

EFR Guide [IT]

Implementation Details Italy

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This document amends "EFR Reference"
It refers to EFR version 2.x

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RT 2.0 Changes

RT 2.0 features can only be used on RT 2.0 printers.

Void / Refund

Possibility to void/refund receipts not issued on a printer by replacing S/N in RFN with:

- POS in the case of a POS receipt
- VR in the case of returnable voids
- ND in other cases

Rounding

Rounding behaviour of the printer can be changed in the printer menu, press:

3333 <CHIAVE> 15

cycle to flag 27 with <CONTANTE/TOTALE>

- 0: Rounding disabled (default)
- 1: Full Rounding
- 2: Only Rounding down
- 3: Only Rounding up

For examples and detailed description refer IT business cases document.

Position Types

For examples please refer the business cases document.

- Adv: Advance Payment
- Dep: Deposit
- FoC: Free of Charge
- Svc: Service
- You: Voucher

Payment Groups

- PayG 4 "Ticket": requires ticket number 4-XX
- new PayG 5-00: No Payment
- new PayG 5-03: Receipt followed to Invoice
- new PayG 5-04: Invoiced
- new PayG 5-05: SSNreceipt (Pharmacy, currently n.A.)
- new PayG 6-00: Discount on payment (Sconto a pagare)
- new PayG 6-01 Multi purpose voucher

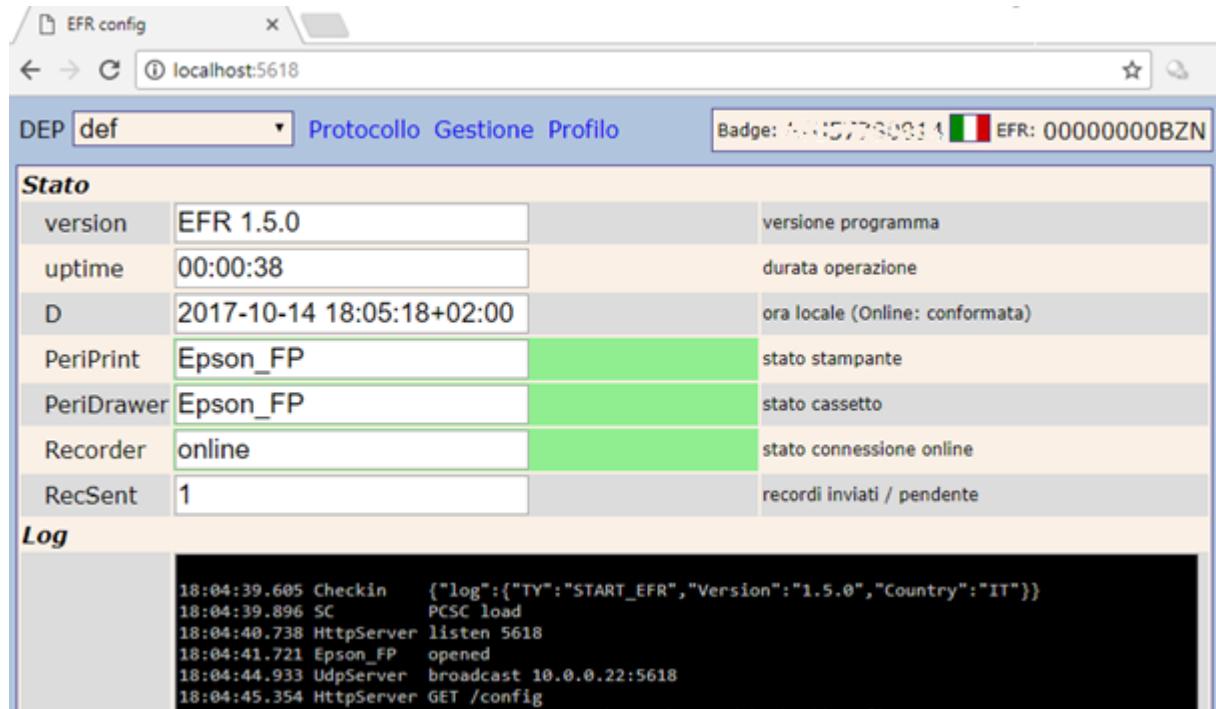
System Setup

EFR Installation

Windows: .msi from <https://public.efsta.net/EFR>
 runs as Windows service

Linux: .zip from <https://public.efsta.net/EFR>
 run file install.sh
 run automation recommended, e.g. with systemd
 setup run automation with install.sh:
 install.sh --service --service-user=USER

Basic execution tracking can be examined via web access <http://localhost:5618/config>:



The screenshot shows a web browser window titled 'EFR config' with the URL 'localhost:5618'. The interface has a header with 'DEP def' and tabs for 'Protocollo', 'Gestione', and 'Profilo'. It also shows a badge with 'Badge: A.450/730/31' and an EFR ID '000000000BZN'. The main content is divided into two sections: 'Status' and 'Log'.

Status

| | | |
|------------|---------------------------|---------------------------------|
| version | EFR 1.5.0 | versione programma |
| uptime | 00:00:38 | durata operazione |
| D | 2017-10-14 18:05:18+02:00 | ora locale (Online: conformata) |
| PeriPrint | Epson_FP | stato stampante |
| PeriDrawer | Epson_FP | stato cassetto |
| Recorder | online | stato connessione online |
| RecSent | 1 | recordi inviati / pendente |

Log

```

18:04:39.605 Checkin {"log":{"TY":"START_EFR","Version":"1.5.0","Country":"IT"}}
18:04:39.896 SC PCSC load
18:04:40.738 HttpServer listen 5618
18:04:41.721 Epson_FP opened
18:04:44.933 UdpServer broadcast 10.0.0.22:5618
18:04:45.354 HttpServer GET /config
  
```

EFR is functional if 'uptime' is counting.

Printer Installation

By law a fiscal printer is required to print customer receipts and daily closures. EFR handles communication to the printer as well as to the peripheral devices connected, i.e. line display and cash drawer.

After having established a cable connection, set up and check the printer connection over <http://localhost:5618>.

Setup Connection

Printer connection can be set on page "Profilo":

RN **IT** ▾ Protocollo Gestione Profilo Licenza

General

| | | |
|---------|-------------------------------------|---|
| Offline | <input checked="" type="checkbox"/> | controls EFSTA cloud communication for an Offline EFR you have to care for it |
|---------|-------------------------------------|---|

Fiscal

| | | |
|-------------|------------------|--|
| TaxId | | IVA IT999999999999 |
| Printer | Epson_FP ▾ | Printer driver to be used |
| Printer Cfg | ETH:192.168.1.37 | connection attributes for Printer (Virtual) Serial: "[Port]:[Baudrate]" Ethernet: "ETH:[IP]" USB: "L1USB" |

Test Connection

Basic hardware tests can be made on page "Gestione":

RN **def** ▾ Protocollo Gestione Profilo

Stato

| | | |
|------------|--|--|
| ModuleName | Epson_FP | printer driver module |
| Serial | 99MEX030623 | matricola del misuratore fiscale, serial number |
| ErrorCode | | ultimo errore / last error |
| Warning | | |
| Stato | Info: Drawer: CPU:10.02 MF_STAT:0 MF_REL:04.3 MF_STAT0:00110 LastStateUpdate:1632746069439 ZI:280 | informazioni di stato e diagnostica see "Protocollo di Comunicazione" |

Comando

| | | | |
|----------------|--|--|---|
| Arrotondamento | <input type="button" value="disattivare"/> | <input type="button" value="abilitare"/> | disabilitare o abilitare l'arrotondamento amount rounding on printer |
| Ristampa | <input type="button" value="stampare"/> | | permette la ristampa dell'ultimo receipt, non funziona in caso di una stampa only |

Verifica

| | | |
|-----------|---|--|
| Stampante | *** PROVA *** PROVA *** PROVA *** *** TEST *** TEST *** TEST *** | comando per stampare un scontino |
| | <input type="button" value="stampare"/> | |
| Cassetto | <input type="button" value="aprire"/> | comanda l'apertura del cassetto, cash drawer |
| Visore | Grazie della vostra visita <input type="button" value="inviare"/> | invia alla stampante un messaggio |

PugEdit

| | | |
|---------------|---------------------------------------|---|
| Cambia layout | <input type="button" value="aprire"/> | apre l'editor del pug / open pug editor |
|---------------|---------------------------------------|---|

| | |
|----------------|---|
| Arrotondamento | enable/disable automatic rounding function of printer |
| Ristampa | reprint last fiscal receipt |
| Stampante | non-fiscal test print |
| Cassetto | open cash drawer |
| Visore | send text to line display |

EPSON FP-90III & FP-81II

EFR currently supports fiscal printing with EPSON FP-90III or FP-81II in serial, ethernet or USB mode. Connect the printer using an included RS232 cable, ethernet cable or USB Mini B cable.

Firmware

Supported printer firmware is: CPU 11.02 or CPU 7.02 Build 0255

Printer Configuration

Connect a keyboard to the printer's USB A port and perform following steps to configure the printer:

RS232 connection

STATO REGISTRAZIONE 3333 <CHIAVE>

SCELTA FUNZIONE 17

CONNESSIONE RS232

- switch to "COMPUTER" using key <X>
- confirm selection with <CONTANTE/TOTALE>
- note configured BAUDRATE
- Use <CONTANTE/TOTALE> to go to "CONTROLLO RTS/CTS"
- change to "0" using key <X>
- confirm with <CONTANTE/TOTALE>
- exit with <CHIAVE>

Ethernet connection

STATO REGISTRAZIONE 3333 <CHIAVE>

SCELTA FUNZIONE 19

CONNESSIONE LAN

- switch to "COMPUTER" using key <X>
- confirm selection with <CONTANTE/TOTALE>
- print all ETH settings with <SUBTOTALE>
- exit with <CHIAVE>

USB connection

STATO REGISTRAZIONE 3333 <CHIAVE>

SCELTA FUNZIONE 18

CONNESSIONE USB

- switch to "COMPUTER" using key <X>
- confirm selection with <CONTANTE/TOTALE>
- exit with <CHIAVE>

Host side RS232 connection

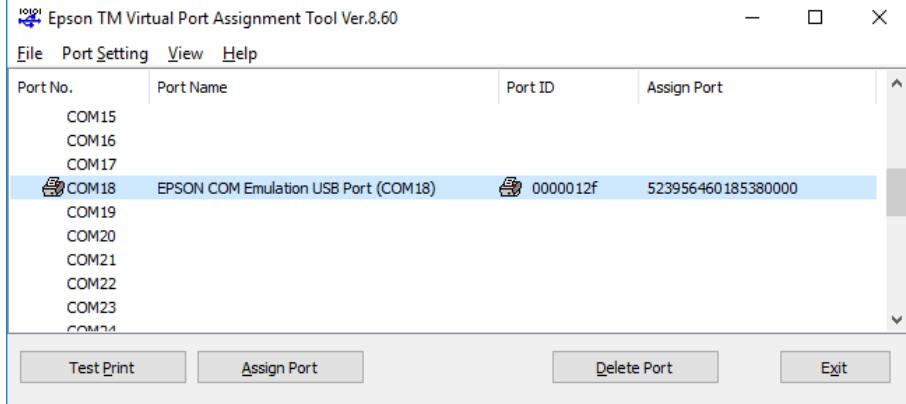
On <http://localhost:5618> on profile-page enter the connection details in field Printer Cfg:

For example: „COM1:57600“

Host side ethernet connection

On <http://localhost:5618> on profile-page enter the IP address of the printer in field Printer Cfg: For example: „ETH:192.168.0.12“

Host side USB connection

| | |
|--|---|
| Windows Virtual Serial Port | <p>Install driver TMVirtualPortDriver860a from https://public.efsta.net/EFR [IT] [Drivers].</p> <p>Port assignment:</p> <ul style="list-style-type: none">• Click Port.No. COM18 / [Assign Port]• Assign Port / USB / A device is ... USB serial number.• Select printer from list / [OK]  <ul style="list-style-type: none">• [Exit]• Enter “COM18” on EFR profile-page |
| Alternatively: Windows over LIBUSB | <p>For driver installation use LIBUSB utility "zadig", which can be downloaded from zadig.akeo.ie. zadig.exe (zipped) also is available on public.efsta.net/EFR [IT] [Drivers].</p> <p>After starting the program select "TM-T800F TM-T900F" from the list. You may have to Options>List All Devices before. "Install Driver" or "Replace Driver".</p> <p>Enter “LIBUSB” on EFR profile-page.</p> |
| Linux | <p>Everything is done with the installation of node_module USB.</p> <p>In case of LIBUSB access errors the accessibility of USB interfaces has to be configured; e.g. insert in <code>/lib/udev/rules.d/50-udev-default.rules</code>:</p> <pre>SUBSYSTEM=="usb", ATTRS{idVendor}=="04b8", ATTRS{idProduct}=="0201", MODE="0666"</pre> <p>Enter “LIBUSB” on EFR profile-page.</p> |

First Test Transaction

The cash register software communicates with the EFR via REST web service.

You can simulate this behaviour in your browser even before beginning to implement the actual interface. To do this please install a REST client of your choice, for example "Advanced REST client" for Google Chrome.

Parameters for the web request are:

URL: <http://localhost:5618/register>

Method: POST

Payload: Transaction data as XML, e.g.:

```
<Tra>
  <ESR TL="001" TT="1" TN="14511" T="1.95">
    <PosA>
      <Pos Amt="1.95" PN="1" Qty="1" Pri="1.95" Dsc="Color Stop 100ml" TaxG="A"/>
    </PosA>
    <PayA>
      <Pay Amt="2.00" PayG="0" Dsc="Contante"/>
      <Pay Amt="-0.05" PayG="0" Dsc="Resto"/>
    </PayA>
  </ESR>
</Tra>
```

Click on [Send]: the transaction is printed and registered.

In contrast to other countries with software fiscalization you have to provide item positions and payment lines for printing.

The returned answer provides you with the http state and the ResultCode RC:

```
<TraC SQ="8943">
  <Result RC="OK"/>
  <Fis D="10-12-18 15:52" FN="0039 0002 10122018 99MEX030623" DN="0002" ZI="39"
ID="99MEX030623"/>
</TraC>
```

As long as the printer is not set to fiscal mode (by an official representative), the printout will be marked "NON FISCAL".

Workflow Rules

| http status | RC | |
|-------------|-----|---|
| 200 | OK | proceed with the final steps (store transaction) |
| 406 | NO | show error message based on field ErrorCode NO reflects a printing error, the transaction may be repeated after operator intervention |
| 400 | BAD | BAD signals a formal or logical error correct transaction data before resending |

If you get a UserMessage field in the response (given in Italian language), it has to be shown to the cash register operator (e.g. MessageBox).

Usually EFR responds within 10 seconds. As the response is given after print completion, on transactions with many positions or on end of day transaction a longer delay could occur.

For details and data structures see "EFR Reference".

Fiscal Printing

General Printer Settings

For configuration of the fixed header lines of the printer or logo graphs please install EpsonFpSuite from

https://download.epson-biz.com/modules/pos/index.php?page=single_soft&cid=5384&pcat=51&pid=3316 on a seperate machine (as Windows drivers of EFR and EpsonFpWizard may interfere).

Print Layout

For printing a fiscal transaction the data has to be formatted, this is done using the HTML templating engine PUG. For further details refer to chapter PUG Layout.

For Italian fiscal printers the item description and additional text lines may be formatted freely, but referring amounts are printed in a fixed format by the printer.

Following rules occur for fiscal receipts:

- fixed header lines and header or footer logo graphics are configured with the program EpsonFpWizard and stored onto the printer
- header lines within transaction data may be up to 46 characters and up to 9 lines in fiscal receipts or up to 5 lines in fattura
- footer lines within transaction data may be up to 46 characters and up to 99 lines
- description and text lines up to 38 characters
- one transaction specific barcode may be printed in the last line of the footer
- paper is cut after print completion

For details of layout commands see chapter PUG Layout.

You can start Layout editor on page Gestione for layout configuration, it works as a WYSIWYG editor. Actual printout may differ due to limitations of the fiscal printer compared to HTML.

Besides fiscal.pug different non-fiscal layout files can be provided on directory /EFR/rn/def/cfg, the file name is derived from the NF tag: NF="Login" => "login.pug" (filename lowercase).

For non-fiscal printouts:

- the whole print line width (46 characters) can be used
- lines can be formatted emphasized (*) or double height (

)*

Application Requirements

- Sales of services can be issued by specifying PTY="Svc" on the Pos-element.
- Return/Void: A „DOCUMENTO COMMERCIALE emesso per RESO MERCE“ (Return) or „DOCUMENTO COMMERCIALE emesso per ANNULLAMENTO“ (Void) is printed.
- Return/Void transactions have to refer the original document by giving FN of the original receipt as ESR.RFN. If no FN is available "POS", "VR", or "ND" instead of the printer serial can

be used along with ESR.RD and ESR.RTN. A void transaction is issued if ESR.Void="1" is set, otherwise a return transaction is issued.

VAT Handling

As in other countries transaction data is normalized upon registration (details see EFR Reference: ESR Format). Tax rates are controlled via ESR.TaxA, Tax.Prc is matched against the printer configuration, which is loaded with rates valid at startup system date (and after each closure).

Current rates in RT mode are:

| Prc | Descrizione | TaxG | Epson FP | |
|-----|---------------------|------|----------|--|
| | | | Tassa | |
| 22% | difetto | A | 01 | |
| 10% | prodotti turistici | B | 02 | |
| 5% | prestazioni sociali | C | 03 | |
| 4% | prima necessità | D | 04 | |
| 0% | Esente | ES | 00 | |
| 0% | Esclusa | EE | 10 | |
| 0% | Non soggetta | NS | 11 | |
| 0% | Non imponibile | NI | 12 | |
| 0% | Regime del margine | RM | 13 | |
| 0% | Operazione non IVA | AL | 14 | |
| 0% | TBD | - | 15 | |
| 0% | TBD | - | 16 | |
| 0% | TBD | - | 17 | |
| 0% | TBD | - | 18 | |
| 0% | TBD | - | 19 | |

In RT mode for 0% the appropriate tax group has to be used in Field TaxG to distinguish between the different groups, otherwise ES is used by default.

Payment Types

It is possible to define different payment types in the Pay element with Pay.PayG.

Following payment types are possible:

| PayG | Description |
|------|-----------------------------|
| 0-00 | Cash |
| 1-00 | Cheque |
| 2-00 | Credit |
| 2-XX | Credit Card XX: 01-10 |
| 3-00 | Ticket |
| 4-XX | Ticket with number |
| 5-00 | No payment |
| 5-03 | Receipt followed to Invoice |
| 5-04 | Invoiced |

| | |
|------|--|
| 5-05 | SSN receipt (Pharmacy) currently N.A. |
| 6-00 | Discount on payment (sconto a pagare) |
| 6-01 | Multi purpose voucher |

If Pay.PayG contains only 1 digit, the default value 00 for the index is used by EFR.

If no Pay.PayG field is present, or if Pay.PayG is different from the possible types, payment description is interpreted:

| Pay.Dsc | PayG |
|-----------------------|------|
| "Cheque" or "Assegno" | 1 |
| "EC" or "Carta" | 2-01 |
| "Sconto" | 6 |
| "Voucher" or "Buono" | 6-01 |

If no Pay.Dsc matches, PayG 0 for Cash is used.

Credit Card Handling

The EPSON printer can be programmed up to support different credit cards to split credit cards for each card type during z-report. E.g: printer 2-01 ... visa, 2-02 ... mastercard You have to send in the PayG 2-01 if the customer pays with visa, ...

If you don't split up credit cards just use 2-01.

Lottery Handling

With the new Receipt Lottery there is the possibility to send information relating the amount of the receipt to a particular Lottery Server which convert the amount in Virtual Lottery Ticket. Periodically the virtual ticket participate to the lottery and the result will be available on the Lottery Web Portal.

- During the transmission of the Lottery receipt to tax authority it is needed to define the Company name where the printer RT has been installed by setting the corresponding header line number (Ragione Sociale Esercente). Please ensure this is done by your fiscal partner on printer update or installation. By default the first header line is used as company name.
- The request to participate to the lottery game is done from the customers providing a lottery code released from lottery web portal.
- The printer will accumulate the request to participate to the lottery in a special memory and when the number of requests is equal to 100 or in case of Z-report, the accumulated requests are sent to the lottery server.
- In case of refund or void of a receipt issued on a different printer the lottery code has to be sent again.
- Checkdigit generation can be set in EFR profile.

- To participate in the lottery, the field IT_CodiceLotteria needs to be included in the transaction.

To add the lottery code of a customer to a request, the field ESR.Ctm.IT_CodiceLotteria is used:

```
<Tra>
  <ESR>
    <Ctm IT_CodiceLotteria="ABCDEFGH" />
...

```

Codice Fiscale

Codice Fiscale can be transmitted to the printer by sending the code in the field ESR.Ctm.IT_CodiceFiscale:

```
<Tra>
  <ESR>
    <Ctm IT_CodiceFiscale="....." />
...

```

EFR API

The EFR serves as system interfacing to certified fiscal printers. It does not replace a fiscal printer, this is still needed to fulfil the requirements of Italian fiscal law.

EFR keeps secure journals, as it does for other fiscal countries.

Sales transactions have to be printed using the fiscal functions of the printer. For this to work two elements have to be in place:

- a transaction, sent via REST web request to the EFR, which contains sales data, and
- a formatting file, which defines formal representation of this data.

Transactions

Normal Sale

Sample JSON Register Request Body:

```
{"Tra": {"ESR": {"D": "2017-10-01T09:28:00", "TL": "01", "TT": "1", "TN": "2087", "T": "11.44", "PosA": [{"_": "Pos", "PN": "1", "IN": "4012345678901", "Dsc": "ACID 500ml", "TaxG": "B", "Amt": "1.99"}, {"_": "Mod", "PN": "1", "Dsc": "Special Offer", "Amt": "-0.50"}, {"_": "Pos", "PN": "2", "IN": "9023456789001", "Dsc": "WHOLEWHEAT FUSILLI", "TaxG": "B", "Amt": "1.50"}, {"_": "Pos", "PN": "3", "IN": "9023456789001", "Dsc": "WHOLEWHEAT FUSILLI", "TaxG": "B", "Amt": "1.50"}, {"_": "Pos", "PN": "4", "IN": "4198765432109", "Dsc": "KITTEN PET FOOD 25x", "TaxG": "A", "Amt": "3.49"}, {"_": "Pos", "PN": "5", "Dsc": "EMMENTAL CHEESE", "TaxG": "B", "Amt": "3.21", "QtyU": "0.252", "QtyU": "kg", "Pri": "12.75"}, {"_": "Lin", "LAm": "-----"}, {"_": "Lin", "Dsc": "Subtotal", "LAm": "11.19"}, {"_": "Mod", "PN": "2 3", "Dsc": "-25% Discount on Pasta", "Amt": "-0.75"}, {"_": "Pos", "PN": "6", "Dsc": "Example Item", "TaxG": "ES", "Amt": "1.00"}], "PayA": [{"_": "Pay", "Dsc": "Cash", "Amt": "6.00"}, {"_": "Pay", "Dsc": "EFT", "Amt": "5.44", "UID": "17075378 004704 004518"}], "TaxA": [{"_": "Tax", "TaxG": "A", "Prc": "22", "Net": "2.86", "TAm": "0.63", "Amt": "3.49"}, {"_": "Tax", "TaxG": "B", "Prc": "10", "Net": "6.32", "TAm": "0.63", "Amt": "6.95"}, {"_": "Tax", "TaxG": "ES", "Prc": "0", "Net": "1.00", "TAm": "0.00", "Amt": "1.00"}]}, {"_": "PayA"}, {"_": "TaxA"}]}
```

Alternatively XML:

```
<Tra>
  <ESR D="2017-10-01T09:28:13" TL="01" TT="1" TN="2087" T="11.44">
    <PosA>
      <Pos PN="1" IN="4012345678901" Dsc="ACID 500ml" TaxG="B" Amt="1.99"/>
      <Mod PN="1" Dsc="Special Offer" Amt="-0.50"/>
      <Pos PN="2" IN="9023456789001" Dsc="WHOLEWHEAT FUSILLI" TaxG="B" Amt="1.50"/>
      <Pos PN="3" IN="9023456789001" Dsc="WHOLEWHEAT FUSILLI" TaxG="B" Amt="1.50"/>
      <Pos PN="4" IN="4198765432109" Dsc="KITTEN PET FOOD 25x" TaxG="A" Amt="3.49"/>
      <Pos PN="5" Dsc="EMMENTAL CHEESE" TaxG="B" Amt="3.21" Qty="0.252" QtyU="kg" Pri="12.75"/>
      <Lin LAm="-----"/>
      <Lin Dsc="Subtotal" LAm="11.19"/>
      <Mod PN="2 3" Dsc="-25% Discount on Pasta" Amt="-0.75"/>
      <Pos PN="6" Dsc="Example Item" TaxG="ES" Amt="1.00"/>
    </PosA>
    <PayA>
      <Pay Dsc="Cash" Amt="6.00"/>
      <Pay Dsc="EFT" PayG="2" Amt="5.44" UID="17075378 004704 004518"/>
    </PayA>
    <TaxA>
      <Tax TaxG="A" Prc="22" Net="2.86" TAm="0.63" Amt="3.49"/>
      <Tax TaxG="B" Prc="10" Net="6.32" TAm="0.63" Amt="6.95"/>
    </TaxA>
  </Tra>
```

```

<Tax TaxG="ES" Prc="0" Net="1.00" TAmt="0.00" Amt="1.00"/>
</TaxA>
</ESR>
</Tra>

```

JSON Response:

```
{
  "TraC": {
    "SQ": 8946,
    "Result": {"RC": "OK"},
    "Fis": {"D": "10-12-18 09:27", "FN": "0039 0002 10122018 99MEX030623", "DN": "0002", "ZI": 39,
    "ID": "99MEX030623"}
  }
}
```

XML Response:

```

<TraC SQ="8946">
  <Result RC="OK"/>
  <Fis D="10-12-18 09:27" FN="0039 0002 10122018 99MEX030623" DN="0002" ZI="39" ID="99MEX030623"/>
</TraC>

```

Response Fis fields:

| Element | Descrizione | Description |
|---------|--------------------------|------------------------------|
| D | DATA ORA | fiscal printer Date and time |
| FN | NUMERO SCONTRINO FISCALE | receipt Fiscal Number |
| DN | | receipt Document Number |
| ZI | NUMERO CHIUSURA GIORNALE | Z report Index |
| ID | MATRICOLA FISCALE | fiscal printer ID |

Sample Printout (because printer is not yet in fiscal mode marked NON FISCALE):

* NON FISCALE *

DOCUMENTO COMMERCIALE
di vendita o prestazione

| DESCRIZIONE | IVA | Prezzo(€) |
|---------------------------|--------|--------------|
| ACID 500ml | 10,00% | 1,99 |
| Special Offer | 10,00% | -0,50 |
| WHOLEWHEAT FUSILLI | 10,00% | 1,50 |
| WHOLEWHEAT FUSILLI | 10,00% | 1,50 |
| KITTEN PET FOOD 25x | 22,00% | 3,49 |
| 0,252 kg x 12,75 | | |
| EMMENTAL CHEESE | 10,00% | 3,21 |
| Subtotal | | |
| -25% Discount on Pasta | 10,00% | -0,75 |
| TOTALE COMPLESSIVO | | 10,44 |
| di cui IVA | | 1,26 |

* NON FISCALE *

| | |
|-----------------------|-------|
| Pagamento contante | 10,44 |
| Pagamento elettronico | 0,00 |
| Non riscosso | 0,00 |
| Resto | 0,00 |
| Importo pagato | 10,44 |

11-02-2019 14:08
DOCUMENT N. 0028-0017

99MEY022311

* NON FISCALE *

| DETALIO FORME di PAGAMENTO | |
|----------------------------|------|
| Cash | 5,00 |
| EFT | 5,44 |

EPSON ITALIA SPA
CONTROLLO CONFORMITA' STAMPANTE FISCALE
SCONTRINO DI PROVA

NON FISCALE

| | EURO |
|------------------------|--------------|
| ACID 500ml | 1,99 |
| Special Offer | -0,50 |
| WHOLEWHEAT FUSILLI | 1,50 |
| WHOLEWHEAT FUSILLI | 1,50 |
| KITTEN PET FOOD 25x | 3,49 |
| 0,252 kg x 12,75 | |
| EMMENTAL CHEESE | 3,21 |
| Subtotal | |
| -25% Discount on Pasta | -0,75 |
| TOTALE EURO | 10,44 |
| Cash | 5,00 |
| EFT | 5,44 |
| RESTO | 0,00 |

| | SNF. |
|----------------|------|
| 18-10-17 13:47 | 17 |
| 99016493 | |
| NON FISCALE | |

For fiscal transactions layout file /EFR/rn/def/cfg/fiscal.pug is used.

Return/Void Transactions

Sample return transaction:

```
<Tra>
  <ESR T="-1.99" RFN="0029 0003 11022019 99MEY022311">
    <PosA>
      <Pos PN="1" IN="4012345678901" Dsc="ACID 500ml" TaxG="B" Amt="-1.99"/>
    </PosA>
    <PayA>
      <Pay Dsc="Cash" Amt="-1.99"/>
    </PayA>
  </ESR>
</Tra>
```

Sample void transaction:

```
<Tra>
  <ESR T="-1.99" RFN="0029 0003 11022019 99MEY022311" Void="1">
    <PosA>
      <Pos PN="1" IN="4012345678901" Dsc="ACID 500ml" TaxG="B" Amt="-1.99"/>
    </PosA>
    <PayA>
      <Pay Dsc="Cash" Amt="-1.99"/>
    </PayA>
  </ESR>
</Tra>
```

Following error codes may occur during return/void transactions:

| Error | Explanation |
|--------------------------------|--|
| #input parameters out of range | Wrong format of RFN |
| #receipt already refund | Tried to refund/void an already refunded receipt |
| #receipt already void | Tried to refund/void an already voided receipt |
| #this is a refund receipt | Tried to refund/void a refund receipt |
| #this is a void receipt | Tried to refund/void a void receipt |

Registering Non-Fiscal Transactions

It is recommended (but not mandatory) to register non-fiscal vouchers like Payin, Payout, Login... to have them stored in the respective journal.

Sample Non-Fiscal Transaction:

```
<Tra>
  <ESR TL="01" TT="1" TN="1234" NF="Login"/>
</Tra>
```

The NF tag declares the type of the transaction:

<ESR ... NF="XXX".

For printing the respective layout /EFR/rn/def/cfg/xxx.pug is used.

Like every other transaction the <Tra> or <ESR> element may contain additional data fields or arrays, which can be printed by referring to them in the layout file.

If it is required to store non-fiscal transactions without having printed them, set ESR tag Document Delivery DD="noprint":

```
<Tra>
  <ESR TL="01" TT="1" TN="1234" NF="internal" DD="noprint"/>
</Tra>
```

Daily Closure / Chiusura

The fiscal printer's closure function ("CHIUSURA FISCALE") is invoked by sending a non-fiscal signed transaction "Z Report":

```
<Tra>
  <ESR TL="01" TT="1" TN="1234" NFS="Z"/>
</Tra>
```

Response:

```
<TraC SQ="104">
  <Result RC="OK" />
  <Fis D="01-10-18 18:03" FN="0044 0025 11122018 99MEX030623" ZI="44" ID="99MEX030623"/>
  <Z T="145.00" CAmt="5.99" RAmt="5.99" VAmt="5.99" LastD="2018-09-30T09:28:18"
  LastSQ="15">
    <ZTaxA>
      <ZTax TaxI="0" Prc="0" Amt="12.00"/>
      <ZTax TaxI="1" Prc="22" TAmt="18.03" Amt="100.00"/>
      <ZTax TaxI="2" Prc="10" TAmt="3.00" Amt="33.00"/>
    </ZTaxA>
  </Z>
</TraC>
```

| | |
|------|--|
| T | Daily Total |
| CAmt | Daily Refund Amount (compatibility with MF) |
| RAmt | Daily Refund Amount |
| VAmt | Daily Void Amount |

ZTax elements are given per TaxI, the index in the printer's tax accumulators. ZTax elements are omitted if Amt is 0.

After closure the fiscal printer time is synchronized with the current system time.

Invoice

To print a fiscal invoice tag the transaction with Document Type ("Invoice") and – if available – Document Number (range 1-99999):

```
<Tra>
  <ESR TL="01" TT="1" TN="1234" DT="INVOICE" DN="25"/>
  ...
```

If no DN is given, the current invoice number issued by fiscal printer is included in the response:

```
<TraC SQ="88195">
  ...
  <Fis D="11-12-18 15:26" FN="0044 0025 11122018 99MEX030623" DN="25" ZI="44"
  ID="99MEX030623"/>
```

...

On fiscal invoices quantity and price are printed for every position.

Business Cases

Business cases are referenced in the document "IT Business Cases".

Other Printing Functions

Reprint Fiscal Transaction

URL: <http://localhost:5618/peri/print/reprint>
Method: POST
Body: empty
Query: RN client to use, default 'def'

This function invokes the reprint of the last fiscal receipt on the fiscal printer. No data can be provided with this call, which is not journalized.

Direct Printing

Other non-fiscal prints can be sent directly to the EFR print function, no journaling or logging is performed:

URL: <http://localhost:5618/peri/print>
Method: POST
Body: plain text (plain/text)
Query: RN client to use, default 'def'
lay layout to use

If JSON or XML data is sent in the request body, you can request format transformation by specifying a pug layout name:

/peri/print?lay=report2

Therefore you have to set the content type to "application/json" or "application/xml".

In a multi-client configuration you may have to specify ?RN= to address the printer.

Line Display

Display Item

During position and payment entry the cash register application should send referring description and price/amount information immediately to the customer display:

URL: <http://localhost:5618/peri/display>
Method: POST
Body: text
Query: RN client to use, default 'def'

The first two text lines are sent to the standard customer display, capacity is 20 characters per line. Like with all other requests UTF-8 encoding is expected by default.

Example Body:

```
Arrotondato 30,00 €  
Totale 30,01 €
```

Alternatively the following call may be used:

```
/peri/display?text=This+is+test+line+1+Line+2
```

Cash Drawer

By default the cash drawer should be managed by the cash register application.

Drawer pin, pulse on time and pulse off time can be set with the attribute "Drawer_Pin=PIN:ON:OFF". Default value is "2:15:15".

Open Drawer and Wait

URL: <http://localhost:5618/peri/drawer/wait>
Method: POST
Query: RN client to use, default 'def'

The cash drawer is opened immediately, after closing the response is sent. As the drawer might be left open longer time, an intermediate HTTP status "102 Processing" is sent within every 30 seconds till final closing "200 OK". Usually the application shows a message CASSETTO APERTO and locks further operator actions while the drawer is open.

Open Drawer and Poll

URL: <http://localhost:5618/peri/drawer>
Method: POST
Query: RN client to use, default 'def'

Opens and responds immediately. Afterwards you can poll the drawer state using request

URL: <http://localhost:5618/peri/drawer>
Method: GET
Query: RN client to use, default 'def'

(e.g. once per second), which will signal

```
{"PeriDrawer": "Epson_FP:open"}
```

or (when request header accept=text/xml is set):

```
<DrawerState>  
  <PeriDrawer>Epson_FP</PeriDrawer>  
</DrawerState>
```

until final closing

```
{"PeriDrawer": "Epson_FP"}
```

Manual Drawer Open

Manual drawer open (with key) and close events are logged in the transaction journal.

Automatic Drawer Open

The fiscal printer is set to programmatic drawer control on EFR startup. You can change this behaviour to automatic open per by defining your own initialization sequence in text file
/EFR/rn/def/cfg/Epson_FP.cfg:

```
{"start": ["4014261", "4014291"]}
```

The command "4014261" enables automatic drawer opening.

Drawer Parameters

Some cash drawers do not work with the standard configuration. Therefore you can use the profile attribute "Drawer_Pin"

e.g.: Drawer_Pin=2:15:15

First parameter: DRW PIN

Second parameter: PULSE ON Time

Third parameter: PULSE OFF Time

Printer State

URL: <http://localhost:5618/peri/print/state>

Method: GET

Response:

```
{
  "ModuleName": "Epson_FP",
  "ID": "99MEY022311",
  "Info": "",
  "Drawer": "",
  "PaymentRounding": 0,
  "CPU": "11.02",
  "MF_STAT": "0",
  "MF_REL": "04.0",
  "MF_STAT0": "00110",
  "LastStateUpdate": 1643814294263,
  "ZI": 21,
  "LastZIUpdate": 1643814275251,
  "RT_TYPE": "M",
  "RT_MAIN": "02",
  "RT_SUB": "08",
  "RT_DAY": "1",
  "RT_NWP": "0",
  "RT_SEND": "0000",
  "RT_OLD": "0000",
  "RT_REJ": "0059",
  "RT_EXPCD": "051021",
  "RT_EXPCA": "110138",
  "RT_BUILD": "0255",
  "RT_DGFE": "2",
  "RT_TRAIN": "1",
  "LT_SEND": 0,
  "LT_OLD": 0,
  "LT_REJ": 0,
  "LT_ACC": 0,
```

```

        "SimpleState": {
            "DrawerOpen": false,
            "PaperNearEnd": false,
            "PaperEnd": false,
            "CoverOpen": false,
            "MemAlmostFull": false,
            "MemFull": false,
            "CertExpires": "2021-10-05T00:00:00"
        }
    }
}

```

or (with request header accept=text/xml):

```

<PrintState>
    <ModuleName>Epson_FP</ModuleName>
    <ID>99MEY022311</ID>
    <Info/>
    <Drawer/>
    <PaymentRounding>0</PaymentRounding>
    <CPU>11.02</CPU>
    <MF_STAT>0</MF_STAT>
    <MF_REL>04.0</MF_REL>
    <MF_STATO>00110</MF_STATO>
    <LastStateUpdate>1643814330345</LastStateUpdate>
    <ZI>21</ZI>
    <LastZIUpdate>1643814306309</LastZIUpdate>
    <RT_TYPE>M</RT_TYPE>
    <RT_MAIN>02</RT_MAIN>
    <RT_SUB>08</RT_SUB>
    <RT_DAY>1</RT_DAY>
    <RT_NWP>0</RT_NWP>
    <RT_SEND>0000</RT_SEND>
    <RT_OLD>0000</RT_OLD>
    <RT_REJ>0059</RT_REJ>
    <RT_EXPCD>051021</RT_EXPCD>
    <RT_EXPCA>110138</RT_EXPCA>
    <RT_BUILD>0255</RT_BUILD>
    <RT_DGFE>2</RT_DGFE>
    <RT_TRAIN>1</RT_TRAIN>
    <LT_SEND>0</LT_SEND>
    <LT_OLD>0</LT_OLD>
    <LT_REJ>0</LT_REJ>
    <LT_ACC>0</LT_ACC>
    <SimpleState>
        <DrawerOpen>false</DrawerOpen>
        <PaperNearEnd>false</PaperNearEnd>
        <PaperEnd>false</PaperEnd>
        <CoverOpen>false</CoverOpen>
        <MemAlmostFull>false</MemAlmostFull>
        <MemFull>false</MemFull>
        <CertExpires>2021-10-05T00:00:00</CertExpires>
    </SimpleState>
</PrintState>

```

ModuleName: Name of the printer module

ID: printer ID

ZI: Z-report index

CPU: Fiscal firmware version

MF_STAT: Fiscal memory status

0... OK

1... Error

2... Full

3... Overflow

MF_REL: Fiscal memory firmware version

MF_STATO: 5 bytes

First byte: printer state

- 0... OK
- 2... paper nearly empty
- 3... No paper or cover open

Second byte: Electronic Journal:

- 0... OK
- 1... nearly full
- 2... Unformatted
- 3... Previous
- 4... From another fiscal printer
- 5... Full

Third byte: Cash drawer state:

- 0... open
- 1... closed

Fourth byte: Receipt / Credit Note / Invoice

- 0... Fiscal receipt, credit note or direct invoice open
- 1... Fiscal/Non-fiscal Closed
- 2... Non-fiscal receipt open
- 3... Payment in progress (Fiscal receipt or direct invoice open)
- 4... Fiscal receipt – Error whilst transmitting ESC/POS commands (at receipt ending phase)
- 5... Negative fiscal receipt, credit note or direct invoice
- 6... Non-fiscal receipt – Error whilst transmitting ESC/POS commands
- 7... JavaPOS-UPOS mode – Awaiting closure command (Fiscal receipt, credit note or direct invoice)
- 8... Free or direct invoice open
- 9... Credit note opened via the fiscal protocol or web service
- A... Box office ticket open
- B... Box office ticket closed

Fifth byte: Operative

- 0... Stato Registrazione (MONITOR)
- 1... X State
- 2... Z State
- 3... S State
- 4... Box office
- 5... Keyboard opened credit note

RT_TYPE:

- RT Type
- I... Internal (fixed premises)
- E... External (market, street, door-to-door and seasonal traders)
- P... Palmtop
- M... MF type non telematics fiscal printer converted to RT
- S... RT server

RT_MAIN:

- Main status
- 1... Not in service
- 2... In service

RT_SUB:

- Sub Status
- 5... Da Censire
- 6... Censito
- 7... Attivato
- 8... Programmato RT

| | |
|-----------|--|
| RT_DAY: | Daily Open 0... Daily Open FALSE 1... Daily Open TRUE |
| RT_NWP: | Non working period 0... ready for transactions 1... Z report must be performed |
| RT_SEND: | Number of files to send |
| RT_OLD: | Number of files considered old |
| RT_REJ: | Number of rejected files |
| RT_BUILD: | Firmware built number |
| RT_DGFE: | Type of DGFE file system 0... NO RT 1... RT_TypeA 2... RT_typeB |
| RT_TRAIN: | Training mode (1... enabled) |
| RT_EXPCD: | Date of expired Device Certificate |
| RT_EXPCA: | Date of expired Communication Authority certificate |
| LT_SEND: | Number of Lottery receipt in the folder TO SEND |
| LT_OLD: | Number of daily files waiting to be sent to the tax authority older than a configurable number of days |
| LT_REJ: | Number of Lottery Receipt rejected from TA |
| LT_ACC: | Number of Lottery Receipt accepted from TA |

Lottery State

| | |
|---------|---|
| URL: | http://localhost:5618/peri/print/state/lottery |
| Method: | GET |
| Query: | ZI Z-index (required) D Date DDMMYY (required) DN Receipt number RN client to use, default 'def' |
| | |

If receipt number is omitted, the request returns all lottery files of the current day/ZI that received an error when sending to authority.

Response:

```
[
  {
    "Code": "01",
    "ErrorCode": "FFFFF",
    "AnswerId": "",
    "DN": "0216-0027",
    "ErrorCode": "To Send"
  }
]
```

Following Errorcodes may occur:

| Code | Description | Typology |
|-------|---|----------|
| 00000 | XML not conforming to the layout | blocking |
| 00300 | Exceeded the maximum number of elements in the XML path | blocking |

| | | |
|-------|---|-----------|
| 00301 | XML file size constraints exceeded | blocking |
| 00302 | Service temporarily unavailable | temporary |
| 00303 | Device not 'IN SERVICE' | blocking |
| 00304 | Invalid certificate | blocking |
| 00305 | The type of the device is not valid | blocking |
| 00306 | Duplicate transmitted file | blocking |
| 00307 | The date of the commercial document is in the future | warning |
| 00308 | Payment data inconsistent | warning |
| 00309 | Exceeded the maximum number of calls in the time unit | temporary |
| 99999 | XML with Signature does not integrate | blocking |

PUG Layout

Configuration of print layouts is done using the HTML templating engine PUG (former JADE). Language details can be found on <https://pugjs.org>.

In this case HTML acts as device independent meta language, the EFR renders the content as possible onto the line printer.

PUG Editor

Workflow:

- start `http://localhost:5618/peri/pugedit` with a browser
- [open] e.g. file `/EFR/IT/cfg/fiscal.pug.template`
- copy your sample transaction data into the textbox at the left side (JSON only)
- the right side box shows the transaction data transformed to HTML
- modifications in PUG code (center box) are shown immediately
- when finished [download] e.g. as `fiscal.pug` and copy it to `/EFR/rn/def/cfg/`

EFR now transforms every transaction into HTML and renders it to the line printer. By their nature fiscal printers provide only very limited formatting functionality.

At the moment the editor implementation is basic, but it is going to be evolved as base technique for transaction rendering and print layout.

Layout Example

`/EFR/app/IT/cfg/fiscal.pug.template:`

```
//- fiscal.pug - Layout for Fiscal Transactions
//- fiscal.pug - Layout for Fiscal Transactions
-
  function fStr(str) { return str || str === 0 ? str.toString().replace(/\r/g, '') : '' }
  function fDec(dec) { return fStr(dec).replace(/\./, ',') }
  function fAmt(Amt) { return fDec(Amt && Amt.toFixed ? Amt.toFixed(2) : Amt) }
  function fPrc(Prc) { return fDec((Prc+'%').replace(/%$/,'%')) }
  function fD(D)    { return D.substr(8, 2) + '-' + D.substr(5, 2) + '-' + D.substr(2, 2) }
  function fTime(D) { return D.substr(11, 8).replace(/^0/, '') }

mixin pos(p)
  if p.Qty && p.Pri
    .DscTxt= fDec(p.Qty) + ' ' + fStr(p.QtyU) + ' x ' + fAmt(p.Pri)
  if p.TaxG
    .Dsc= fStr(p.Dsc)
    .TaxG= fStr(p.TaxG)
  else
    .Dsc2= fStr(p.Dsc)
  if p.Amt
    .Amt= fAmt(p.Amt)
  else
    .Amt= fStr(p.LAmt)

mixin tot(t)
  hr
  .Tot
    .Dsc2 TOTAL
    .Amt= fAmt(t)
  hr
```

```

mixin pay(p)
  if p.Amt
    .DscTxt= fStr(p.Dsc)
    .Amt= fAmt(p.Amt)
  else
    .DscTxt= ' ' + fStr(p.Dsc)
    .Amt= fStr(p.LAmt)

mixin tax(t)
  .DscTax
    .Prc= fPrc(t.Prc)
    .Net= fAmt(t.Net)
    .TAmt= fAmt(t.TAmt)
  .TaxG= fStr(t.TaxG)
  .Amt= fAmt(t.Amt)

mixin head(h)
  if h
    br
    each v, k in h
      if '_' !== k
        .Txt= v._ ? fStr(v.value) : fStr(v)

mixin foot(f)
  if f
    br
    each v, k in f
      if '_' !== k
        .TxtCenter= v._ ? fStr(v.value) : fStr(v)

html
  head
    title= ESR.DT||ESR.NF||'Receipt'
    style(type='text/css').
      body {
        font-family: Consolas, 'Courier New';
        width: 46ch;
        background-color: white;
      }
      .Txt { white-space: pre; }
      .TxtCenter {
        white-space: pre;
        text-align: center;
      }
      .Net, .TAmt, .TaxG, .Amt { text-align: right; }
      .Pos, .Mod, .Lin, .Tot, .Pay, .Tax, .ItemHead {
        display: grid;
        grid-template-columns: 37ch 1ch 8ch;
      }
      .Dsc { grid-column: 1; }
      .Dsc2, .DscTxt { grid-column: 1 / span 2; }
      .DscTxt { white-space: pre; }
      .TaxG { grid-column: 2; }
      .Amt { grid-column: 3; }
      .DscTax {
        width: 90%;
        display: grid;
        grid-template-columns: 4fr 10fr 10fr;
      }
      .Print { display: none; }
      @media fiscal {
        .Disp, .Tax, .Tot { display: none; }
        .Print { display: block; }
      }
  body

```

```

// - Display Cfg Location data
if Cfg && Cfg.Cmp && Cfg.Loc
    .TxtCenter.Disp= fStr(Cfg.Cmp.Nam)
    .TxtCenter.Disp= fStr(Cfg.Loc.Adr) + ' ' + fStr(Cfg.Loc.Zip) + ' ' +
fStr(Cfg.Loc.City)
    .TxtCenter.Disp= 'TaxId: ' + fStr(Cfg.Cmp.TaxId)
    .TxtCenter.Disp
    br

// - Header
+head(ESR.Head)

// - Itemheader
hr
.Lin.Disp
    .Dsc Item
    .TaxG %
    .Amt Amt
.Disp
hr

// - required, do not change
if ESR.PosA
    each p in ESR.PosA
        div(class=p._)
        +pos(p)
+tot(ESR.T)
if ESR.PayA
    each p in ESR.PayA
        div(class=p._)
        +pay(p)
if ESR.TaxA
    br
    each t in ESR.TaxA
        div(class=t._)
        +tax(t)

// - Footer
.Print
    br
+foot(ESR.Foot)
hr
.TxtCenter= 'Terminal: ' + fStr(ESR.TL) + '/' + fStr(ESR.TT) + ' ' + fStr(ESR.DT)
|| ESR.NF || 'Receipt') + ': ' + fStr(ESR.TN)
    .TxtCenter= fD(ESR.D) + ' ' + fTime(ESR.D)
.Txt= fD(ESR.D) + ' ' + fTime(ESR.D)

```

Invoice Ctm Header Example

If ESR.Ctm shall be printed on invoices, replace +head(ESR.Head) with following code in invoice.pug:

```

if ESR.Ctm
    .Txt=ESR.Ctm.Nam
    .Txt=ESR.Ctm.Adr
    .Txt=ESR.Ctm.Zip + ' ' + ESR.Ctm.City
    .Txt=ESR.Ctm.TaxId

```

Restrictions

The fiscal printer allows only layout of header and footer lines and item text, amounts are formatted by the printer.

Although transaction data usually is provided with UTF-8 encoding, only PC437 characters can be printed. Printing of the Euro symbol is not allowed (is replaced by "£").

Barcode

To add a barcode to a fiscal or non-fiscal layout enter:

```
div
  img(data-barcode="type:ean13" data-value="123456789012" style="width:30ch;height:3ch")
```

The data-barcode attribute defines barcode parameters, data-value the content. Style (local or CSS) is used for dimensioning.

data-barcode

| <i>type</i> | <i>character set (as regular expression)</i> |
|-------------|--|
| upc-a | 00 [0-9]{11,12} |
| upc-b | 01 [0-9]{10,11} |
| ean13 | 02 [0-9]{12,13} |
| ean8 | 03 [0-9]{7,8} |
| code39 | 04 [0-9A-Z \$%*+-./]{1,34} |
| itf | 05 [0-9]{2,62} |
| codabar | 06 [0-9A-Da-d\$+-.&/:]{1,47} |
| code93 | 72 [\u0000-\u007f^{ }]{1,59} |
| code128 | 73 [\u0000-\u007f^{ }]{1,98} (default) |
| gs1-128 | 74 [\u0000-\u007f^{ }]{2,96} |
| qr | 91 QR type 1, 256 characters max. |
| qr2 | 92 QR type 2 |
| | 75 GS1 DataBar Omnidirectional |
| | 76 GS1 DataBar Truncated |
| | 77 GS1 DataBar Limited |
| | 78 GS1 DataBar Expanded |

Optional further parameters (refer to printer documentation):

| <i>Parameter</i> | <i>default value</i> | <i>description</i> |
|------------------|----------------------|---|
| pos | 901 | center |
| w | 3 | module width in pixels, overrides style width |
| h | 100 | barcode height in pixels, overrides style height |
| hri | 0 | human readable interface: 0=no, 1=above, 2=below, 3=above and below |
| hri_f | 0 | HRI font: 0=Font A, 1=Font B |

Example of a very small barcode with human readable text below:

```
div
  img(data-barcode="w:1;h:30;hri:2" data-value="This is a test")
```

data-value

For EAN types an eventually missing check digit is computed by EFR.

The data-value can be set programmatically:

```
div
  - var x = ESR.TL + ("0" + ESR.TT).slice(-2) + ("00000" + ESR.TN).slice(-6)
  img(data-value=x style="width:30ch;height:3ch")
```

Graphic Printing

A company logo should be saved directly on the printer using the manufacturer's utility program (e.g. EpsonFpWizard.exe) along with fixed header and footer lines, do not use runtime Graphic Printing.

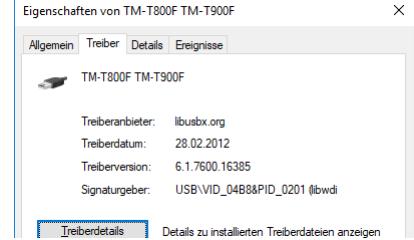
Appendix

Attributes

Following EFR profile attributes are specific to the IT fiscal module.

| | |
|-----------------------------|---|
| Fiscal_Rounding | Activate automatic rounding by EFR |
| Drawer_Pin | [PIN]:[PULSE ON ms]:[PULSE OFF ms] - default: 2:15:15 |
| IT_DefaultPaymentGroupIndex | Set default payment group index if one-digit PayG is sent - default: 00 |
| IT_RTInvoicePaymentGroup | Change PayG 5-04 to other PayG |

Troubleshooting

| Error | Explanation |
|--|---|
| LIBUSB_ERROR_ACCESS | on Linux access to USB devices sometimes has to be granted manually, e.g. by editing /lib/udev/rules.d/50-udev-default.rules. For Epson FP insert: SUBSYSTEM=="usb", ATTRS{idVendor}=="04b8", ATTRS{idProduct}=="0201", MODE="0666" |
| LIBUSB_ERROR_NOT_SUPPORTED | install/reinstall the appropriate Windows USB driver (see section 0 Printer Installation); in "zadig" you may have to Options>List All Devices before |
| LIBUSB_ERROR_IO LIBUSB_TRANSFER_STALL | on Windows possibly a driver problem, check Windows hardware manager:  |
| Epson_FP:#timeout on page "Stato" http://localhost:5618/config | printer is connected, but timed out: check printer USB port configuration (see 0 Printer Installation Epson FP-90III) or restart printer |
| Epson_FP:#opening | turn printer off, wait 5 seconds and turn it on again - it may last up to 90 seconds until the printer startup is completed and EFR has reopened the port |
| #PRINTER_OFFLINE | paper out or printer cover opened |

In case of an error (Result.RC != "OK"), for this transaction a detailed log file is stored in directory /EFR/rn/def/log/.

User Messages

| UserMessage | Explanation |
|---|--|
| Carta Scontrino | reported once a day, if printer paper is low |
| Stampante offline (fine carta o coperchio aperto) | in connection with ErrorCode #PRINTER_OFFLINE on paper out or if printer cover is opened |

EPSON FP-90III Error Codes

The following table details the individual error codes and the possible motives:

| Code | Error | Description |
|------|----------------------|--|
| 02 | CARTA SCONTRINO | It is a warning rather than an error. Flag SET 14/11 activates or deactivates the warning. If activated and the paper is low, the printer generates this warning in response to the payment or closure commands. The UPOS fiscal driver automatically deactivates this warning; paper status is determined through the regular printer status requests. |
| 03 | OFFLINE | The printer has gone offline ("ERROR" LED ON). Either the paper has finished or the cover has been opened. |
| 07 | SLIP KO | Only valid with the FP-H6000 or if an external Slip printer is connected to the fiscal printer via the serial port. Indicates a slip printer problem. |
| 08 | TASTO ERRATO | Invalid key press. |
| 09 | DATA INVERIORE | Invalid past date entered. The date cannot be earlier than the date of the last fiscal closure report. |
| 10 | DATA ERRATA | Bad date format. E.g. 33022017. |
| 11 | SEQUENZA ERRATA | Command sequence not allowed. The command cannot be used at this point in the sequence. See examples below. |
| 12 | DATI INESISTENTI | Inexistent data. For example, attempting to use a PLU that has not been programmed. |
| 13 | VALORE ERRATO | Generic error. One or more fields contains an erroneous value. |
| 14 | PROG MATRICOLA | No fiscal serial number has been programmed. |
| 15 | GIA ESISTENTE | An attempt has been made to perform an operation that has already been carried out. For example trying to program a PLU with a barcode that has already been set on another PLU. |
| 16 | NON PREVISTO | Generic error. An invalid index parameter or an nonexistent H1 H2 command pair has been received. |
| 17 | IMPOSSIBILE ORA | Generic error. It is not possible to carry out the operation at this time. |
| 18 | NON POSSIBILE | Generic error. It is not possible to carry out the operation. |
| 19 | SCRITTA INVALIDA | Obsolete. |
| 20 | SUPERA VALORE | The amount is greater than the maximum allowed. |
| 21 | SUPERA LIMITE | A parameter value is outside the permitted range. |
| 22 | NON PROGRAMMATO | The printer has received a command that requires prior programming. |
| 23 | CHIUDI SCONTRINO | The maximum number of operations has been reached and the receipt must be closed with a single payment or cancelled. The current limit is around 1000 operations. |
| 24 | CHIUDI PAGAMENTO | The maximum number of operations has been reached whilst partial payments are being printed. The receipt must be closed with a single final payment or cancelled. The same 1000 operations limit applies. |
| 25 | MANCA OPERATORE | Only valid if operator mode has been enabled. No operator has been selected. |
| 26 | CASSA INFERIORE | An attempt has been made to perform a cash out operation or receipt change of an amount greater than the current cash drawer total. |
| 27 | OLTRE PROGRAMMAZIONE | The sale price (unit price x quantity) is greater than the programmed department limit. |
| 28 | P.C. NON CONNESSO | No PC or server connection or bad sequence termination. Server includes SMTP mail server or receipt as image server (SET 33). |

| | | |
|--|-------------------------|---|
| 29 | MANCA MODULO | Only valid with the FP-H6000 or if an external Slip printer is connected to the fiscal printer via the serial port. Indicates that no form has been inserted. |
| 30 | CHECKSUM ERRATO | Partita IVA (business tax code) or codice fiscale (personal tax code) checksum error. |
| 34 | MANCA ATTIVAZIONE | Missing activation. For example, attempt to open an invoice when invoice printing has been deactivated. Also, if receipt as image mobile number verification has failed. |
| 35 | "SLIP: CONNESSIONE?" | Only valid with the FP-H6000 or if an external Slip printer is connected to the fiscal printer via the serial port. Indicates a slip printer connection problem. |
| 35 | RIMOUVERE MODULO | Only valid with the FP-H6000 or if an external Slip printer is connected to the fiscal printer via the serial port. Indicates form removal. More of an instruction than an error. |
| 38 | EFT-POS in ERRORE | EFT-POS error |
| 01,04, 05,06, 28,31, 32,33, 36 | NOT USED | |

Common errors

| Condition | Code |
|--|----------|
| Sale price (unit price x quantity) greater than the programmed department limit | 27 |
| Zero quantity | 21 |
| Operator number outside of permitted range | 16 |
| Department zero | 16 |
| Display justification code outside of permitted range | 11 or 16 |
| Discount or surcharge of zero | 16 |
| Discount type 0 on a correction (storno as previous transaction) | 11 |
| Surcharge type 5 on a correction (storno as previous transaction) | 11 |
| Subtotal discount when subtotal is zero or negative | 17 |
| Newer models only – 1-075 native command for barcodes and QR codes with direct invoices and firmware < 4.016 | 17 |
| Attempt to set additional header type 1 lines with fiscal receipt or credit note already open | 17 |
| Attempt to set additional header type 5 lines with direct invoice already open | 17 |
| Attempt to set client type 6 lines with direct invoice already open | 17 |
| Payment received but already completed | 11 |
| Closure command 1-087 before payment | 11 |
| Closure command 1-087 and insufficient payment | 11 |
| Payment received whilst subtotal is negative | 17 |

| | |
|---|----|
| Subtotal obligation (flag 4-014 / 13) not respected | 17 |
| Unit price that does not respect the Valore Imputazione (4-015 / 01) rules | 13 |
| Payment type outside of permitted range | 16 |
| Payment index outside of permitted range | 16 |
| Attempt to program retail header lines whilst the printer is in the "DAY OPENED" logical state | 17 |
| Attempt to set the date whilst the printer is in the "DAY OPENED" logical state | 17 |
| Attempt to enter training mode whilst the printer is in the "DAY OPENED" logical state | 17 |
| If flag 4-014 / 03 = Sì – Native command 1-050 to open the cash drawer received whilst a document is open | 11 |

Document Revision History

| Revision | Date | Changes |
|----------|------------|--|
| 1.00 | 2017-09-12 | Initial Version |
| 1.01 | 2017-09-28 | Added /peri functions, layouting, DT, DN |
| 1.02 | 2017-10-16 | |
| 1.03 | 2017-11-13 | VAT Handling |
| 1.04 | 2017-11-20 | Error Codes |
| 1.05 | 2017-11-23 | PUG Editor |
| 1.06 | 2017-12-04 | additional Support Information |
| 1.07 | 2018-02-07 | support LIBUSB_ERROR_NOT_SUPPORTED |
| 1.08 | 2018-05-03 | EPSON TMVirtualPortDriver860a |
| 1.09 | 2018-08-07 | Correction <Fis> Response |
| 1.10 | 2018-08-31 | NFS="BAL" changed to NFS="Z" |
| 1.20 | 2019-02-11 | changes regarding RT mode printers |
| 1.21 | 2019-02-12 | Payment types |
| 1.30 | 2019-08-27 | RS232 connection |
| 1.40 | 2019-10-02 | Ethernet connection |
| 1.50 | 2019-11-26 | Lottery |
| 1.51 | 2019-11-27 | Line Display request body example |
| 1.60 | 2020-03-24 | Additional Lottery Information |
| 1.61 | 2020-04-21 | Updated response in lottery state |
| 2.00 | 2020-12-23 | RT 2.0 |
| 2.01 | 2021-01-22 | extended lottery state response |
| 2.10 | 2021-02-15 | RT 2.0 Changes |
| 2.11 | 2021-03-08 | split PayG 2 to 2-00 (Credit) and 2-XX (Credit Card) |
| 2.12 | 2021-03-18 | Updated supported Printer Firmware Credit Card Handling Invoice Ctm Header Example |
| 2.30 | 2021-10-12 | RN query parameter and document formatting |
| 2.31 | 2021-10-18 | EFR Installation 2.x |
| 2.40 | 2022-02-02 | new field SimpleState on /peri/print/state response |