

Chapter 02

This chapter (part of Developer's guide)

contains only (differences) specifics for specific country.

All others chapters are common for all SEE countries.

MetaLINK

Developer's Guide

specifics

Edition **Macedonia**

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Chapter 02 MKD - 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 NOT allowed as separate row, but the SALE-PRICE will be corrected with this percent and taken as “new price”.
- Discount (-) / Surcharge (+) in absolute on item is NOT allowed, calculated as absolute value of SALE-TOTAL.
- STORNO-ITEMS in FISCAL-RECEIPT are NOT allowed as »negative quantity«
- Printing duplicate of last FISCAL-RECEIPT is NOT allowed.
- Printing EANCODE (barcode) is NOT allowed within both FISCAL-RECEIPT and NON-FISCAL-RECEIPT.
- TAX-GROUPs (0, 1, 2, 3) are allowed.
- Payments in Cheque, Debit Card, Cash, Credit Card (1, 2, 3, 4) are allowed. No additional way of payments are allowed.
- **RECLAMATION-RECEIPT (STO_) partial or complete is allowed.**
- NON-FISCAL-TEXT is NOT allowed.
- Max. number of items (sales) in FISCAL-RECEIPT is 250 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 .

Bon - Receipt

All data needed to generate and print FISCAL-RECEIPT must be part of file ABC_nnn.DAT, with unique name ABC_nnn. (CSV, DBF, TXT, XML), using a format (ABC_nnn.DAT). containing information what to sell (goods / services) ?
What quantities ?
What prices ?
How to pay ?

Table ABC_nnn.DAT

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

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 ARTICLES – GOODS / SERVICES

ART_ID **Varchar(20), COL-01**

is ID of article – goods / services in your programme (database).
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.

TAX_ID **Varchar(1), COL-02**

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 – General Tax, Low Tax, Free Tax, No Tax, Specific Tax.

TAX_NO	0	1	2	3	4	5	6	7	8
TAX_LETTER (Cyrillic/Latin)	A A	Б B	В V	Г G					
TAX_PERC	18 %	5 %	0 %	0 %					
TAX_DESC	High	Low	Free	No	N/A	N/A	N/A	N/A	N/A

Tax Group (“3” i.e. “G”) is for entrepreneurs not in VAT system.

ART_DESC **Varchar(50), COL-03**

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

Remarks COL-03 ART_DESC !

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

SALE_PRICE **Numeric(10,2), COL-04**

is RETAIL-PRICE including VAT.

Remarks COL-04 SALE_PRICE !

According to MKD Law & Regulation and protocol limitation sales price can have **max 99999999.99**
Limitation: PF-550 using FW 1.00 is: 999999.99

SALE_QTY **Numeric(10,3), COL-05**

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

Remarks COL-05 SALE_QTY !

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

DISC_PERC Numeric(10,2) COL-06

Remarks COL_06 DISC_PERC ! (is NOT allowed)

DISC_ABS Numeric(10,2) COL-07

Remarks COL-07 DISC_ABS ! (is NOT allowed)

IND_SALE Varchar(10) COL-08

this is a special indicator used by programme. Not in use.

Remarks COL-08 IND_SALE ! (is NOT allowed) For Internal use only

PART 2. PAYMENTS

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

ART_ID **Varchar(20),** **COL-01**

Allowed values are:

PAY_CHEQUE (C - 1), СО ЧЕК, PAY_DEBIT (D - 2), СО КАРТИЧКА

PAY_CASH (P - 3) , ВО ГОТОВО PAY_CREDIT (P - 4) НА КРЕДИТ

First four ways of payment are automatically available.

You can have multiple payments of the same kind. i.e. two Debit cards.

ART_DESC **Varchar(50),** **COL-03**

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)

SALE_PRICE **Numeric(10,2),** **COL-04**

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 BON

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

ART_ID **Varchar(20),** **COL-01**

Remarks COL-01 ART_ID FREE PART !

Allowed values: USER_ID, USER_NAME,

See. Samples ABC_nnn.DAT

ART_DESC **Varchar(50),** **COL-03**

for USER_ID values are (1 – 8)

for USER_NAME (max. 24 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	0	Description 32 ch max.	200.00	12.340
400	0	Description 32 ch max.	250.00	1.234
500	0	Description 32 ch max.	300.00	0.123
600	0	Description 32 ch max.	400.00	1.000
END_OF_SALE		End of sale mark		
PAY_CHEQUE			200.00	
PAY_DEBIT			100.00	
PAY_CASH			900.00	
PAY_CREDIT			200.00	
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.		
FOOTER_3		Footer line 3 desc.		
FOOTER_4		Footer line 4 desc.		

Remarks Samples !

after each sale of article with ART_ID
it is allowed to enter one or many rows of free text corresponding to this item. as:
XQX-FREETXT max. 25-characters

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, *

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 sent automatically 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.

Reclamation Bon - STO

According to MKD 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 is done by sending a file with a structure exactly same as a ABC file, but with a name STO_nnn.DAT

Non fiscal text

NOT ALLOWED.

Table TXT_nnn.DAT

TEXT_DESC	Varchar(30)	NOT NULL
-----------	-------------	----------

Attribute description:

TEXT_DESC Varchar(30)
One row of free user-defined text.

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 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)	

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

Attribute description:

CMD_ID	Varchar(10)
--------	-------------

Command ID.

CMD_DESC	Varchar(30)
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Command description or blank.

Link	Show text in upper display row up to 20 ch	FP-XXX	role
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	N/A	Developer
	Change to winter time		
WINTER	NO PARAM	N/A	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
"1.00MK 23JUL2014 1230, 21F5"	/ FW firmware version
2014-10-1 09:11:17	/ date and time from FP
010110000	/ Tax group set ABVG
123450	/ IBFM , i.e. DT number
123456789	/ VAT number
100	/ # of articles in FP
100	/ # of articles in DB
DAY CLOSED	/or DAY OPEN

	Print (X report) Current Status		role
REP-X	NO PARAM	(69) "3"	Cashier
	Print (Z report) 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	