

**Specific directions for NPC- installation to cash register (POS) with
protocol (generell or ESC/POS mode) for serial receipt printer**

POSGeneral.npc (Basic functions):

Interface parameters (default):

9600 Baud, none Parity, 1 Stop bit, 8 Data bits.

Generally up to 40 characters/line of a printer data stream are received. After 40 characters or one CR and/or LF character (0Dhex or 0Ahex: end-of-line or line-feed) there will be a line break.

POS_TM88:

Same functions as 'POSGeneral'. Additionally the ESC-sequences for **EPSON TM88**- printers and compatible receipt printers will be recognised and extracted from the data stream.

Also the commands for connected cash drawer or pole display (device selection) will be suppressed.

POS_TMail:

Same functions as 'POSGeneral' and "POS_TM88". Additionally the **NPC** emulates receipt- and slip printer with **ESC/POS mode** (e.g. TM-U295) including the necessary feedback notifications. This is why the **NPC** should always remain switched on or connected to the point-of-sale system, since a printer error would otherwise be reported to the point-of-sale, which then would need to be manually confirmed by the operator after the connection with the **NPC** is restored.

To limit the display area of the receipt lines to the essential information, the user has several parameters at his disposal.

Important note:

To attain an optimal adjustment of the parameters on site, corresponding basic knowledge of serial data and the use of suitable display software (e.g. serial sniffer or similar software that also shows/stores hexadecimal characters) is recommended!

Sample receipt for the following explanations:

```
11/12/2006 13:42 Receipt: 3458 Server: 0024
Marlboro light          5.20
Mars kingsize           0.90
IMMEDIATE CANCELLATION -0.90
Crisps 175gr.           0,99
Total EUR               6.21
EURO                   10.00
Change returned         3.79
Best Prize Market
Tax number: xxxx/yyyy/zzzz
**** Additional Information ****
**** at end of receipt *****
```

Definition Start sequence:

Entering a character string that is always sent at the beginning of the receipt output. For example, this could be the simple designator "Receipt:". A definition of "/~//" is also possible, where ~/ represent two placeholder symbols (so-called wild cards) that are not rigidly defined, since the month of the date can also vary. In this case only the two slashes are decisive.

Important:

The defined character string should never appear elsewhere in this form (e.g. as an article name or similar). Entering characters is always *case sensitive*, i.e. a differentiation is made between capital and lower-case characters. The tilde symbol "~" is a so-called placeholder (wild card), i.e. any other symbol could stand in its place!

Definition End sequence:

Entering a character string that is always sent at the end of the receipt output. In the example this could be the designator "Best prize Market" or "Tax number".

If the start and end sequence are defined, then only the lines between start and end (including the defined lines) are transmitted. Information lines (such as the last two in the example) are not taken into account.

Entering a character string for which a certain action is to be carried out. In the example (see "Example" on page 64), this could be the character string "IMMEDIATE CANCELLATION" or simply "CANCELLATION". Each of the maximum of ten definable keywords can be allocated to one of the following actions, each of which affects the entire line: None, Sending or Capital Letters. In the case of **Sending**, only the corresponding line of the keyword will be sent, all other lines will be ignored of the NPC.

Space Definition:

For a value of **max Number (1-20)** you first determine the number of spaces. Depending on the mode you selected, one of these scenarios will follow:

Skip Mode: on reaching the defined number of spaces in a row, a space is skipped and counted again.

Max-Mode (max. number=6): In data output there are exactly 6 spaces between ,Cash' and 24,98, thus reaching the defined maximum of 6.

Skip-Mode (max. number=6) 'There are 15 spaces between ,Cash' and 24,98: $6 (+1) + 6 (+1) + \text{remain } 3 = 15$ spaces appear.

With receipt lines with more than 40 characters and without a limit in place (option **Limitation to 40 Chars/Row** deactivated), a line break/line feed is automatically carried out after the 40th character. Since receipt-printers with 42 characters/row generally only contain spaces or VAT abbreviations in the last two characters, limiting the display of max. 40 characters serves to provide a better display (option **Limitation to 40 Chars/Row** activated).

Cash register		NPC "DATA IN"	
9pole SUB-D- plug male	cable	9pole SUB-D- plug male	
RxD 2	←	3	TxD
TxD 3	→	2	RxD
GND 5		5	GND

Manufacturing of a ,listening in“ – cable connection:

Cash register

Comport
9-pole

Printer

RS232
9-pole

1:1 connection

Pin3 TxD
Pin5 Gnd

