EPSON®
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FISCAL PRINTER

UPOS DRIVER USER GUIDE

REVISION HISTORY

Rev	Sheet	Comment	Date	Author
Preliminary		First edition	June, 29th 2006	C.Radaelli
B	Pos for .net	Change picture	September, 9 2006	C.Radaelli
C	All	Update to V29	October, 7th 2007	C.Radaelli
D	All	Update to V30	November, 4th 2007	CR
E	All	Update to V37	June, 3 2009	S.Ravasi
F	All	Update to V50	March, 8 2011	S.Ravasi
G	All	Update to V670	Dec, 03 2012	S.Ravasi
H	All	Update to V680	Feb, 01 2013	S.Ravasi
I	All	Update to V700	May, 15 2013	S.Ravasi
J	All	Update to V815	Jan, 10 2019	S.Ravasi

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1   Overview

This document describes the Epson drivers based on UPOS standard.
The drivers available for fiscal printers are:

- JAVA POS driver
- POS for .net driver
- OPOS driver

Both drivers implement the following classes:

- line-display
- cash-drawer
- fiscal-printer
- electronic-journal

Epson fiscal printer driver project is based on a common source code which generates different output: Java-POS driver, POS for .net driver and OPOS driver.

2   Capability

The driver is compliant to the standard UPOS ver. 1.13 for the 4 classes supported with the following capability:

General

CapPowerReporting	TRUE = PR_STANDARD (from V28)
CapStatisticsReporting	FALSE
CapUpdateStatistics	FALSE

Notes from V28:

CapPowerReporting = PR_STANDARD (only for FiscalPrinter)

PowerNotify = it is possible to set only for FiscalPrinter, this is possible because CapPowerReporting = PR_STANDARD

PowerState = it can be:
   PS_UNKNOWN (if FiscalPrinter is disabled or if PowerNotify is PN_DISABLED),
   PS_ONLINE (if FiscalPrinter is enabled, if PowerNotify is PN_ENABLED and if the printer does not reply to the polling)
   PS_OFF_OFFLINE (if FiscalPrinter is enabled, if PowerNotify is PN_ENABLED and if the printer does not reply to the polling).

StatusUpdateEvent = added the following events: SUE_POWER_ONLINE and SUE_POWER_OFF_OFFLINE (only for FiscalPrinter)

line-display

BlinkRate	ILLEGAL
CapBitmap	FALSE
CapBlink	NO-BLINK
CapBlinkRate	FALSE
CapBrightness	FALSE
CapCharacterSet	ASCII
CapCursorType	NONE
CapCustomGlyph	FALSE
CapDescriptors	FALSE
CapHMarquee	FALSE
CapICharWait	FALSE
CapMapCharacterSet	FALSE
CapReadBack	NONE
CapReverse	NONE
CapScreenMode	FALSE
CapVMarquee	FALSE
CharacterSet	ASCII
CharacterSetList	"998"
Columns	20
CurrentWindow	0
CursorColumn	
CursorRow	
CursorType	
CursorUpdate	
CustomGlyphList	ILLEGAL
DeviceBrightness	100
DeviceColumns	20
DeviceDescriptors	0
DeviceRows	2
DeviceWindows	0
GlyphHeight	ILLEGAL
GlyphWidth	ILLEGAL
InterCharacterWait	0
MapCharacterSet	FALSE
MarqueeFormat	0
MarqueeRepeatWait	0
MarqueeType	NONE
MarqueeUnitWait	0
MaximumX	0
MaximumY	0
Rows	2
ScreenMode	0

ScreenModeList	"2x20"

cash-drawer

CapStatus	xml[1]
CapStatusMultiDrawerDetect	FALSE
DrawerOpened	

fiscal-printer

ActualCurrency	EUR
AdditionalHeader	
AdditionalTrailer	
AmountDecimalPlaces	4
AsyncMode	FALSE
CapAdditionalHeader	TRUE
CapAdditionaLines	auto[2]
CapAdditionalTrailer	TRUE
CapAmountAdjustment	TRUE
CapAmountNotPaid	TRUE
CapChangeDue	FALSE
CapCheckTotal	auto[3]
CapCoverSensor	FALSE
CapDoubleWidth	TRUE
CapDuplicateReceipt	FALSE
CapEmptyReceiptVoidable	TRUE
CapFiscalReceiptStation	TRUE
CapFiscalReceiptType	TRUE
CapFixedOutput	FALSE
CapHasVatTable	TRUE
CapIndipendentHeader	TRUE
CapItemList	FALSE
CapJrnEmptySensor	TRUE
CapJrnNearEndSensor	TRUE
CapJrnPresent	TRUE
CapMultiContractor	FALSE
CapNonFiscalMode	TRUE
CapOnlyVoidLastItem	TRUE
CapOrderAdjustmentFirst	FALSE
CapPackageAdjustment	FALSE
CapPercentAdjustment	FALSE
CapPositiveAdjustment	auto
CapPositiveSubtotalAdjustment	auto

---

[1] Setting on the file jpos.XML: TRUE/FALSE

[2] Depending on the firmware of FP90, available for the new FP90II, FP90III, FP81, FP81II:TRUE/FALSE

[3] Depending on the firmware of FP90, available for the new FP90II, FP90III, FP81, FP81II:TRUE/FALSE

CapPostPreLine	TRUE
CapPowerLossReport	FALSE
CapPredefinedPaymentLines	xml[4]
CapReceiptNotPaid	TRUE
CapRecEmptySensor	TRUE
CapRecNearEndSensor	TRUE
CapRecPresent	TRUE
CapRemainingFiscalMemory	TRUE
CapReservedWord	TRUE
CapSetCurrency	FALSE
CapSetHeader	TRUE
CapSetPOSID	TRUE
CapSetStoreFiscalID	FALSE
CapSetTrailer	TRUE
CapSetVatTable	TRUE
CapSlpEmptySensor	auto
CapSlpFiscalDocument	auto
CapSlpFullSlip	auto
CapSlpNearEndSensor	auto
CapSlpPresent	auto
CapSlpValidation	FALSE
CapSubAmountAdjustment	TRUE
CapSubPercentAdjustment	FALSE
CapSubtotal	auto[5]
CapTotalizerType	TRUE
CapTrainingMode	TRUE
CapValidateJournal	FALSE
CapXReport	TRUE
ChangeDue	ILLEGAL
CheckTotal	auto
ContractorId	0
CountryCode	ITALY
CoverOpen	
DateType	RTC
DayOpened	
DescriptionLenght	32/38
DuplicateReceipt	FALSE
ErrorLevel	NONE
ErrorOutID	0
ErrorState	0
ErrorStation	ILLEGAL
ErrorString	ILLEGAL

[4] Setting on the file jpos.XML: TRUE/FALSE
[5] Depending on the firmware of FP90, available for the new FP90II, FP90III, FP81, FP81II:TRUE/FALSE

FiscalReceiptStation	RECEIPT
FiscalReceiptType	
FlagWhenIdle	
JrnEmpty	
JrnNearEnd	
MessageLength	40/46
MessageType	FREE_TEXT
NumHeaderLines	6
NumTrailerLines	99
NumVatRates40/46	4/9
PostLine	
PredefinedPaymentLines	"0,1,2,3"
PreLine	
PrinterState	
QuantityDecimalPlaces	3
QuantityLenght	7
RecEmpty	
RecNearEnd	
RemainingFiscalMemory	
ReservedWord	"TOTALE"
SlpEmpty	
SlpNearEnd	
SlipSelection	FULL_LENGTH
TotalizerType	
TrainingModeActive	

Driver is able to manage characters in ASCII (from decimal code 32 to 127).

electronic-journal

AsyncMode	FALSE
CapAddMarker	FALSE
CapErasableMedium	FALSE
CapInitializeMedium	TRUE
CapMediumIsAvailable	TRUE
CapPrintContent	TRUE
CapPrintContentFile	FALSE
CapRetrieveCurrentMarker	FALSE
CapRetrieveMarker	FALSE
CapRetrieveMarkerByDateTime	TRUE
CapRetrieveMarkersDateTime	FALSE
CapStation	RECEIPT
CapStorageEnabled	FALSE
CapSuspendPrintContent	FALSE
CapSuspendQueryContent	FALSE

CapWaterMark	FALSE
FlagWhenIdle	FALSE
MediumFreeSpace	
MediumID	
MediumIsAvailable	
MediumSize	
Station	RECEIPT
StorageEnabled	TRUE
Suspended	FALSE
WaterMark	FALSE

3 Methods

The driver is compliant to the standard UPOS ver. 1.13 for the 4 classes supported with the following methods:

line-display

ClearDescriptors	ILLEGAL
ClearText	
CreateWindow	ILLEGAL
DefineGlyph	ILLEGAL
DestroyWindow	ILLEGAL
DisplayBitmap	ILLEGAL
DisplayText	
DisplayTextAt	
ReadCharacterAtCursor	ILLEGAL
RefreshWindow	ILLEGAL
ScrollText	ILLEGAL
SetBitmap	ILLEGAL
SetDescriptor	ILLEGAL

cash-drawer

OpenDrawer	
WaitForDrawerClose	

fiscal-printer

BeginFiscalDocument	
BeginFiscalReceipt	
BeginFixedOutput	ILLEGAL
BeginInsertion	
BeginItemList	ILLEGAL
BeginNonFiscal	
BeginRemoval	
BeginTraining	
ClearError	
EndFiscalDocument	
EndFiscalReceipt	
EndFixedOutput	ILLEGAL
EndInsertion	
EndItemList	ILLEGAL
EndNonFiscal	
EndRemoval	
EndTraining	
GetData	

GetDate	
GetTotalizer	
GetVatEntry	
PrintDuplicateReceipt	ILLEGAL
PrintFiscalDocumentLine	
PrintFixedOutput	ILLEGAL
PrintNormal	
PrintPeriodicTotalsReport	
PrintPowerLossReport	ILLEGAL
PrintRecCash	ILLEGAL
PrintRecItem	
PrintRecItemAdjustment	
PrintRecItemAdjustmentVoid	
PrintRecItemFuel	ILLEGAL
PrintRecItemFuelVoid	ILLEGAL
PrintRecItemRefund	
PrintRecItemRefundVoid	
PrintRecItemVoid	
PrintRecMessage	
PrintRecNotPaid	
PrintRecPackageAdjustment	ILLEGAL
PrintRecPackageAdjustVoid	ILLEGAL
PrintRecRefund	
PrintRecRefundVoid	
PrintRecSubtotal	
PrintRecSubtotalAdjustment	
PrintRecSubtotalAdjustVoid	
PrintRecTaxID	ILLEGAL
PrintRecTotal	
PrintRecVoid	
PrintRecVoidItem	
PrintReport	
PrintXReport	
PrintZReport	
ResetPrinter	
SetCurrency	ILLEGAL
SetDate	
SetHeaderLine	
SetPOSID	
SetStoreFiscalID	ILLEGAL
SetTrailerLine	
SetVatTable	
SetVatValue	
VerifyItem	ILLEGAL

electronic-journal

AddMarker	ILLEGAL
CancelPrintContent	ILLEGAL
CancelQueryContent	ILLEGAL
EraseMedium	ILLEGAL
InitializeMedium	
PrintContent	
PrintContentFile	ILLEGAL
QueryContent	
ResumePrintContent	ILLEGAL
ResumeQueryContent	ILLEGAL
RetrieveCurrentMarker	ILLEGAL
RetrieveMarker	ILLEGAL
RetrieveMarkerByDateTime	
RetrieveMarkersDateTime	ILLEGAL
SuspendPrintContent	ILLEGAL
SuspendQueryContent	ILLEGAL

4 Configuration file

Both driver Java POS, POS for .net and OPOS need the configuration file called jpos.XML.
Following is reported the setting which has to be defined in the configuration file.

```
<JposEntries>
  <JposEntry logicalName="linedisplay.0">
    <creation factoryClass="epson.epsonServiceInstanceFactory"
serviceClass="epson.lineDisplay.lineDisplayService" />
    <vendor name="Epson" url="http://www.epson.it" />
    <jpos category="LineDisplay" version="1.11" />
    <product description="Line Display" name="Epson LineDisplay" url="" />
    <prop name="portType" type="String" value="C" />
    <prop name="port" type="String" value="COM1" />
    <prop name="baudrate" type="String" value="57600" />
    <prop name="parity" type="String" value="none" />
    <prop name="bits" type="String" value="8" />
    <prop name="stopbits" type="String" value="1" />
    <prop name="usbAddress" type="String" value="0" />
    <prop name="ipAddress" type="String" value="192.168.0.250" />
    <prop name="overridePrinter" type="Boolean" value="false" />
    <prop name="printerCodePage" type="String" value="Cp437" />
    <prop name="debugFileName" type="String" value="LD0_trace.txt" />
    <prop name="debugFileLength" type="String" value="500000" />
  </JposEntry>
  <JposEntry logicalName="cashdrawer.0">
    <creation factoryClass="epson.epsonServiceInstanceFactory"
serviceClass="epson.cashDrawer.cashDrawerService" />
    <vendor name="Epson" url="http://www.epson.it" />
    <jpos category="CashDrawer" version="1.11" />
    <product description="CashDrawer" name="Epson CashDrawer" url="" />
    <prop name="portType" type="String" value="C" />
    <prop name="port" type="String" value="COM1" />
    <prop name="baudrate" type="String" value="57600" />
    <prop name="parity" type="String" value="none" />
    <prop name="bits" type="String" value="8" />
    <prop name="stopbits" type="String" value="1" />
    <prop name="usbAddress" type="String" value="0" />
    <prop name="ipAddress" type="String" value="192.168.0.250" />
    <prop name="capStatus" type="Boolean" value="true" />
    <prop name="autoDrawerOpening" type="Boolean" value="false" />
    <prop name="debugFileName" type="String" value="CD0_trace.txt" />
    <prop name="debugFileLength" type="String" value="500000" />
  </JposEntry>
  <JposEntry logicalName="fiscalprinter.0">
    <creation factoryClass="epson.epsonServiceInstanceFactory"
serviceClass="epson.fiscalPrinter.fiscalPrinterService" />
    <vendor name="Epson" url="http://www.epson.it" />
    <jpos category="FiscalPrinter" version="1.11" />
    <product description="FiscalPrinter" name="Epson FiscalPrinter" url="" />
    <prop name="portType" type="String" value="C" />
    <prop name="port" type="String" value="COM1" />
    <prop name="baudrate" type="String" value="57600" />
    <prop name="parity" type="String" value="none" />
    <prop name="bits" type="String" value="8" />
    <prop name="stopbits" type="String" value="1" />
    <prop name="usbAddress" type="String" value="0" />
    <prop name="ipAddress" type="String" value="192.168.0.250" />
    <prop name="ZDayTotal" type="Boolean" value="true" />
    <prop name="FixedPaymentLine" type="Boolean" value="false" />
    <prop name="pollStatus" type="Boolean" value="true" />
    <prop name="CapAdditionalLines" type="Boolean" value="true" />
    <prop name="CapSubtotal" type="Boolean" value="true" />
    <prop name="cashPOSID" type="String" value="999" />
    <prop name="trailerFileName" type="String" value="trailer.txt" />
    <prop name="printerCodePage" type="String" value="Cp437" />
```

```
        <prop name="countryCode" type="String" value="01" />
        <prop name="ejFileName" type="String" value="" />
        <prop name="fiscalLogo" type="String" value="" />
        <prop name="printQuantityIfOne" type="Boolean" value="false" />
        <prop name="debugFileName" type="String" value="FP0_trace.txt" />
        <prop name="debugCFileName" type="String" value="0_C_trace.txt" />
        <prop name="debugFileLength" type="String" value="5000000" />
    </JposEntry>
    <JposEntry logicalName="electronicjournal.0">
        <creation factoryClass="epson.epsonServiceInstanceFactory"
serviceClass="epson.electronicJournal.electronicJournalService" />
        <vendor name="Epson" url="http://www.epson.it" />
        <jpos category="ElectronicJournal" version="1.11" />
        <product description="ElectronicJournal" name="Epson ElectronicJournal" url="" />
        <prop name="portType" type="String" value="C" />
        <prop name="port" type="String" value="COM1" />
        <prop name="baudrate" type="String" value="57600" />
        <prop name="parity" type="String" value="none" />
        <prop name="bits" type="String" value="8" />
        <prop name="stopbits" type="String" value="1" />
        <prop name="usbAddress" type="String" value="0" />
        <prop name="ipAddress" type="String" value="192.168.0.250" />
        <prop name="pollStatus" type="Boolean" value="true" />
        <prop name="printerCodePage" type="String" value="Cp437" />
        <prop name="debugFileName" type="String" value="EJ0_trace.txt" />
        <prop name="debugFileLength" type="String" value="5000000" />
    </JposEntry>
```

The communication setting parameters must be the same for all the 4 devices (Line display, cash drawer, fiscal printer and electronic journal). All of them share the same serial/usb/tcp interface.

parameter	Possibile setting
portType	"C" (com), "U" (usb), "T" (tcp)
COM	
port	Linux OS: "/dev/ttyS0", "/dev/ttyS1", "/dev/ttyS2", "/dev/ttyS3", "/dev/ttyS4", "/dev/ttyS5" Windows OS "COMx (x is the number of serial port)
baudrate	"1200", "2400", "4800", "9600", "19200", "38400", "57600"
parity	"none", "odd", "even"
bits	"7", "8"
stopbits	"1", "2"
USB	
usbAddress	"0" (automatic detection of first usb address), "1", "2", …
TCP	
ipAddress	The ip address (for ex. "192.168.0.250")

Meaning of the parameters:

service	parameter	value
line-display	*overridePrinter*	*true* = any commands sent to the display from the application software override the message generated from the printer. *false* = Any messages generate from the fiscal printer override the messages coming from the application software.
line-display	*printerCodePage*	Name of the Code Page to use (for ex. "Cp437" = MS_DOS United States,Australia,New Zealand,South Africa - "Cp737" = PC Greek - "Cp866" = PC Georgian)
cash-drawer	*capStatus*	*true* = enable the sensor OPEN/CLOSE in the cash drawer (*CapStatus* = TRUE) *false* = disable the sensor of the cash drawer (*CapStatus* = FALSE)
cash-drawer	*autoDrawerOpening*	*true* = enable the automatic drawer opening *false* = disable the automatic drawer opening
fiscal-printer	*ZDayTotal*	*false* = print the financial report before the daily closure *true* = do not print the financial report before the daily closure
fiscal-printer	*FixedPaymentLine*	false = the method *PrintRecTotal* accepts description in the payment line (*CapPredefinedPaymentLines* = FALSE) true = the method *PrintRecTotal* accepts a reference or a reference+description in the payment line description. The fixed payment line can be 0,1,2,3,4,5,6,000,100,201,202,203,204,301 [6] or 0+descr., 1+descr., 2+descr., 3+descr., 4+descr., 5+descr., 6+descr., 000+descr., 100+descr., 201+descr., 202+descr., 203+descr., 204+descr., 301+descr. for example "3Non riscosso" (*CapPredefinedPaymentLines* = TRUE, *PredefinedPaymentLines* = 0, 1, 2, 3, 4, 5, 6)
fiscal-printer	*pollStatus*	*true* = the driver manage a regular polling to the printer in order to generate event in case of changing of devices status. *false* = the driver does not manage the printer polling.
fiscal-printer	*CapSubtotal*	*true* = the printer is able to print out the SUB-TOTAL (FP90III, FP81II, FP90II, FP81 and FP90 from ver. 2.01). *false* = the printer is not able to print out SUB-TOTAL (only FP90 ver < 2.01). This setting is automatically overwritten based on the real capability of the printer.
fiscal-printer	*CapAdditionalLines*	*true* = the printer is able to manage this capability. *false* = the printer is not able to manage this capability This setting is automatically overwritten based on the real capability of the printer. (FP90III, FP90II,

[6] 0 = CONTANTE, 1 = ASSEGNO, 2 = CARTA di CREDITO, 3 = TICKET, 4 = CREDITO, 5 = ALTRO PAGAMENTO, 6 = BANCOMAT, 000 = CONTANTE, 100 = ASSEGNO, 201 = CARTA di CREDITO, 202 = CREDITO, 203 = ALTRO PAGAMENTO, 204 = BANCOMAT, 301 = TICKET

		FP81II, FP81 and FP90 ver 2.01 is TRUE)
fiscal-printer	*cashPOSID*	Printer ID (001 – 999)
fiscal-printer	*trailerFileName*	Add the name of the file with the complete path
fiscal-printer	*printerCodePage*	Name of the Code Page to use (for ex. "Cp437" = MS_DOS United States,Australia,New Zealand,South Africa - "Cp737" = PC Greek - "Cp866" = PC Georgian)
fiscal-printer	*countryCode*	01 = Italy 02 = Turkey 03 = Greece 04 = Georgia
fiscal-printer	*ejFileName*	Path of the file to save the EJ after a Zreport (only for Greece)
fiscal-printer	*fiscalLogo*	Fiscal Logo (only for Greece)
fiscal-printer	*printQuantityIfOne*	*true* = the driver prints the quantity line (before an item) even if is 1. *false* = the driver does not print the quantity line if is 1.
fiscal-printer	*debugCFileName*	Name of the file with complete path to save the trace dedicated to the C library (from V29)
electronic-journal	*printerCodePage*	Name of the Code Page to use (for ex. "Cp437" = MS_DOS United States,Australia,New Zealand,South Africa - "Cp737" = PC Greek - "Cp866" = PC Georgian)
Electronic journal	*pollStatus*	*true* = the driver manage a regular polling to the printer in order to generate event in case of changing of devices status. *false* = the driver does not manage the printer polling.
ALL	*debugFileName*	Name of the file with complete path to save the trace (from V29)
ALL	*debugFileLength*	Size of the file used for the trace (from V29)

5 Limitation of the driver

Service	method/property	limitation
line-display cash-drawer fiscal-printer electronic-journal	*CheckHealth*	No control is done on the devices
line-display cash-drawer fiscal-printer electronic-journal	*CheckHealthText*	Return a fixed string
line-display	*DeviceBrightness*	Set does not works
fiscal-printer	*FiscalReceiptStation*	Available only RECEIPT
fiscal-printer	*FiscalReceiptType*	Available only SALES and REFUND
fiscal-printer	*AdditionaHeader*	The content of the string is lost to the first fiscal closure following the property setting. From V28 the lines are up to 9.
fiscal-printer	*AdditionalTrailer*	The content of the string is lost to the first fiscal closure following the property setting. The lines are up to 99.
fiscal-printer	*SetTrailerLine*	The lines are lost following the closure of the driver. From V28 the lines are saved in a txt file. To define the file set the JPOS.XML file in the property: "trailerFileName". If it is not needed to save the file, pls leave empty this property in the JPOS.XML file.
fiscal-printer	*BeginFiscalReceipt*	The *print-header* parameter is not used
fiscal-printer	*EndFiscalReceipt*	The *print-header* parameter is not used
fiscal-printer	*PrintRecItem*	The *price* parameter is not used if the unit price is different from NULL (the amount is computed from the fiscal printer multiplying the unit price and the quantity)
fiscal-printer	*PrintRecVoidItem*	The *adjustment* and *adjustment-type* are not used
fiscal-printer	*PrintRecTotal*	The *total* parameter is not used (amount is computed from the

		printer) if the option check-total is not enabled.
fiscal-printer	*PrintRecSubtotal*	The *amount* parameter is not used (the amount is computed from the printer) if the option check-total is not enabled.
fiscal-printer	*PrintNormal*	The *station* parameter must be set to RECEIPT
fiscal-printer	*GetData*	The following parameters are managed: FIRMWARE, PRINTER-ID, CURRENT_TOTAL, DAILY_TOTAL, GRAND_TOTAL, MID_VOID, RECEIPT_NUMBER, REFUND, FISCAL_REC, FISCAL_REC_VOID, NONFISCAL_REC, Z_REPORT, FISCAL_DOC, FISCAL_DOC_VOID, DESCRIPTION_LENGTH, NOT_PAID
fiscal-printer	*GetDate* *DateType*	The property *date-type* can be set to the value RTC
fiscal-printer	*GetTotalizer* *TotalizerType*	The property *totalizer-type* can be set to the value GRAND and DAY. The parameter *opt-args* can be set to the value ITEM, DISCOUNT, REFUND, ITEM_VOID, GROSS, NET
fiscal-printer	*SetPOSID*	The two parameters can be input up to 3 chars for each one, from 000 to 999. Set to 0 to disable.

6 How to use *Direct-IO*

The method *direct-IO* gives to the application software the possibility to use the native commands of the fiscal printer.

Using the *direct-IO* method can generate problem to the UPOS driver, the status of the printer can be changed without the control of the driver.

To use the *direct-IO* method please refer to the Fiscal Printer communication protocol.

parameter	input	output
command	0	-
data	4 figures: first figure represent the H1 parameter while the other remaining 3 figures represent the parameter H2 (see the PDU protocol)	4 figures: first figure represent the H1 parameter while the other remaining 3 figures represent the parameter H2 (see the PDU protocol). The value 0 represent an ERROR.
obj	String to send to the printer	String with the reply from the printer, if data = 0 the content of the string give the ERROR CODE.

7   **RT printer specific commands**

RT printers have specific commands for RETURN and VOID receipts, that must be sent using DirectIO().

Below the list of commands to use:
- H1=1; H2=138 – RT status
- H1=9; H2=205 – Check document presence for refund and void receipts
- H1=1; H2=078 – Open return and void receipts
- H1=2; H2=050 – Reading return and void total and grand total

In the installation folder, you can find some examples of using these commands, with source code (see "SAMPLE" folder).

Other RT printers peculiarities:

- CapPredefinedPaymentLines property must be set to TRUE, using the SetupPOS application.
PrintRecTotal "description" parameter must contain the index of one of the fiscal printer's predefined payment descriptions (see note on page 15)

- before printing any fiscal document, it's required to set the VAT table, using SetVatValue and SetVatTable methods

- descriptive lines up to 38 characters are accepted within fiscal receipt, but after the 25th character a line feed is performed by the printer

- the receipt number, "zzzz-nnnn", is composed of:
zzzz = number of daily closures + 1
nnnn = receipt progressive number

8 JAVA POS DRIVER

Java-POS driver (www.javapos.com) has been development for PC environment.

Following is reporting the compatibility environment:

software	version
Linux	red-hat 7.2+ (kernel 2.4+)
Java-POS	1.11
JCL (JPOS Configuration & Loader)	2.2+
JVM (Java Virtual Machine)	Sun JRE 1.5+
firmware FP-90 – any ver. for FP90II, F81, FP90III, FP81II	2.0+

8.1 Java-POS driver Installation and configuration for LINUX

The Java-POS driver for Linux O.S. and for serial Epson fiscal printer needs the following files:

- *libepsonDriver.SO*
- *epsonCashPRJ.JAR*

The file *libepsonDriver.SO* can be copied in any folder of the LINUX OS: it is needed that the path were the *libepsonDriver.SO* has been saved must be assigned to the environment variable using LD_LIBRARY_PATH.
The file epsonCashPRJ.JAR can be saved in any folder: it is needed that the path where the *epsonCashPRJ.JAR* file has been saved must assigned in the CLASSPATH of the Java-POS application.

8.2 Java-POS driver Installation and configuration for Window

The Java-POS driver for Windows O.S. and for Epson fiscal printer needs the following files:

- *EFIO.dll*
- *EFIOEthernet.dll*
- *EFIOSerial.dll*
- *EFIOUSB.dll*
- *epsonCashPRJ_Vnnn.jar*
- *epsonDriverVnnn.dll*
- *IOModule.dll*
- *IOModuleSetting.xml*
- *LogManager.dll*
- *SEFIO.dll*

Copy the above file in the same folder where there is the application.

9   POS for .net driver

The POS for .net driver needs that the following environment has to set in advance:

- Windows XP professional or WEPOS
- Microsoft framework 2.0

Following the installation of the environment, run the setup program:

Epson_FP_NET_ADK_111_Vnnn_x86.exe

Select the language selecting between Italian or English one

Select the folder where the driver has to be installed.
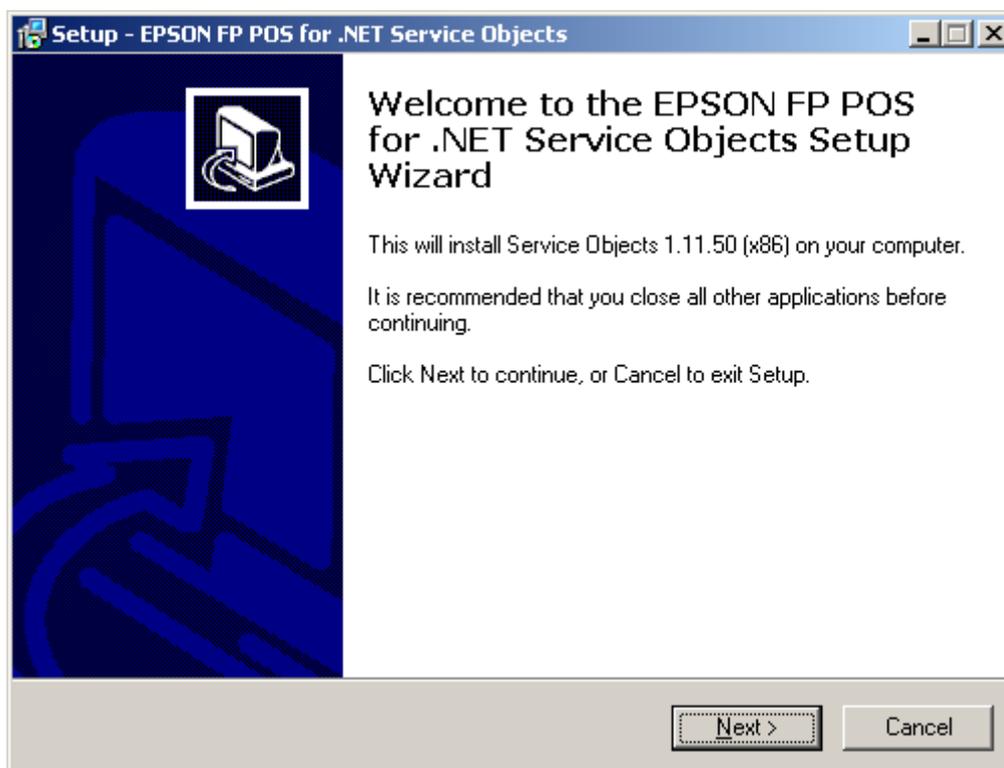
Follow the instructions and at the end click to finish to complete the installation.
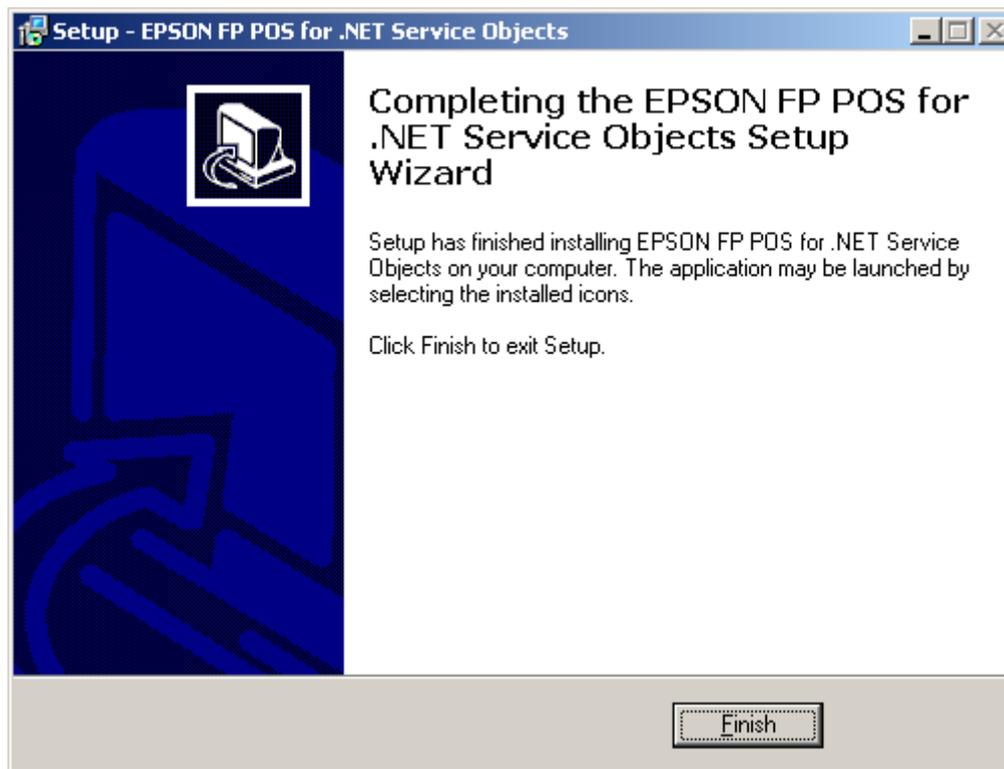
The following files have been saved in the selected folder:

Nome ⌃	Dimensione
📁 Manual	
📁 Samples	
📁 TMUSB610a	
EFIO.dll	280 KB
EFIOEthernet.dll	148 KB
EFIOSerial.dll	160 KB
EFIOUSB.dll	212 KB
epsonCashPRJ_111.dll	8.244 KB
epsonDriverV670.dll	156 KB
epsonDriverV670_1.dll	156 KB
epsonDriverV670_2.dll	156 KB
epsonDriverV670_3.dll	156 KB
epsonDriverV670_4.dll	156 KB
epsonDriverV670_5.dll	156 KB
epsonDriverV670_6.dll	156 KB
epsonDriverV670_7.dll	156 KB
epsonDriverV670_8.dll	156 KB
gacutil.exe	106 KB
getsetClasspath.dll	5 KB
IKVM.OpenJDK.ClassLibrary.dll	30.908 KB
IKVM.Runtime.dll	652 KB
IKVM.Runtime.JNI.dll	72 KB
ikvm-native.dll	80 KB
IOModule.dll	1.532 KB
IOModuleSetting.xml	2 KB
jpos.xml	48 KB
LogManager.dll	108 KB
Microsoft.PointOfService.EPSONso.dll	88 KB
msvcr71.dll	340 KB
POS_for_.NET_1.11.exe	7.752 KB
posdm.exe	97 KB
regdll.bat	1 KB
SEFIO.dll	485 KB
unins000.exe	691 KB
uninsTasks.txt	1 KB
XMLReadWrite.exe	112 KB

10 **OPOS driver**

The OPOS driver needs that the following environment has to set in advance:

- Windows XP professional or WEPOS

Following the installation of the environment, run the setup program:

Epson_FP_OPOS_ADK_111_Vnnn_x86.exe

Select the language selecting between Italian or English one

Select the folder where the driver has to be installed.

Follow the instructions and at the end click to finish to complete the installation.
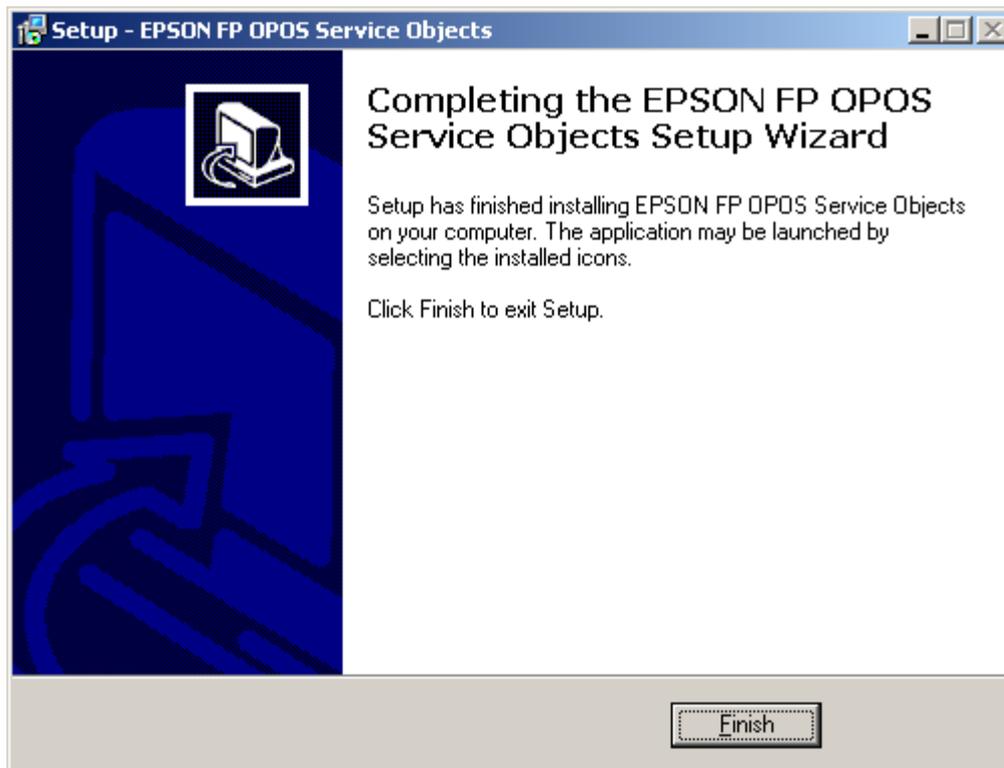
The following files have been saved in the selected folder:

Nome ▲	Dimensione
📁 Manual	
📁 Samples	
📁 TMUSB610a	
EFIO.dll	352 KB
EFIOEthernet.dll	156 KB
EFIOSerial.dll	296 KB
EFIOUSB.dll	370 KB
epsonCashPRJ_111.dll	8.252 KB
epsonDriverV780.dll	160 KB
epsonDriverV780_1.dll	160 KB
epsonDriverV780_2.dll	160 KB
epsonDriverV780_3.dll	160 KB
epsonDriverV780_4.dll	160 KB
epsonDriverV780_5.dll	160 KB
epsonDriverV780_6.dll	160 KB
epsonDriverV780_7.dll	160 KB
epsonDriverV780_8.dll	160 KB
gacutil.exe	106 KB
getsetClasspath.dll	5 KB
IKVM.OpenJDK.ClassLibrary.dll	30.908 KB
IKVM.Runtime.dll	652 KB
IKVM.Runtime.JNI.dll	72 KB
ikvm-native.dll	80 KB
IOModule.dll	1.522 KB
IOModuleSetting.xml	5 KB
jpos.xml	48 KB
LogManager.dll	97 KB
msvcr71.dll	340 KB
Opos_Constants.dll	108 KB
OPOSCashDrawer.ocx	72 KB
OPOSElectronicJournal.ocx	80 KB
OPOSFiscalPrinter.ocx	104 KB
OPOSLineDisplay.ocx	80 KB
POS_for_.NET_1.11.exe	7.752 KB
posdm.exe	97 KB
reg.bat	1 KB
reg.wp	6 KB
RegAsm.exe	52 KB
regdll.bat	1 KB
regocx.bat	1 KB
SEFIO.dll	494 KB
SOEPSON.dll	76 KB
soepson.tlb	4 KB
unins000.dat	20 KB
unins000.exe	691 KB
XMLReadWrite.exe	112 KB

11 How to set and test POS for .net and OPOS driver

To set jpos.xml and test that the driver has been installed correctly, see the following instructions:

- Connect the serial/usb/tcp cable from fiscal printer
- Run the program: Pos-SetUp
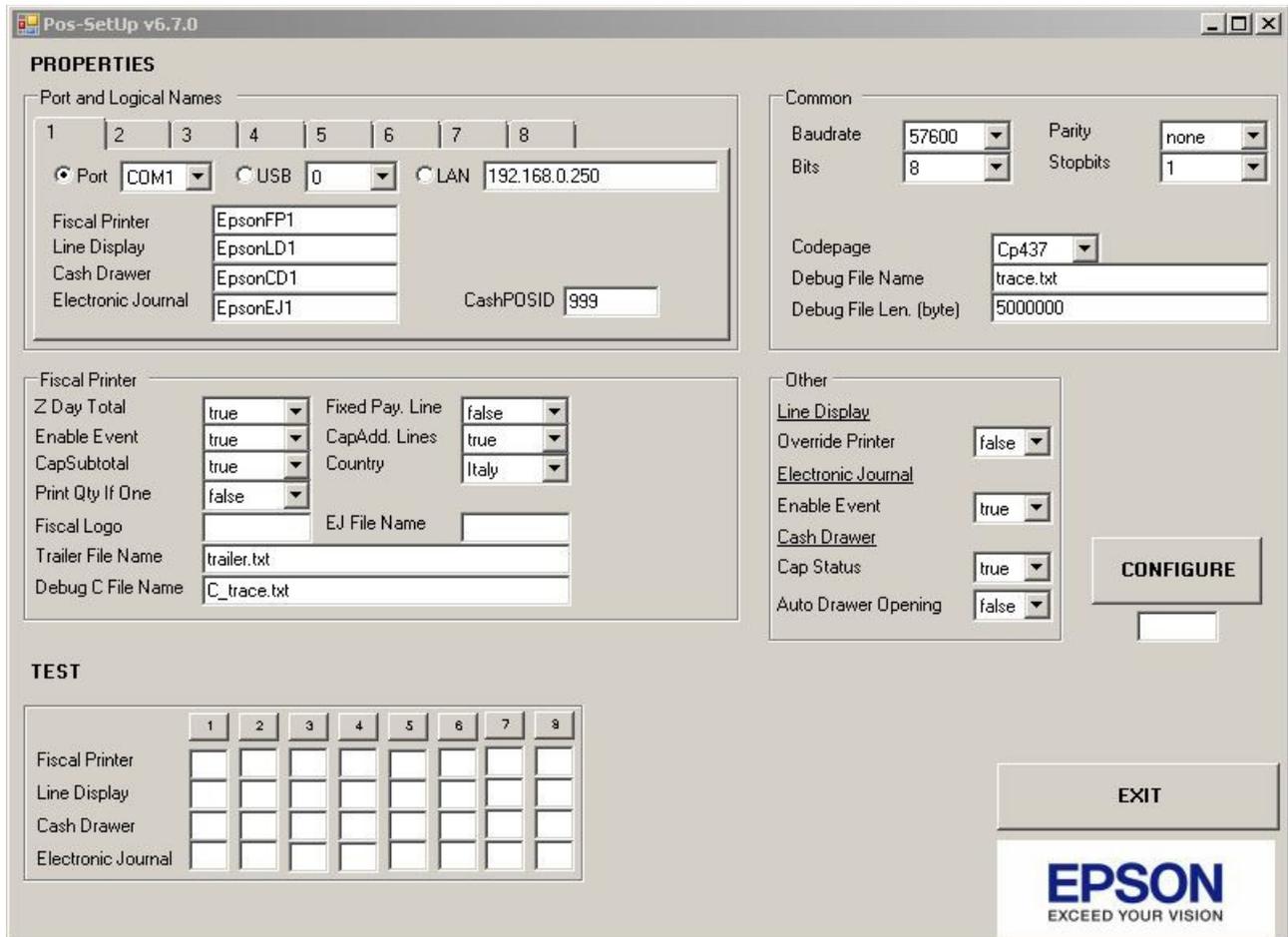
- Configure the JPOS.XML file
  - o Port and Logical Names (driver can manage until 8 fiscal printers and related devices for POS for .net, only 1 for OPOS):
    - Port (serial/usb/tcp)
    - Configure the logical names saved in registry
    - Cash POS ID
  - o Common properties
    - Baudrate (if serial port)
    - Parity (if serial port)
    - Bits (if serial port)
    - Stopbits (if serial port)
    - Codepage

- Debug File Name
- Debug File Length
  - o Fiscal Printer properties:
    - Z Day Total
    - Fixed Pay. Line
    - Enable Event
    - Cap Add. Lines
    - Cap Subtotal
    - Country
    - Print Quantity If One
    - Fiscal Logo
    - EJ File Name
    - Trailer File Name
    - Debug C File Name
  - o Line Display properties:
    - Override Printer
  - o Electronic Journal properties:
    - Enable Event
  - o Cash Drawer properties:
    - Cap Status
    - Auto Drawer Opening
- Press CONFIGURE to confirm the properties and the logical names
- Press TEST button to open, claim and enable the devices (Fiscal Printer, Cash Drawer, Line Display, Electronic Journal) – ONLY for POS for .net (does not work in OPOS)

12   **Driver error code**

BASE CODE	**EXTENDED CODE**
101 closed	
102 claimed	
103 not-claimed	
104 no-service	
105 disabled	
106 illegal	
107 no-hardware	
108 offline	
109 no-exist	
110 exist	
111 failure	
112 timeout	
113 busy	
114 **EXTENDED**	**201** cover-open
	202 JRN-empty
	203 REC-empty
	204 SLIP-empty
	205 SLIP-form
	206 missing-device(s)
	207 wrong-state
	208 technical-assistance
	209 clock-error
	210 fiscal-memory-full
	211 fiscal-memory-disconnected
	212 fiscal-totals-error
	213 bad-item-quantity
	214 bad-item-amount
	215 bad-item-description
	216 REC-total-overflow
	217 bad-VAT
	218 bad-price
	219 bad-date
	220 negative-total
	221 word-not-allowed
	222 bad-length
	223 Missing-set-currency
	224 Day-end-required

13 **Software Rev. History**

```
----------------------------------------------------------------------------
DATA : 25/04/2005
RELEASE     : 0.6
AUTORE      : C. Radaelli
```
  - ++ secondo rilascio utilizzando lo schema con file VERS.H modificato nel file   la gestione della lettura rel. della FP90 che con la rel. 2.01 la SUBREL è passata nella stringa della lettura stato x.yyy
```
----------------------------------------------------------------------------
DATA : 21/05/2005
RELEASE     : 0.7
AUTORE      : C. Radaelli
```
  - != risolto problema delle exception con errore esteso e cambiato errore OFF_LINE in fine carta
  - ++   aggiunto programmazione time out A15-6 della FP90
  - !=   cambiato valori time_out risposta dalla FP90 e CTS (aumentati)
```
----------------------------------------------------------------------------
DATA : 27/05/2005
RELEASE     : 0.8
AUTORE      : C. Radaelli
```
  - != dopo 90 PrintRecMessage() restituiva errore, mancava reset contatore linee al termine della chiusura scontrino e reset printer, modificato epsonDriver.C
```
----------------------------------------------------------------------------
DATA : 10/06/2005
RELEASE     : 0.9
AUTORE      : C. Radaelli
```
  - != reset PreLine e PostLine, release mai distribuita
```
----------------------------------------------------------------------------
DATA : 27/06/2005
RELEASE     : 0.A
AUTORE      : C. Radaelli
```
  - ++ routine ResetPrinter() ammesso VOID scontrino a pagamento iniziato
  - ++ aggiunto flag per disattivare ACK comunicazione PC
  - ++ TIME OUT FAST per printRecMessage (errore su PrintRecMessage, ridotto Time out)

```
----------------------------------------------------------------------------
DATA        : 30/06/2005
RELEASE    : 0.B
AUTORE     : C. Radaelli
```
  - != spostato il reset del contatore linee della REC MESSAGE (message_line_count) dalla routine EndFiscalReceipt e ResetPrinter a BeginFiscalReceipt()
  - ++ aggiunto lettura stato in EndFiscalReceipt in caso di stato MONITOR il metodo ritorna O fino alle release precendeti alla 3.0 in caso di fine carta su pagamento o fine scontrino la stampante ritorna ERRORE ma chiude lo scontrino dopo il cambio carta

----
    DATA   : 08/07/2005
    RELEASE   : 0.C
    AUTORE   : G. Meini
- ++ inserito ritardo nel metodo JPOS PrintRecTotal, release utilizzata a solo scopo di DEBUG

DATA   : 10/08/2005
RELEASE   : 1.0
AUTORE   : G. Meini
- != unificate le versioni Linux e Windows
- != modificata gestione dalla versione del firmware della stampante FP90
- ++ aggiunta possbilità di utilizzare il metodo JPOS PrintNormal all'interno dello scontrino fiscale
- != variazione implementazione metodo JPOS resetPrinter
- != modificata lettura parametro COM-port da file XML di configurazione
----
DATA   : 16/09/2005
RELEASE   : 1.1
AUTORE   : G. Meini
- != abilitata operazione di "correzione" metodo JPOS PrintRecVoidItem
- != corretto calcolo importo metodo JPOS PrintRecVoidItem

DATA   : 20/09/2005
RELEASE   : 1.2
AUTORE   : C.Radaelli
- != modificato valore minimo rel. da 2012 a 2011 per VOID_REC_IN_PAYMENT_MIN_SW_REV_NUM
- != modificato valore minimo rel. da 2020 a 2011 per   END_FISCAL_MIN_SW_REV_NUM

DATA   : 23/09/2005
RELEASE   : 1.3
AUTORE   : G. Meini
- ++ ripristinato corretto funzionamento RestoreDisplay
- != correzione formattazione stringa di descrizione del pagamento
- != NO cancellazione display LCD in uscita dal driver
- != variata logica di discriminazione storno/correzione metodo JPOS printRecVoidItem
----
DATA   : 02/10/2005
RELEASE   : 1.4
AUTORE   : C.Radaelli
- != modificata la routine resetPrinter() Case FISCAL_REC_END_OPEN. Se esiste questo stato significa che la FP90 Ã¨ in grado di gestirlo e di accettare il comando di VOID TOTALE. Nelle versioni al posto del VOID si chiudeva lo scontrino forzando il pagamento.
- != Cambiata modalita' sconto su ITEM da ultima vendita a Reparto (tipo 3)per partire con sconto negativo

---

```
DATA        : 17/10/2005
RELEASE     : 1.5
AUTORE      : C.Radaelli
```

- ++ Aumentato valore TIME OUT BUSY da 3000 a 5000
- ++ Modificato Indice pagamenti da 0 a 1 valore minimo ammesso

---

```
DATA        : 18/10/2005
RELEASE     : 1.6
AUTORE      : C.Radaelli
```

- Eliminato test CTS prima della trasmissione

```
DATA        : 28/03/2006
RELEASE   : 1.7
AUTORE    : G.Meini
```

- != Ripristinato test CTS prima della trasmissione, spostato nel ciclo di retry e inserito ciclo antirimbalzo segnale CTS

```
DATA : 01/04/2006
RELEASE     : 1.8
AUTORE      : G.Meini
```

- ++ Gestione Raw-IO come caso particolare Direct-IO per supporto stampa bitmap
- ++ Gestione tipo stampante per operazioni dipendenti dalla versione firmware

---

```
DATA : 06/04/2006
RELEASE     : 1.9
AUTORE      : C.Radaelli
```

- ++ Aggiunto CASE NON FISCAL RECEIPT OPEN nella funzione RESET di EpsonDriver.c
- != modificato PERIODICA REFUND in DAILY REFUND

```
DATA        : 29/04/2006
RELEASE     : 2.0
AUTORE      : C.Radaelli
```

- ++ Aggiunto terminatore stringhe per compatibilità POSNET nel file epsondriver.c
- != resa pubblica public epson.epsonCashUtil _cDU per POSNET

```
DATA        : 10/05/2006
RELEASE     : 2.1
AUTORE      : G.Meini
```

- ++ Gestione metodo printRecNotPaid
- ++ Gestione resi/sconti/annulli metodo getTotalizer aggiunto due nuovi terminatori per POS NET

DATA   : 06/07/2006
RELEASE   : 2.3
AUTORE   : G.Meini
        :
- Unificazione codice Windows/linux/SCO-Unix

DATA   : 04/09/2006
RELEASE   : 2.4
AUTORE   : G.Meini + C RAdaelli
- ++ Implementazione maggiorazioni
- ++ aggiunto terminatori POS net per Print Normal e PricREcMessage

----

DATA   : 30/12/2006
RELEASE   : 2.5
AUTORE   : C RAdaelli
- ++ sdoppiato routine RAWIO per Linux e Windows con gestione
dellaROW I/O in 3 fasi per problema COMwrite non bloccante
- ++ aggiunto gestione USB per convertitore COMUSB
- != portato numero COM max a 20
- ++ Workaround per problema NOTA DI CREDITO, si intercetta l'additional header "PRATAICA DI RESO" e si evita l'apertura dello scontrino, in questo modo la NC è stampata correttamente
- Eliminati controli CTS e relativo time out prima della TX, il tutto è lasciato al S.O.

DATA   : 19/01/2007
RELEASE   : 2.6
AUTORE   : C RAdaelli
- != rilasciato V26 per maggiore omogenità tra POS for .net e JPOS

DATA   : 19/01/2007
RELEASE   : 2.7
AUTORE   : C Radaelli
- != Workaroubd per problema GetCurrentTotal, durante i pagamenti restituiva la parte da pagare

----

DATA   : 20/04/2007
RELEASE   : 2.8
AUTORE   : AM
- ++ aggiunta la gestione di un file .txt, in cui vengono salvate le trailer lines (max 9 linee).
- Nel file jpos.xml è¨ stato aggiunto il parametro "TrailerFileName", dove deve essere indicato il path completo del file in cui salvare le trailer lines (se non si vogliono salvare basta lasciare il parametro vuoto "").
- Ogni volta che viene effettuato l'Open della stampante, viene verificata la presenza del file e, in caso positivo, vengono lette e memorizzate le linee contenute. Quando invece viene mandato il comando setTrailerLine, la stringa viene salvata nel file (quella "vecchia" Ã¨ sovrascritta).
- Pe evitare l'introduzione di un nuovo filone di errori, non viene effettuato alcun controllo su apertura, lettura e scrittura del file stesso.
- modificato il metodo setAdditionalHeader per permettere la stampa di più additional header (max 9 linee). Va inviata un'unica stringa suddivisa in più sottostringhe separate da un cr o un lf.

- aggiunta la funzione per il settaggio del POS ID (numero cassa) attraverso il comando setPOSID. Del metodo setPOSID viene utilizzato solo il primo parametro, che deve essere di tipo numerico e di max 3 cifre. Se non si volesse stampare il numero di cassa basta inviare setPOSID("0", "0").
- reintrodotto il loop di attesa per evitare hang in scrittura porta (nel metodo FP90_SendReceive).
- Aggiunto le seguenti proprietà e eventi:
  - **CapPowerReporting** = PR_STANDARD (solo per FiscalPrinter).

- **PowerNotify** = è possibile effettuarne il settaggio (solo per FiscalPrinter), perchè CapPowerReporting = PR_STANDARD

- **PowerState** = può assumere i valori PS_UNKNOWN (se FiscalPrinter è disabled o se PowerNotify è PN_DISABLED), PS_ONLINE (se FiscalPrinter è enabled, se PowerNotify è PN_ENABLED e se la stampante risponde correttamente al polling), PS_OFF_OFFLINE (se FiscalPrinter è enabled, se PowerNotify è PN_ENABLED e se la stampante va in timeout sul polling).
- **StatusUpdateEvent** = introdotta la gestione degli eventi SUE_POWER_ONLINE e SUE_POWER_OFF_OFFLINE (solo per FiscalPrinter)

```
DATA          : 07/10/2007
RELEASE       : 2.9
AUTORE        : AM
```
- aggiunta gestione trace sia di basso livello che per la parte java
----
```
DATA          : 047/110/2007
RELEASE       : 3.0
AUTORE        : AM
```
- corretto bug stop driver per trace full e bug gestione trailer line quando si cambia il contenuto
----
```
DATA          : 05/03/2008
RELEASE       : 3.2
AUTORE        : SR
```
- ++ aggiunto metodo GetPrinterStateThread in epsonCashUtil per distinguere le chiamate effettuate dal thread
- ++ aggiunto metodo GetRecJrnStateThread in epsonCashUtil per distinguere le chiamate effettuate dal thread
- ++ aggiunto metodo GetCashDrawerStatusThread in epsonCashUtil per distinguere le chiamate effettuate dal thread
- != sostituito il metodo getCashDrawerStatus in cashDrawerService con quello specifico per le chiamate dal thread
- ++ aggiunta gestione code response -100 del metodo getCashDrawerStatusThread in cashDrawerService
- != portato il thread sleep a 1500 in cashDrawerService
- != sostituito il metodo GetPrinterState con quello specifico per le chiamate dal thread in fiscalPrinterService
- != sostituito il metodo GetRecJrnState con quello specifico per le chiamate dal thread in fiscalPrinterService
- != portato il thread sleep a 1500 in fiscalPrinterService
- ++ aggiunto metodo GetPrinterStateThread per distinguere le chiamate effettuate dal thread in epsonDriver
- ++ aggiunto metodo GetRecJrnStateThread per distinguere le chiamate effettuate dal thread in epsonDriver
- ++ aggiunto metodo getCashDrawerStatusThread per distinguere le chiamate effettuate dal thread in epsonDriver
----
```
DATA          : 18/06/2008
RELEASE       : 3.3
AUTORE        : SR
```
- != adeguamento JavaPos 1.11 in cashDrawerService
- != adeguamento JavaPos 1.11 in lineDisplayService
- != adeguamento JavaPos 1.11 in fiscalPrinterService

- ++ aggiunto nuovo FiscalReceiptType (REFUND) in fiscalPrinterService
- ++ aggiunta nuova proprieta' capPositiveSubtotalAdjustment in fiscalPrinterService
- != settata a true la proprieta' capFiscalReceiptType in fiscalPrinterService
- != il metodo printRecMessage puo' essere utilizzato durante tutti gli stati RECEIPT in fiscalPrinterService
- ++ aggiunta gestione esplicita delle note di credito (modificato beginFiscalReceipt) in fiscalPrinterService
- != il metodo printRecNotPaid e' utilizzabile solo se capAmountNotPaid e capReceiptNotPaid sono true in fiscalPrinterService
- != il metodo printRecSubtotalAdjustment e' utilizzabile solo se capPositiveSubtotalAdjustment e' true in fiscalPrinterService
- != aggiunta la gestione del nuovo ReportType FPTR_RT_EOD_ORDINAL nel metodo printReport in fiscalPrinterService
- != il metodo setVatTable e' utilizzabile solo se anche capSetVatTable e' true in fiscalPrinterService
- != il metodo setVatValue e' utilizzabile solo se anche capHasVatTable e' true in fiscalPrinterService
- != abilitato il setFiscalReceiptType (validi solo REFUND e SALES) in fiscalPrinterService
- ++ aggiunto nuovo metodo printRecItemAdjustmentVoid in fiscalPrinterService
- ++ aggiunto nuovo metodo printRecItemVoid in fiscalPrinterService
- != portato a FF il limite dei caratteri stampabili, per permettere la stampa dei caratteri accentati in fiscalPrinterService
- != settata a false la proprieta' CapDuplicateReceipt in fiscalPrinterService
- != settata a false la proprieta' DuplicateReceipt in fiscalPrinterService
- ++ aggiunta gestione ElectronicJournal (classe electronicJournalService)
- ++ aggiunto metodo RecItemVoid (FiscalPrinter, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo OpenElectronicJournalDriver (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo CloseElectronicJournalDriver (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo InitializeMedium (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo GetStatus (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo GetStatusThread (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo PrintContentByDate (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo PrintContentByNumber (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo QueryContentByDate (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo QueryContentByNumber (ElectronicJournal, per adeguamento v1.11 Upos) in epsonCashUtil
- ++ aggiunto metodo OpenElectronicJournalDriver (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo CloseElectronicJournalDriver (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo InitializeMedium (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo GetStatus (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo GetStatusThread (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo PrintContentByDate (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo PrintContentByNumber (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo QueryContentByDate (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver
- ++ aggiunto metodo QueryContentByNumber (ElectronicJournal, adeguamento v1.11 Upos) in epsonDriver

- ++ aggiunto metodo RecItemVoid (FiscalPrinter, adeguamento v1.11 Upos) in epsonDriver

----
DATA   : 24/10/2008
RELEASE   : 3.4
AUTORE   : SR

- ++ gestione CodePage in cashDrawerService
- != modifica frequenza thread in cashDrawerService
- ++ gestione CodePage in lineDisplayService
- != ignorato errore -3 (stampante off-line) in lineDisplayService
- ++ gestione CodePage in electronicJournalService
- != modifica frequenza thread in electronicJournalService
- ++ gestione CodePage in fiscalPrinterService
- != modifica frequenza thread in fiscalPrinterService
- ++ attribuzione numero scontrino a variabile globale in fiscalPrinterService

----
DATA   : 04/11/2008
RELEASE   : 3.5
AUTORE   : SR

- != blocco polling se cassetto e' chiuso in cashDrawerService

----
DATA   : 24/11/2008
RELEASE   : 3.6
AUTORE   : SR

- ++ aggiunto metodo GetEJData (FiscalPrinter, per memorizzazione Z report e SHA in stampanti greche) in epsonCashUtil
- ++ aggiunto metodo GetEJDownloadState (FiscalPrinter, per ottenere il byte 5 dello stato (comando 1074)) in epsonCashUtil
- ++ aggiunta la property fpCountryCode (01 Italy - 02 Turkey - 03 Greece) in fiscalPrinterService
- ++ aggiunta la property ejFileName in fiscalPrinterService
- ++ aggiunta la property fiscalLogo in fiscalPrinterService
- ++ memorizzazione ej dopo la stampa di uno Z report (x Grecia) in fiscalPrinterService
- ++ memorizzazione ej durante il setDeviceEnabled se non e' stato possibile farlo subito dopo lo Z report (x Grecia) in fiscalPrinterService
- ++ aggiunto metodo GetEJData (FiscalPrinter, per memorizzazione Z report e SHA stampanti greche) in epsonDriver
- ++ aggiunto metodo GetEJDownloadState, per verificare, nel caso delle stampanti greche, se l'EJ e' da memorizzare (dopo uno Z report) in epsonDriver

----
DATA   : 06/02/2009
RELEASE   : 3.7
AUTORE   : SR

- ++ aggiunto metodo GetPrinterInformation (FiscalPrinter, per verificare il modello della stampante) in epsonCashUtil
- ++ aggiunto metodo BeginFiscalDocument (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo BeginInsertion (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo EndInsertion (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo PrintFiscalDocumentLine (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo BeginRemoval (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo EndRemoval (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil

- ++ aggiunto metodo EndFiscalDocument (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo GetFiscalDocNumber (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunto metodo GetFiscalDocVoidNumber (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonCashUtil
- ++ aggiunta gestione Slip Station per la stampa dei Fiscal Document in fiscalPrinterService
- != abilitata la proprietà capSlpFiscalDocument in fiscalPrinterService
- != abilitata la proprietà capSlpPresent in fiscalPrinterService
- != aggiunta la gestione degli eventi per la slip station in fiscalPrinterService
- != abilitato il metodo beginFiscalDocument() in fiscalPrinterService
- != abilitato il metodo beginInsertion() in fiscalPrinterService
- != abilitato il metodo endInsertion() in fiscalPrinterService
- != abilitato il metodo printFiscalDocumentLine() in fiscalPrinterService
- != abilitato il metodo beginRemoval() in fiscalPrinterService
- != abilitato il metodo endRemoval() in fiscalPrinterService
- != abilitato il metodo endFiscalDocument() in fiscalPrinterService
- != abilitata la proprietà capSlpEmptySensor in fiscalPrinterService
- != abilitata la proprietà capSlpFullSlip in fiscalPrinterService
- != abilitata la proprietà capSlpNearEndSensor in fiscalPrinterService
- != abilitata la gestione della proprieta' slpEmpty in fiscalPrinterService
- != abilitata la gestione della proprieta' slpNearEnd in fiscalPrinterService
- ++ aggiunta la gestione del contatore GPTR_GD_FISCAL_DOC in getData() in fiscalPrinterService
- ++ aggiunta la gestione del contatore GPTR_GD_FISCAL_DOC_VOID in getData() in fiscalPrinterService
- != gestione del codice di errore nel metodo resetPrinter() in fiscalPrinterService
- != rimessa nel beginFiscaReceipt la richiesta di numero scontrino corrente, in fiscalPrinterService
- != lettura trailerFileName spostata in fiscalPrinterService e aggiunto try
- ++ aggiunta variabile che indica la versione del driver (da inserire nel debug) in fiscalPrinterService
- != il numero scontrino ritornato corrisponde all'ultimo scontrino fiscale gia' stampato, in fiscalPrinterService
- ++ aggiunto metodo GetPrinterInformation (FiscalPrinter, per verificare il modello della stampante) in epsonDriver
- ++ aggiunto metodo BeginFiscalDocument (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo BeginInsertion (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo EndInsertion (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo PrintFiscalDocumentLine (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo BeginRemoval (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo EndRemoval (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo EndFiscalDocument (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo GetFiscalDocNumber (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunto metodo GetFiscalDocVoidNumber (FiscalPrinter, perchè è stata aggiunta la gestione della Slip e dei Fiscal Document) in epsonDriver
- ++ aggiunta la property printQuantityIfOne (stampa la quantità prima di un articolo anche se = 1)
- ++ aggiunta la stampa della quantità, nel metodo printRecItem, anche = 1 (solo se printQuantityIfOne è true)

DATA   : 31/07/2009
RELEASE   : 3.9
AUTORE   : SR
- != set default printer type to 0 (FP90), because 255 (UNKNOW) gives errors
- != set cashPOSID (fiscal printer number) to 3 characters (000)

DATA   : 31/08/2009
RELEASE   : 4.0
AUTORE   : SR
- != modified test version level in reset command
- != temporary suspended fiscal documents control (in DayOpened)

DATA   : 01/10/2009
RELEASE   : 4.1
AUTORE   : SR
- != modified Pos-SetUp

DATA   : 19/10/2009
RELEASE   : 4.2
AUTORE   : SR
- != modified Pos-SetUp

DATA   : 13/11/2009
RELEASE   : 4.3
AUTORE   : SR
- != modified Pos-SetUp

DATA   : 20/01/2010
RELEASE   : 4.4
AUTORE   : SR
- != modified Pos-SetUp
- ++ added in OpenPrinterDriver CoverOpen/RecEmpty error
- ++ added Get Printer Information (1079) command in OpenPrinterDriver for international printer type
- != fixed bug in GetRecJrnStateThread

DATA   : 12/04/2010
RELEASE   : 4.5
AUTORE   : SR
- != modified Pos-SetUp
- != modified bitmap buffer dimension
- != modified serviceObjectVersion (1.11.2)
- != fixed some EJ properties problem
- != fixed ResultCodeExtended problem

DATA   : 27/04/2010
RELEASE   : 4.6
AUTORE   : SR
- != modified Pos-SetUp
- != fixed serial port connection problem

DATA   : 02/09/2010
RELEASE   : 4.7
AUTORE   : SR
- != modified Pos-SetUp
- ++ manages 4 devices for any type (4 Fiscal Printer, 4 Line Display, ...)
- ++ manages line feed (\n) on method PrintRecMessage

- != method PrintRecMessage can be used even if receipt's total is negative
- != electronic journal property Claimed return correct value
- -- no automatic drawer opening command added in Cash Drawer opening (deleted from Fiscal Printer)
- ++ compatibles with 64-bit systems, but the application must be compiled to x86 (NOT x64)

DATA   : 13/10/2010
RELEASE   : 4.8
AUTORE   : SR

- != modified Pos-SetUp
- ++ manages 8 devices for any type (8 Fiscal Printer, 8 Line Display, ...)
- ++ added control on fiscal printer power state (on/off)

DATA   : 16/11/2010
RELEASE   : 4.9
AUTORE   : SR

- != modified Pos-SetUp
- ++ added the following fixed payment definition: CREDIT, OTHER and BANCOMAT
- ++ added the configuration of CREDIT description in the FPxx (Italian version)

DATA   : 03/03/2011
RELEASE   : 5.0
AUTORE   : SR

- != modified Pos-SetUp
- ++ added "neutral" driver for JavaPos only (epsonDriverV50)
- != set cash index to 0 in case of fixed payment

DATA   : 11/05/2011
RELEASE   : 5.2
AUTORE   : SR

- != in case of error 33, GetFiscalDayState return true

DATA   : 07/07/2011
RELEASE   : 5.3.0
AUTORE   : SR

- != introduced new dll SEFIO (x Epuras)

DATA   : 30/09/2011
RELEASE   : 6.0.0
AUTORE   : SR

- != introduced new dll SEFIO (for dll Efio)

DATA   : 09/11/2011
RELEASE   : 6.1.0
AUTORE   : SR

- ++ added 2 new printers (FP90III and FP81II)
- != increased timeout for GetEJData command
- ++ in case of Tcp connection, if a power off / power on is occurred, a retry of last command must be done
- != in case of Tcp connection, if first command after open port return an exception (printer is power off), a close port is done

----
DATA   : 23/12/2011
RELEASE   : 6.2.0
AUTORE   : SR

- != added time-out (15 sec) and stopped polling after a Z report (for Greece)

- != sales post line (for Greece) is sent before sale command

```
----------------------------------------------------------------------
DATA          : 21/05/2012
RELEASE       : 6.3.0
AUTORE        : SR
```

- != max number of additional trailer line is 99
- ++ added support of FPTR_GT_GROSS and FPTR_GT_NET optArgs in GetTotalizer method

```
----------------------------------------------------------------------
DATA          : 07/06/2012
RELEASE       : 6.4.0
AUTORE        : SR
```

- != deleted control of trailer line's max num. in method RecMessage()
- != in RecMessage() trailer line's counter is incremented only if command 1078 it's type 2

```
----------------------------------------------------------------------
DATA          : 26/07/2012
RELEASE       : 6.5.0
AUTORE        : SR
```

- != changed MAX_PRICE test, deleted 2 decimals, test on price/100

```
----------------------------------------------------------------------
DATA          : 16/10/2012
RELEASE       : 6.6.0
AUTORE        : SR
```

- != fix download graphics problem (sent only first bytes' packet)
- ++ added GetPrinterStateThread control for Fiscal Document (invoice)
- != changed EndFiscalRec timeout (15000 ms, was 8000 ms)

```
----------------------------------------------------------------------
DATA          : 03/12/2012
RELEASE       : 6.7.0
AUTORE        : SR
```

- ++ added autoDrawerOpening property (in jpos.xml) and its management to setting automatic drawer opening

```
----------------------------------------------------------------------
DATA          : 01/02/2013
RELEASE       : 6.8.0
AUTORE        : SR
```

- ++ added management of "free" description in fixed payments

```
----------------------------------------------------------------------
DATA          : 20/02/2013
RELEASE       : 6.9.0
AUTORE        : SR
```

- != fixed bug on Sefio driver

```
----------------------------------------------------------------------
DATA          : 20/05/2013
RELEASE       : 7.0.0
AUTORE        : SR
```

- != added character "-" if totalizer is negative (methods GetTotalizer() and GetData())
- != for printer model FP90III and FP81II the DescriptionLength is 38 and the MessageLength is 46

```
----------------------------------------------------------------------
DATA          : 28/05/2013
RELEASE       : 7.1.0
AUTORE        : SR
```

- != modified management of PrintRecItemAdjustment() (discount/surcharge is on last item sold, not on the plu)

```
----------------------------------------------------------------------
DATA          : 02/10/2013
RELEASE       : 7.3.0
AUTORE        : SR
```

- != fixed the bug on opening/closing different devices
- != fixed the bug on C trace
- != fixed the bug on trailer file

DATA   : 14/05/2014
RELEASE   : 7.4.0
AUTORE   : SR
- != fixed the bug on PrintRecMessage in case of credit note
- != added new management of fixed payment (double index)
- != fixed the bug on line display, sending Euro character
- != modified flow control type (RTS/CTS)
- != changed IoModuleSetting.xml file
- != changed Efio files
- != fixed the bug on set header line, with FP90III and FP82II (max 40 characters)
- != fixed the bug on total item (getTotalizer), set 4 decimals (was 2)
- != fixed the bug on line display, exception no service when printer is online
- != fixed the bug on printer buffer after a printer timeout (clean printer buffer)
- != fixed the bug on "autoDrawerOpen" property, in case jpos.xml doesn't contain its line

----
DATA   : 13/02/2015
RELEASE   : 7.5.0
AUTORE   : SR
- != fixed the bug on EJ query content, with FP90III and FP82II (46 characters returned)
- != disabled Pos-SetUp test button in Opos driver

DATA   : 16/09/2015
RELEASE   : 7.6.0
AUTORE   : SR
- != modified setVatValue() method, added formatting of second argument (percentage vat value)

DATA   : 23/11/2015
RELEASE   : 7.7.0
AUTORE   : SR
- != modified waitForDrawerClose() method, changed timeout management (method returns immediately when drawer is closed)

DATA   : 22/12/2015
RELEASE   : 7.8.0
AUTORE   : SR
- != modified setTrailerLine() method, verified Description parameter (if null set to "")

DATA   : 07/11/2016
RELEASE   : 7.9.0
AUTORE   : SR
- != increased the max number of italian VAT rates to 9, for printers and FW that support it
- != increased to 10 the number of devices that the driver can handle (only for Javapos and DotNet)

DATA   : 24/01/2017
RELEASE   : 8.0.0 (only for JavaPos)
AUTORE   : AMR

DATA   : 24/07/2017
RELEASE   : 8.1.0 (only for JavaPos)
AUTORE   : AMR

DATA   : 21/08/2017
RELEASE   : 8.1.1 (only for JavaPos)

AUTORE   : AMR

DATA   : 02/03/2018
RELEASE   : 8.1.2 (only for JavaPos)
AUTORE   : AMR

DATA   : 17/05/2018
RELEASE   : 8.1.4
AUTORE   : SR
- != updated Efio library

DATA   : 10/01/2019
RELEASE   : 8.1.5
AUTORE   : SR
- != added management of RT printers model