

CONFIDENTIAL

Incotex Group

FISCAL PRINTER DRIVER

(beta release)

Revisions:

First edition: May 2011

Second edition: May 2012

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PREFACE

This technical reference describes the DRIVER's command set and programming techniques related to it.

1. General

This DRIVER is intended to simplify the Incotex's Electronic Fiscal Device (hereinafter referred to as EFD) interface. Full communication with the EFD is realized with simple text files. Upon starting DRIVER is running in background. There is an "FP" icon in tray so the user can manage the in/out folders, and start/stop DRIVER.

2. Document conventions

Style	Used for
[]	Optional parameter;
	One of two possible choices;
"TEXT1"	ANY TEXT. Text have to be quoted by "" (ASCII 0x22);
"TEXT2"	ANY TEXT. Text have to be quoted by "" (ASCII 0x22);
QTTY	QUANTITY. Number can be with up to 3 decimal digits; EXAMPLES: 3, 5.324
MSRUNIT	MEASUREMENT UNIT. Text, up to 5 characters; EXAMPLE: "pcs" "l" "kg." etc.
VAT	VAT GROUP. Letter 'V' followed by VAT number. EXAMPLE: V1 - EXEMPT; V2 - VAT A 18.00%; V3 - VAT B 0.00%
DEPT	DEPARTMENT NUMBER. Letter 'D' followed by department number (1-8); EXAMPLE: D1, D2, D8;
AMOUNT	MONEY AMOUNT. Can be with up to 2 decimal digits.

3. Input file

Driver waits for input text file in predefined input folder. When such file appears in this folder, DRIVER proceeds and deletes it.

Input file contains all information to be sent to the EFD by DRIVER. The text information within input file can be entered in both upper and lowercase. All spaces and tabulations are ignored (excluding those in quoted messages).

Each valid line of the input file has the following structure:

X_XXX [data] [// comment]

Where:

X_XXX command describing the data's purpose. This command has to be the first meaningful information of the line;

data (optional). Contains parameters corresponding to the X_XXX command;

// (optional). All information after this mark is ignored. Used for comments only.

4. Input file processing

Input file proceeds in two stages:

- Analyzing input file. At this stage DRIVER analyzes commands and related data. If there are errors, the output file is created in predefined ERR folder.
- Communication stage. If no errors occur during analyzing stage, DRIVER proceeds to next stage. At this phase all necessary commands are generated and issued to the EFD. If any errors occur during this process, the output file is created in predefined ERR folder.
- End of file proceeding. If no errors occur during communication stage, DRIVER creates output file in predefined OUT folder.

5. Output files

DRIVER creates file in predefined ERR or OUT folders. The file name consist the original input file name (without .txt extension) together with date and time stamp added.

For example:

Input file name: bill00432.txt. Output file name: bill00432_08052011_140131.txt.

Please note that all out file names will have unique names.

5.1. OUT folder files

After a successful input file proceeding DRIVER creates text files in OUT folder. This file contains all proceeded valid lines from original input file together with comments regarding the communication sessions to/from EFD.

5.2. ERR folder files

If any errors occur during input file proceeding the DRIVER creates text file in OUT folder. Resulting ERR file contains at the beginning all error names and descriptions, followed by the usual content of the OUT file. This option is useful for programmer about the information for the errors, or warnings in the main application.

6. Installation and starting

To start the DRIVER first the EFD driver has to be installed. Please, uninstall all previous drivers, regarding EFD devices.

Use FDUSBx86_setup.exe, or FDUSBx64_setup.exe for 32 or 64bit Windows version respectively.

To start driver – just run the application FPDriver_32.exe or FPDriver_64.exe for 32 or 64bit Windows version respectively.

In tray red “FP” icon will appear. Connect the fiscal printer and switch it on. The “FP” icon becomes green.

Click on the icon. Dialog will appear. You can edit the input, err and out folders’ names. By default they have the following names:

- Input folder: “c:\dpool\In”;
- Out folder: “c:\dpool\Out”;
- Err folder: “c:\dpool\Err”;

Click “Start” button and then “OK”. The driver is ready to operate.

7. Quick start

Working with fiscal printer becomes now extremely easy.

To create a non fiscal receipt you just have to type a text command before your text lines and add quota:

```
R_TXT "Text line1"
```

```
R_TXT "Text line2"
```

Etc...

DRIVER will recognize it as a non fiscal receipt and will print it.

Creating a fiscal receipt is also extremely easy. The simplest way is to type a transaction command amount and VAT group, or department:

```
R_TRP 100.00v1
```

Or even only:

```
R_TRP d1
```

In first case, a complete fiscal receipt will be printed with one transaction of 100.00 TCH in VAT group 1 (EXEMT);

In the second case a complete fiscal receipt will be printed with one transaction in department 1 with the price – preprogrammed department price, and in preprogrammed department VAT group.

To issue a daily Z report, just create input file using the following command:

```
C_DYZ
```

That's all. The DRIVER will make all necessary steps to issue daily Z report.

8. Commands description

In this chapter a detailed description of each supported command is provided

8.1. Common rules

All commands are divided into two main groups:

- EFD Commands. All commands start with 'C_';
- Receipt commands. All commands start with 'R_'

8.2. Command list

- C_DYZ EFD issues daily Z report;
- C_DYX EFD issues daily X report;
- C_VALL EFD cancels all previous transactions and closes fiscal receipt with zero amount;
- R_TRP Transaction;
- R_TRD Transaction displaying to the customer display;
- R_STT Subtotal;
- R_PM1 Cash payment;
- R_PM2 First additional payment;
- R_PM3 Second additional payment;
- R_DMA Discount/markup in amount;
- R_DMP Discount/markup in percent;
- R_VRN Customer VRN number; *Not supported for some counters
- R_NAM Customer name; *Not supported for some counters
- R_TIN Customer TIN number; *Not supported for some counters
- R_ADR Customer address; *Not supported for some counters
- R_TXT Fiscal/non fiscal text;
- C_FMRS Short report from fiscal memory
- C_FMRF Detailed report from fiscal memory

8.3. Commands description

8.3.1. Name – C_DYZ

Format: C_DYZ
Range: none
Description: Send daily Z report command to EFD. Stores all return information in OUT folder;
Examples: none

8.3.2. Name – C_DYX

Format: C_DYX
Range: none

Description: Send daily Z report command to EFD. Stores all return information in OUT folder;

Examples: none

8.3.3. Name – C_VALL

Format: C_VALL

Range: none

Description: EFD cancels all previous transactions and closes fiscal receipts with zero amounts. All internal registers are cleared, and EFD is ready to print new receipt.

Examples: none

8.3.4. Name – R_TRP

Format: R_TRP "Text1""Text2"[QTTY[MSRUNIT]*][AMOUNT VAT] | [AMOUNT] DEPT]

Range: Text1 and Text2 have to be quoted;
MSRUNIT is 5 characters max;
VAT numbers are 1,2,3,4.....;
DEPT numbers are from 1 to 8 (incl);
AMOUNT – up to 13* digits. The amount can be entered with or without 2 decimal digits.

Description: Using this command the fiscal receipt is printed. The transaction will be made according to above data. There are some restrictions when DEPT sale is required:

- Text1 and Tex2 are printed as fiscal text;
- MSRUNIT is ignored;

Examples: There are many ways to make transactions:
R_TRP d1
R_TRP 100.00V2
R_TRP "Coca cola"2pcs.*1400.00V2
R_TRP "Beverages""Pork"1.500kg.* 3500.00V1
R_TRP "Mineral water"3*30000.00 D8
Etc.

** For some modifications amount is up to 9 digits.*

8.3.5. Name – R_TRD

Format:	R_TRD "Text1""Text2"[QTTY[MSRUNIT]*][AMOUNT VAT] [[AMOUNT] DEPT]
Range:	Text1 and Text2 have to be quoted; MSRUNIT is 5 characters max; VAT numbers are 12,3,4..... DEPT numbers are from 1 to 8 (incl); AMOUNT – up to 13* digits. The amount can be entered with or without 2 decimal digits.
Description:	Using this command the fiscal receipt is printed. The transaction will be made according to above data. Text1 and Tex2 are provided, Text 1 is printed as fiscal text, and Text2 is printed as part of transaction and is displayed on external client display. If only Text2 is provided it is printed as part of transaction and is displayed on external client display There are some restrictions when DEPT sale is required: <ul style="list-style-type: none">- Text1 and Tex2 are printed as fiscal text;- MSRUNIT is ignored;
Examples:	There are many ways to make transactions: R_TRP d1 R_TRP 100.00V2 R_TRP "Coca cola"2pcs.*1400.00V2 R_TRP "Beverages""Pork"1.500kg.* 3500.00V1 R_TRP "Mineral water"3*30000.00 D8 Etc.

** For some modifications amount is up to 9 digits.*

8.3.6. Name – R_STT

Format:	R_STT [P][D]
Range:	D – displays subtotal on external client display; P – prints subtotal in receipt;
Description:	Sends subtotal command to EFD. It is useful in cases when the subtotal have to be shown onto external display, or when discount or markup has to be made over subtotal. If no parameters are specified, P is default;
Examples:	R_STT pd

R_STT d
R_STT P
R_STT DP

8.3.7. Name – R_PM1, R_PM2, R_PM3

Format: R_PMx [AMOUNT]
Range: PM1 – cash payment;
PM2 – First additional payment;
PM3 – Second additional payment;
Description: EFD starts payment procedure. If there is no AMOUNT, EFD automatically makes whole payment of the chosen type – cash, card or cheque. There is possibility to follow several R_PMx commands to fulfill payment. If AMOUNT is more than the sum in fiscal receipt, this command returns in OUT file CHANGE amount. If there are no payment commands in input file, DRIVER automatically will close receipt with cash payment.

Examples: R_TRP 1000000.00V1
R_PM3 100000.00
R_PM2 500000.00
R_PM1 500000.00
In this example the sum of 1mln is paid as follows:

- 100000.00 paid by cheque;
- 500000.00 paid by card;
- 400000.00 paid cash;
- 100000.00 change.

8.3.8. Name – R_DMA

Format: R_DMA [[+]] -]AMOUNT
Range: '+' is optional;
'-' if negative AMOUNT minus character is mandatory;
Description: Makes discount or mark up in amount.
If AMOUNT is positive, this command sends a mark up command to EFD. Otherwise the discount command is send to EFD. This command is applicable only if previous command was R_TRP or

R_TRD or R_STT. In all other cases DRIVER will issue error statement.

Examples: R_TRP 100000V1

R_DMA 50000

R_TRP 50000V1

R_STT P

R_DMA -100000

As a result the total in the receipt will be 100000.00.

8.3.9. Name – R_DMP

Format: R_DMA [[+]] -]PERCENT

Range: '+' is optional;

'-' if negative PERCENT minus character is mandatory;

PERCENT is in -99.99 to 99.99 ranges

Description: Makes discount or mark up in percent.

If PERCENT is positive, this command sends a mark up command to EFD. Otherwise the discount command is send to EFD. This command is applicable only if previous command was R_TRP or R_TRD or R_STT. In all other cases DRIVER will issue error statement.

Examples: R_TRP 100000V1

R_DMP 50.00

R_TRP 50000V1

R_STT P

R_DMA -50.00

As a result the total in the receipt will be 100000.00.

8.3.10. Name – R_VRN

Format: R_VRN "CUSTOMER VRN"

Range: CUSTOMER VRN is a quoted text string

Description: This command sends the customer VRN number to EFD.

Examples: none

8.3.11. Name – R_NAM

Format: R_NAM "CUSTOMER NAME"

Range: CUSTOMER NAME is a quoted text string

Description: This command sends the customer name to EFD;
Examples: none

8.3.12. Name – R_TIN

Format: R_TIN "CUSTOMER TIN"
Range: CUSTOMER TIN is a quoted text string
Description: This command sends the customer TIN to EFD;
Examples: none

8.3.13. Name – R_ADR

Format: R_ADR "CUSTOMER ADDRESS"
Range: CUSTOMER ADDRESS is a quoted text string
Description: This command sends the customer TIN to EFD;
Examples: none

8.3.14. Name – R_TXT

Format: R_TXT "FREE TEXT"
Range: FREE TEXT is a quoted text string
Description: This command sends a free text to EFD. If input text file have only R_TXT commands, the non fiscal receipt is printed automatically.
Examples: none

8.3.15. Name – C_FMRS

Format: C_FMRS "010212,030412"
Range: Date range is a quoted text string
Description: EFD print simplified fiscal memory report for specified period. Date format is DDMMYY.
Examples: none

8.3.16. Name – C_FMRF

Format: C_FMRF "010212,030412"
Range: Date range is a quoted text string
Description: EFD print detailed fiscal memory report for specified period. Date format is DDMMYY.
Examples: none

9. Errors

9.1. Common

Errors and warnings are grouped in several groups with different names:

PWARN and PERR - Errors and warnings issued by DRIVER parser;

SWARN and SERR - Errors and warnings in EFD status bytes;

EERR - EFD errors;

CERR - Communication protocol errors;

9.2. Error list

Name	Description
PWARN 01	TRUNCATED! TOO LONG MESSAGE!
PWARN 02	THIS COMMAND IS IGNORED - ZERO PERCENT!
PWARN 03	THIS COMMAND IS IGNORED - ZERO VALUE!
PWARN 04	UNKNOWN LINE TYPE!
SWARN 01	Error during data sending via GPRS
SWARN 02	PAPER END!
SWARN 03	HAVE TO ISSUE DAILY Z REPORT!
PERR 00	UNKNOWN ERROR
PERR 01	Input file is too long!
PERR 02	WRONG TRANSACTION AMOUNT!
PERR 03	WRONG NUMBER FORMAT!
PERR 04	WRONG TRANSACTION VAT GROUP!
PERR 05	WRONG OR MISSING DEPARTMENT NUMBER!
PERR 06	DEPARTMENT NUMBER OUT OF RANGE!
PERR 07	WRONG OR MISSING DEPARTMENT OR VAT GROUP!
PERR 08	WRONG PAYMENT AMOUNT!
PERR 09	MAXIMUM DISCOUNT IS -99.99 PERCENT!
PERR 10	MAXIMUM MARK UP IS 99.99 PERCENT!
PERR 11	WRONG DISCOUNT/MARK UP AMOUNT FORMAT!
PERR 12	R_DMP CAN NOT BE THE FIRST COMMAND!
PERR 13	R_DMP IS NOT ALLOWED AT THIS PLACE!
PERR 14	R_DMA CAN NOT BE THE FIRST COMMAND!
PERR 15	R_DMA IS NOT ALLOWED AT THIS PLACE!

PERR 16	AMOUNT DISCOUNT/MARKUP IS FORBIDDEN IN DEPT SALE!
PERR 17	MESSAGE NOT QUOTED!
SERR 01	Time/date is not set
SERR 02	Invalid command code
SERR 03	Syntax error
SERR 04	Consecutive entering of 3 wrong passwords
SERR 06	Lithium battery error
SERR 07	RAM reset
SERR 08	Command execution is not permitted!
SERR 09	Overflow. EFD data is not changed!
SERR 12	Full fiscal memory!
SERR 13	Error record in the FM!
SERR 14	Error when recording in the FM!
SERR 15	The FM is set in READONLY mode!
EERR 01	Multiplication overflow!
EERR 02	Daily report overflow!
EERR 03	Illegal operation!
EERR 04	The discount exceeds the registration/subtotal!
EERR 05	The amount is 0!
EERR 06	Receipt overflow!
EERR 07	Quantity overflow!
EERR 08	The entered value exceeds the maximum value for prices!
EERR 09	The value is 0!
EERR 10	Free prices are disabled for this PLU or department!
EERR 11	This quantity must be integer!
EERR 12	Maximum number of transactions (250) in the receipt. The receipt must be closed!
EERR 13	This percentage value is out of the range 0.00 – 99.99!
EERR 14	The operation is disabled; the result would be negative!
EERR 15	PLU access error!
EERR 16	The quantity in stock is not enough for this sale!
EERR 18	There is no registration that can be corrected!
EERR 21	The ready cash is less than the entered PO sum!
EERR 23	Operators report overflow!
EERR 24	Fiscal memory overflow!
EERR 25	Illegal ranges concerning a report!
EERR 26	PLU report overflow. PLU Z report must be issued!
EERR 28	No duplicate can be printed!
EERR 29	Invoices are enabled only in fiscal mode!

EERR 32	This barcode is already programmed for another PLU!
EERR 33	PLU Z report is needed!
EERR 34	Commodity group report overflow!
EERR 36	The refund operation is disabled; the result would be negative!
EERR 38	Daily Z report is necessary - 24 hours have elapsed!
EERR 44	Spent limit of changes (VAT changes or user's data changes)!
EERR 65	GSM modem communication error!
EERR 66	GPRS connection error!
EERR 69	Undefined connection parameters!
EERR 70	SIM card error or PIN available (in the latter case PIN must be removed)!
EERR 71	Low level GSM signal!
EERR 73	Lithium battery fault!
EERR 75	The amount (price) exceeds the limit!
EERR 76	Real time clock error!
EERR 77	Memory card error!
EERR 78	Memory card overflow!
EERR 79	Memory card is not activated!
EERR 80	The current receipt must be closed with regard to saving data in the memory card!
EERR 81	No connection to the FTP server!
EERR 99	UNKNOWN ERROR!
CERR 01	EFD IS NOT RESPONDING!
CERR 02	UNABLE TO CLOSE NON FISCAL RECEIPT!
CERR 03	UNABLE TO CANCEL PREVIOUS FISCAL RECEIPT!
CERR 04	UNABLE TO OPEN NON FISCAL RECEIPT!
CERR 05	UNABLE TO PRINT NON FISCAL TEXT!
CERR 06	UNABLE TO ISSUE DAILY Z report!
CERR 07	UNABLE TO ISSUE DAILY X report!
CERR 08	UNABLE TO SEND CUSTOMER DATA!
CERR 09	UNABLE TO OPEN FISCAL RECEIPT!
CERR 10	UNABLE TO MAKE TRANSACTION!
CERR 11	UNABLE TO PRINT FISCAL TEXT!
CERR 12	UNABLE TO MAKE SUBTOTAL!
CERR 13	UNABLE TO MAKE PAYMENT!
CERR 14	UNABLE TO CLOSE FISCAL RECEIPT!