

## Chapter 02

This chapter (part of Developer's guide)

**contains only (differences) for specific country.**

All others chapters are common for all countries.

# MetaLINK Developer's Guide

specifics

Edition **Malawi, FP-700MLW**

**r.9.3**

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## Chapter 02 MLW - How to Sell & Pay

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## Before Starting.

Before we introduce data structures, you should prepare & send to MetaLINK,

let us describe some characteristics - features in this country:

- ✓ Every line of sale (goods / services) can have item description of max. 32 characters.
- ✓ Every line of payment can have description of max. 50 ( 2 x 25 characters) but this description will not be printed.
- ✓ Discount (-) / Surcharge (+) in % on item is **ALLOWED** as separate visible row, but the SALE-PRICE will be corrected with this percent and taken as "new price".
- ✓ Discount (-) / Surcharge (+) in absolute on item is **ALLOWED**, calculated as absolute value of SALE-TOTAL.
- ✓ STORNO-ITEMS in current FISCAL-RECEIPT are **ALLOWED** as »negative quantity«
- ✓ Printing duplicate of last FISCAL-RECEIPT is **ALLOWED**.
- ✓ Printing barcodes (EAN-8, EAN-13, Code128) within FISCAL-RECEIPT is **ALLOWED**
- ✓ Printing barcodes (EAN-8, EAN-13, Code128) within NON-FISCAL RECEIPT **ALLOWED**.
- ✓ TAX-GROUPs (0, 1, 2, 3, 4, 5) are allowed, depends of Company registration.
- ✓ Payments in Cheque, Credit Card, Cash, (1, 2, 3) are **ALLOWED**. Additional way of payments are **NOT ALLOWED**.
- ✓ RECLAMATION-RECEIPT is **NOT ALLOWED**..
- ✓ NON-FISCAL-TEXT is **ALLOWED**.
- ✓ Max. number of items (sales) in FISCAL-RECEIPT is 250 - 500 lines..
- ✓ Max. number of daily closure (Daily reports) is 1898.
- ✓ Max. number of cashiers is 8.
- ✓ Max. number of article in WORKING-MEMORY is around 3.000 PLU-s.

## Fiscal Receipt

All data needed to generate and print FISCAL-RECEIPT must be part of file ABC\_nnn.DAT,

with unique name ABC\_nnn.DAT as: (CSV - Comma Separated Value, DBF - Data Base Format, TXT - Textual, XML - eXtended Markup Language).

using a format (ABC\_nnn.DAT).

Containing information what to sell (goods / services) ?

**What goods or services ?**

**What quantities ?**

**What prices ?**

**How to pay ?**

### Table ABC\_nnn.DAT

COL-01	ART_ID	Varchar(20),	COL-01	Mandatory
COL-02	TAX_ID	Varchar(1),	COL-02	Mandatory
COL-03	ART_DESC	Varchar(50),	COL-03	Mandatory
COL-04	SALE_PRICE	Numeric(10,2),	COL-04	Mandatory
COL-05	SALE_QTY	Numeric(10,3),	COL-05	Mandatory
COL-06	DISC_PERC	Numeric(10,2),	COL-06	Optional
COL-07	DISC_ABS	Numeric(10,2),	COL-07	Optional
COL-08	IND_SALE	Varchar(10),	COL-08	N/A

**Field format limits** are database limits, described as varchar or numeric values.

**Value format limits** are usage limits, described for each field separately.

## PART 1. SALES OF GOODS / SERVICES

**COL-01                      ART\_ID                      Varchar(20),                      COL-01    mandatory**

is ID of article – goods / services in your programme (database), or EAN code, or Manufacturer code, or PLU code, or combination of ...

The only usage of this field is to help a MetaLINK to „recognize“ a new article, and to make a decision to add it or not in Working memory of FP-XXX.

It is also used in a data files MetaLINK return to you (see: Export Tables) as a proof of sales transaction.

**COL-02                      TAX\_ID                      Varchar(1),                      COL-02    mandatory**

is numerical code (TAX-NO) of TAX-GROUP which article belongs. (see Fiscal Law, Trade Law)

Every TAX-NO (you send) has corresponding TAX-LETTER (Cyrillic letter), TAX-PERC (applicable percent), TAX-DESC (examples: High Tax - General Tax, Low Tax, Free Tax, No Tax, Specific Tax, ....

TAX_NO	0	1	2	3	4	5	
TAX_LETTER	A	B	C	D	E	F	
TAX_PERC	16.50 %	10.00 %	0 %	0 %	0 %	0 %	
TAX_DESC	High	Low	free	n/a	n/a	exempt	

**COL-03                      ART\_DESC                      Varchar(50),                      COL-03    mandatory**

is article name or description used in printing a FISCAL-RECEIPT

### Remarks COL-03 ART\_DESC !

According to MLW Law & Regulation and protocol limitation article description is **max. 32** characters, and **must be UNIQUE**  
See MLW - CodePage –for allowed character in article description.

Our suggestion is that you make ART\_DESC as concatenation of:  
PLU-code or EAN code or SGID (in your RDBMS) + your description.

**COL-04                      SALE\_PRICE                      Numeric(10,2),                      COL-04    mandatory**

is RETAIL-PRICE including VAT.

### Remarks COL-04 SALE\_PRICE !

According to MLW Law & Regulation and protocol limitation sales price can have **max 999999.99 (standard)**

sales price is allways with dec. point as delimiter.

**COL-05                      SALE\_QTY                      Numeric(10,3),                      COL-05    mandatory**

is sales quantity of article in this item.  
The same article can appear in many other items.

If SALE\_QTY is NEGATIVE, that means this item is STORNO-ITEM („STORNO“ of some previous item).

You can STORNO only a whole items (all quantity in item), not some quantity of item.

**Remarks COL-05 SALE\_QTY !**

According to MLW Law & Regulation and protocol limitation sales quantity can have N8.3

**COL-06          DISC\_PERC          Numeric(10,2)          COL-06 optional**

**Remarks COL-06 DISC\_PERC**

**COL-07          DISC\_ABS          Numeric(10,2)          COL-07 optional**

**Remarks COL-07 DISC\_ABS**

**COL-08          IND\_SALE          Varchar(10)          COL-08 n/a**

this is a special indicator used by programme. n/a Not applicable.

**Remarks COL-08 IND\_SALE ! (is N/A) For Internal use only**

## PART 2. PAYMENTS

For payments only columns: COL-01, COL-03, COL-04 are used.

<b>COL-01</b>	<b>ART_ID</b>	<b>Varchar(20),</b>	<b>COL-01 mandatory</b>
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Allowed values are:

PAY\_CHEQUE (C), PAY\_CREDIT (N), PAY\_CASH (P)

First three ways of payment are automatically available.

You can have multiple payments of the same kind. i.e. two Debit cards, within a same Fiscal Receipt.

<b>COL-03</b>	<b>ART_DESC</b>	<b>Varchar(50),</b>	<b>COL-03 optional</b>
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is additional text max. 2 x 25 characters (optional) corresponding to each row of payments.

For example: Card Type: (MASTER, VISA; DINERS, AMERICAN, Loyalty – Club Card ), Card-Number, Cheque Bank, Cheque Number, Voucher Number, Customer Credit Number, Invoice Number,..

**Remarks COL-03 ART\_DESC PAYMENTS !**  
**(is NOT allowed) only as a comment**

<b>COL-04</b>	<b>SALE_PRICE</b>	<b>Numeric(10,2),</b>	<b>COL-04 mandatory</b>
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is amount of payments corresponds to this way of payments.

**Remarks COL-04 SALE\_PRICE PAYMENTS !**

According to Law & Regulation and protocol limitation  
Payment can have **UP TO 8 significant digits. i.e. 999999.99**

## PART 3. FREE PART OF A FISCAL RECEIPT

For free part only columns: COL-01, COL-03 are used.

**All data are optional.**

<b>COL-01</b>	<b>ART_ID</b>	<b>Varchar(20),</b>	<b>COL-01 mandatory</b>
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**Remarks COL-01 ART\_ID FREE PART !**

Allowed values: USER\_ID, USER\_NAME, FOOTER\_1, FOOTER\_2, BUYER\_TIN, BUYER\_NAME

See. Samples ABC\_nnn.DAT

<b>COL-03</b>	<b>ART_DESC</b>	<b>Varchar(50),</b>	<b>COL-03 mandatory</b>
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for USER\_ID values are (1 – 8)

for USER\_NAME (max. 24 characters)

for FOOTER\_n (max. 30 characters)

## Sample ABC\_nnn.DAT

COL-01	COL-02	COL-03	COL-04	COL-05
ART_ID C (20)	TAX_ID C (1)	ART_DESC C (50)	SALE_PRICE N 10.2	SALE_QTY N 10.3
100	0	Description 32 ch max.	100.00	5.000
200	0	Description 32 ch max.	150.00	123.400
300	1	Description 32 ch max.	200.00	12.340
400	1	Description 32 ch max.	250.00	1.234
500	2	Description 32 ch max.	300.00	0.123
600	2	Description 32 ch max.	400.00	1.000
END_OF_SALE		End of sale mark		
PAY_CHEQUE			200.00	
PAY_CREDIT			300.00	
PAY_CASH			900.00	
END_OF_PAY		End of sale mark		
USER_ID		Values (1 – 8 )		
USER_NAME		max 24 characters		
FOOTER_1		Footer line 1 desc.		
FOOTER_2		Footer line 2 desc.		
BUYER_TIN		Tax Id. Number		
BUYER_NAME		Company Name		

## Processing

Programme analyzes ABC\_nnn.DAT file and If the file's syntax is correct,  
Programme accepts ABC\_nnn.DAT, does logical check, and

Folder	If OK	If not OK
	Open Fiscal Receipt	
	Send sales data to FP	
	Send pay data to FP	
	Close Fiscal Receipt	
	Signal to open a cash drawer	
/TO_FP	Deletes file	
/FROM_FP	Returns ABC_nnnn.OK	Returns ABC_nnnn.ERR

In .OK. and .ERR files are textual data.

In TXT\_nnn.ERR is a error description.

Content of file ABC\_nnn.OK is «Total Sale Amount » Sample: 1020.50, \*

Some FP models return also LastFiscalReceipt Number (call for details).



## COMM.ERR – Interrupted Communication

If during input files processing: (ABC\_nnn.DAT, CMD\_nnn.DAT, TXT\_nnn.DAT )

communication with FP-XXX gets interrupted (FP-XXX no response)  
(power interrupt, cables disconnected ...),  
immediately after detecting the break, MetaLINK returns a file COMM\_nnn.ERR containing  
error description, simultaneously displaying this messages on screen for cashier's  
information.

After that, programme MetaLINK will automatically shutdown.

After restarting MetaLINK again, programme will continue with processing of input  
files and send responses. (.ERR or .OK).

We recommend than after receiving COMM.ERR messages,  
you immediately warn cashier and STOP execution of Your POS programme.

Remarks: All messages which appear in COMM.ERR file are automatically written to  
LINK\_LOG.txt, too.

## NOPAPER.ERR – No paper on bon and/or journal tape

If during input files processing: ABC\_nnn.DAT, CMD\_nnn.DAT, TXT\_nnn.DAT

there is a lack of paper on bon or journal tape  
immediately after detecting lack of paper, MetaLINK returns file NOPAPER.ERR containing  
date and time, simultaneously displaying this message on screen for cashier's information.

After paper tape is replaced (it make take a few seconds to a few minutes)  
MetaLINK will continue with processing and send responses ABC\_nnn.OK or ABC\_nnn.ERR.

Remarks: In the folder will always be only one file NOPAPER.ERR and next file will  
overwrite existing one (only date and time within a file will change).

Remarks: All messages written in NOPAPER.ERR file are automatically written in  
LINK\_LOG.txt, too.

We recommend do not take any action regarding this message from your  
programme, but simply deletes a message from folder.

This message only means that you have to wait for a while until you get an  
»expected message« - confirmation of sucesfull / unsucesfull processing of ABC-  
nnn.DAT file.

## Refund Fiscal Receipt

### CHECK IT !!!

According to MLW Country Law & Regulation in the case when customer after Buy & Pay process, in the next few days, wants to return goods / services which do not fit to Specification, Warranty, etc, he can return some or all goods to retailers.

This process can not be documented (printed) on FP.

## Non-Fiscal Receipt

You can send before or after FISCAL RECEIPT (ABC\_nnn.DAT), a file with non fiscal text.

### Examples:

vouchers, special receipts for return bottles, kichen orders, information on non-working days for Holidays, etc.

### Table TXT\_nnn.DAT

TEXT_DESC	Varchar(36)	NOT NULL	mandatory
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Attribute description:

TEXT\_DESC          Varchar(36)  
One row of free user-defined text.

**Text length is MAX. 36 characters.**

File can contain any number of columns with free text.  
Empty line are not allowed. It must have at list one character ( . (dot) as example).

### Remarks !

Max. Length of row of text is 30 characters.  
Text will be printed exactly as entered (from left to right)  
You can have (print) as many rows of text as you want.

**It is not allowed to send a text that "LOOKS LIKE" a FISCAL-RECEIPT**

Remarks: **FP-700** allows printing EAN-13, EAN-8, CODE128 barcode

EAN 8 bez w/o numbers

**EAN08A53101853**

EAN 8 sa with numbers

**EAN08B53101853**

EAN 13 bez w/o numbers

**EAN13A4003583109029**

EAN 13 sa with numbers

**EAN13B4003583109029**

CODE 128 bez w/o numbers

**CD128A012345678901234567890123456789**

CODE 128 sa with numbers

**CD128B012345678901234567890123456789**

## Processing

Your programme sends a file: TXT\_nnn.(CSV, DBF, TXT, XML).  
according to a format (TXT\_nnn.DAT).

Folder	If OK	If ERROR
	Open non fiscal text	
	Print row by row	
	Close non fiscal text	
In /TO_FP	Delete a file	Delete a file
In /FROM_FP returns		
	TXT_nnnn.OK	TXT_nnnn.ERR

In .OK. and .ERR files are textual data.

In TXT\_nnn.ERR is a error description.

## Commands

Beside ABC\_nnn.DAT (before or after it) your programme can send some additional commands or report requests i.e. CMD\_nnn.DAT file.

MetaLINK besides »listening« to your files, has an additional MetaLINK -Menu (independent programme) used for sending different commands.

### Remarks !

You can send many commands, row by row, one by one.  
Commands can be send anytime before or after ABC\_nnn.DAT

So it is not necessary to »do programming« and calling command, end user can simply execute them using MetaLINK –Menu programme.

### Table CMD\_nnn.DAT

CMD_ID	Varchar(10)	NOT NULL
CMD_DESC	Varchar(30)	optional

Attribute description:

CMD_ID	Varchar(10)
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Command ID.

CMD_DESC	Varchar(30)
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Command description or blank.

CMD_ID	CMD_DESC	FP-XXX	role
	Show text in upper display row up to 20 ch		
DSP47	some text	(47)	Developer
	Show text in lower display row up to 20ch		
DSP35	some text	(35)	Developer
	Deposit in- plus (200)		
CMD70P	200	(70)	Cashier
	Deposit out - minus (100)		
CMD70M	100	(70)	Cashier
	Open a cash drawer		
CMD106	NO PARAM	(106)	Cashier
	Delete articles from fiskal printer		
DEL-ART	NO PARAM	(N/A)	Cashier
	Send sound signal – Beep		
BEEP	NO PARAM	OK	Developer
	returns file FP_STATUS.OK		
STATUS	NO PARAM		Developer

	Change to summer time		
SUMMER	NO PARAM		Developer
	Change to winter time		
WINTER	NO PARAM		Developer
	Return ZETS in given period		
ZETS-BACK	DDMMYY-DDMMYY		Developer

## Samples

DSP47, show in upper row on display

DSP35, show in lower row on display

FP\_STATUS.OK contains:

FISCALIZED	/ or NONFISCALIZED
"1.50SR 26JUL2004 1000, BA46"	/ FW firmware version
2005-03-30 09:11:17	/ date and time from FP
010110000	/ Tax group set AGDĎEŽIJK
123450	/ IBFM , i.e. DT number
123456789	/ VAT number
100	/ # of articles in FP
100	/ # of articles in DB
DAY CLOSED	/or DAY OPEN

## Reports

	Print ( <b>X report</b> ) Current Status		<b>role</b>
REP-X	NO PARAM	(69) "3"	Cashier
	Print ( <b>Z report</b> ) i.e. Daily Closure		
REP-Z	NO PARAM	(69) "1"	Manager
	Print periodical report (day – day)		
REP79	DDMMYY-DDMMYY	(79)	TaxAuth
	Print all Tax group changes		
REP50	NO PARAM	(50)	TaxAuth
	Print articles sold in a day		
REP111	NO PARAM	(111)	TaxAuth

## Processing

Your programme sends files: CMD\_00000.(CSV, DBF, TXT, XML).  
According to the format (CMD\_nnn.DAT).

folder	If OK	If not OK
	Read command row by row	
	Execute commands row by row	
In /TO_FP	Delete a file	Delete a file
in /FROM_FP returns	CMD_nnn.OK	CMD_nnn.ERR

Files .OK and/or .ERR contain only textual data

Programme returns file CMD\_nnn.OK if OK, and file CMD\_nnn.ERR if there are some errors.

File CMD\_nnn.ERR contains textual error description.

## MetaLINK – Menu

After starting programme MetaLINK appears in SysTray

(as »CAPITAL RED letter« **L**).

Without the interface – starting form, we make it even more difficult to stop a programme by accident.

Therefore all options available previously through Menu – Administration have been extracted to a standalone executable MetaLINK-Menu.

This splitting was necessary because we moved programme MetaLINK to SysTray.

MetaLINK-Menu can be started independently (MetaLINK must be started before).

Also developer can send and execute all options needed by their customers from their POS programme.

// A. Titles on button in MetaLINK-Menu programme

Link		(nn)
REP-X	1. Current Sale Report – X	(69)
REP-Z	2. Daily Report – Z	(69)
REP79	3. Monthly Report	(79)
REP79	4. Periodical Report	(79)
REP111	5. Articles sold in day	(111)
DEL-ART	6. Delete article from FP-XXX	(107)
Internal	7. Save articles in file	N/A
N/A	8. Send turnover for period	N/A
	9. ----	
CMD70P	A. Deposit in cash drawer	(70)
CMD70M	B. Deposit out cash drawer	(70)
SUMMER	C. Change to Summer Time	(60) “1”
WINTER	D. Change to Winter Time	(60) “0”
internal	E. View a log file	N/A
N/A	F. Free command	N/A
	G. ---	
	H. ---	
	I. ---	
CMD106	J. Open cash drawer	(106)
internal	K. Check customer display	(100)
internal	L. Set footer	(43) (53)
STATUS	M. Printer status	
	N. ---	
REP50	P. Tax changes in period	(50)
	R.	
	S.	
	T. ---	
	X. EXIT	