b>	,	<b>31</b>	?	<b>50</b>	R	<b>69</b>	e	<b>88</b>	x
<b>13</b>	-	<b>32</b>	@	<b>51</b>	S	<b>70</b>	f	<b>89</b>	y
<b>14</b>	.	<b>33</b>	A	<b>52</b>	T	<b>71</b>	g	<b>90</b>	z
<b>15</b>	/	<b>34</b>	B	<b>53</b>	U	<b>72</b>	h		
<b>16</b>	0	<b>35</b>	C	<b>54</b>	V	<b>73</b>	i		
<b>17</b>	1	<b>36</b>	D	<b>55</b>	W	<b>74</b>	j		
<b>18</b>	2	<b>37</b>	E	<b>56</b>	X	<b>75</b>	k		

## APPENDIX D: Interface signal

### Fiscal Board: PC

Pin-out of the serial port for host connection based on 6 pins RJ11 female connector:

Pin	Description
2	Receive data
3	Transmit data
1	Ground
5	Request to send
6	Clear to send

### Fiscal Board: PS2 interface

The PS2 is controlled by a interface that reduce the voltage level of the Keyboard from 5 V to 3.3 Volt.

IN order to provide the 5 Volt to the keyboard an step-down is used to reduce the voltage from 24 Volt to 5 Volt @100 mA.

The keyboard connector is a standard PS2 connector like the FP260 one

#### PS/2 KEYBOARD 6 PIN MINI-DIN FEMALE CONNECTOR

	PIN	SIGNAL
6 H 5	1 -----	DATA
4    3	2 -----	not used
2   1	3 -----	GND
	4 -----	+5V
	5 -----	CLK
	6 -----	not used