FG-50HD

OSD CHARACTER GENERATOR

CE

The FG-50HD device in connection with the SNIF-42 sniffer allows to capture the data sending from different devices via RS-232 port and display them on the picture from CCTV cameras. Examples of such devices can be eg.: fiscal printers and cash registers, scales, dynamometers, banknote counters, time & attendance recorders and others equipped with RS-232 or RS-485 port. The device supports analog CCTV cameras with the following standards: PAL, AHD, HD-CVI, HD-TVI, in both resolutions 720p and 1080p. From the video signal the FG-50HD operates as a loop-through device, equipped with signal input and output. In the case of fiscal devices, it enables displaying an image from CCTV camera together with a list of registered products on shop sales stand of the fiscal printer. The device can be used as an extra protection of the sales stand (like not registering the sold products, registering products with wrong sales code, etc.). It allows to control the issued products in accordance with receipt. In addition the FG-50HD can work in character terminal mode and display all character strings received from controlled device. Are supported Polish characters, Cyrillic (only win1251) and German diacritical characters. The table of available characters & symbols is located in „SG-1 Mode" section.

Supported protocols and functions

The device is constantly developed and improved. Are added new protocols. A complete list of supported protocols is on the manufacturer's website. Today the device supports:

- fiscal printers compatible with POSNET, THERMAL, THERMAL (pharmacy) protocols,
- cash registers compatible with POSNET („operations monitor" mode),
- fiscal printers compatible with ELZAB, ELZAB (pharmacy, cash desk) protocols,
- the NOVITUS, NOVITUS (pharmacy) fiscal printers,
- the Alcotector fiscal printers,
- the Innova fiscal printers,
- the Detecs fiscal printers,
- the Soehnle-professional fiscal printers,
- fiscal printers compatible with UPOS protocol,
- other fiscal printers based on above protocols,
- money counters (eg.: Detectalia NEWTON), SORTER mode,
- the scales supporting the cougar 8530 protocol, (eg.: METTLER TOLEDO 8530),
- the AXIS, RADWAG, RHEWA scales,
- the SG-1mode – is the protocol of SG-1 device operating in symbols display mode, ability to implement custom protocols,
- time & attendance recorders, eg.: EVR-2,
- character terminal mode and hexadecimal displaying,
- supported code pages (charsets): win1250, win1251 (Cyrillic), Mazovia, cp852, iso-8859-2,

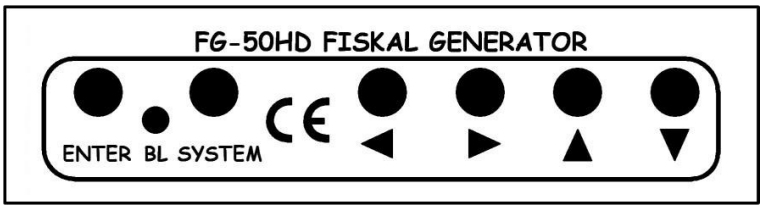
Communication via the RS-485 bus.

SPECIFICATIONS:

Number of video inputs	- 1xBNC/75Ohm
Number of video outputs	- 1xBNC/75Ohm
RS-485 transmission range	- 1200 m
Video gain	- 0 db
Power supply	- 12VDC/200mA
Dimensions	- 100x62x28mm
Weight	- 75g

Front panel description

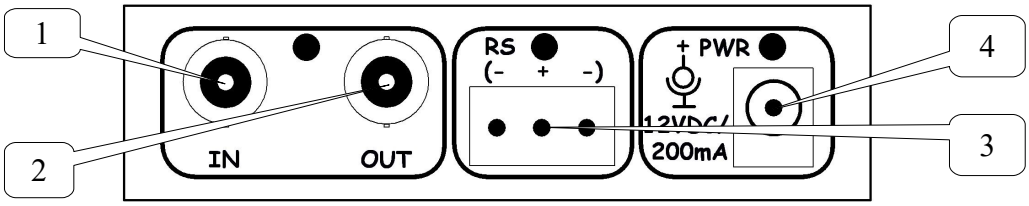
Configuration and changing the operation mode of the device is made by 6 keys used to navigate the on-screen menu visible after connecting the device to the receiver. The keys with arrows "up", "down" allow to navigate through the menu, the "ENTER" key allows to change the parameter value and enter to the sub-/top-menu, and the "SYSTEM" key is for manual selection of the supported system. The LED indicates that the device is in bootloader mode ready to update the firmware.



Rear panel description

On the rear panel there are following connectors: video signal input (BNC), video signal output (BNC) to monitor, RS-485 socket and 12VDC power socket. The green LEDs placed near the BNC connectors indicate the video signal presence at „IN" (input), the green LED placed over the RS-485 socket indicates the data frame reception, and the red LED indicates the power is on.

1 – Video Input
2 – Video Output
3 – RS-485
4 – Power Supply



Configuration and operations

After connecting the power to the device, it starts at default operation mode. A stable text will appear on the screen after selection the right system. There are available the following options: PAL, AHD720, AHD1080, HD-CVI720, HD-CVI1080, HD-TVI720, HD-TVI1080. To select one of them press the „SYSTEM" key. Each pressing this key allows to select a next option. It should be pressed and released as long as on the screen will appear a stable text and it will be a setting in accordance with the system of connected camera. To enter the device intuitive OSD menu press the „ENTER" key. To select any position of the menu use the arrow keys, to change the value of selected parameter or choose selected option use the „ENTER" key. To exit the OSD menu, select the EXIT position. The version of the software is displayed after power on and in main menu.

Configuration menu description

The main menu of the device has the following options:

1. Mode:
   TERMINAL – displaying the character strings received by the device, including a new line (NL) character and/or (CR) character,
   HEX – displaying each received character at hexadecimal mode,
   SG-1 – displaying the character strings anywhere on the screen (custom protocols),
   SORTER – displaying the text with pausing the screen content for a specified time,
   SORTER (SCROLLED) – displaying the text with scrolling,
   THERMAL – protocol used by the most older fiscal printers compatible with Posnet Thermal protocol,
   THERMAL (pharmacy) – the Posnet Thermal fiscal printers in pharmacy version,
   POSNET (posnet) - protocol used by a part of newer fiscal printers compatible with Posnet protocol,
   POSNET (mon-druk) – the Posnet fiscal printers with data entered in „transaction monitor" format,
   POSNET (mon-kasa) – the Posnet cash registers with data entered in „transaction monitor" format,
   POSNET (HS FV EJ) – the Posnet (HS FV EJ) fiscal printers,
   INNOVA – the Innova fiscal printers,
   ELZAB – the operation mode with fiscal printers working at Elzab standard,
   ELZAB (pharmacy) - the operation mode with fiscal printers in pharmacy version working at Elzab standard,
   ELZAB (cash desk) - the operation mode with cash registers working at Elzab standard,
   NOVITUS (cash desk) – the Novitus cash registers,
   NOVITUS – the Novitus fiscal printers,
   NOVITUS (Orlen) – the Novitus (Orlen) fiscal printers,
   NOVITUS (pharmacy) – the Novitus fiscal printers in pharmacy version,
   UPOS – the Epson Upos fiscal printers,
   Alcotector – the Alcotector fiscal printers,
   Soehnle prof. – the Soehnle-professional fiscal printers,
   Datecs (printer) – the Datecs fiscal printers,
   8530 cougar – the scales supporting the cougar 8530 protocol, eg.: Mettler Toledo 8530,
   AXIS – the Axis scales,
   RADWAG – the Radwag scales,
   DEMO – displays a sample receipt.
2. Configuration options – enter the detailed options of configuration menu,
3. EEPROM Save – saving the configuration to the device EEPROM memory,
4. Exit – exit the OSD menu.

The Configuration Options menu has the following settings:

1. Baudrate – the RS-485 transmission baudrate, the default value of the most fiscal printers is 9600 bauds.
2. Term line termination – end of line character selection at TERMINAL mode, or no end of line character.
3. Screen clear delay – the delay time selection, after which the screen will be cleared if any new data won't be received.
4. Screen change delay – the time of change the screen view (for „SORTER" protocol only).
5. First display line – selection of first line which will be used to display a text received by the device, this option allows to determine a part of the screen to display the data.
6. Last display line – selection of last line which will be used to display a text received by the device, as above.
7. Charset – the code page selection for Polish characters, for default setting set the „default" value.
8. Font size – the font size selection. For PAL system there are only two options possible: „normal" and „big". For HD systems there is additional „small" option available.
9. Position – text position selection,
10. System – system selection.
11. SG-1 ID – the ID number of the device operating in SG-1 mode.

Font size and position on the screen

The FG-50HD allows to change the font size. There are available three sizes: small, normal and big. For PAL system a small option is unavailable. For small and normal fonts you can set 40 lines, but for big fonts there is a limit up to 22 lines. For PAL system you can set 22 lines only regardless of the font size. Depends on the font size you can change the position of text on the screen. For small fonts there are four settings for each corner. For normal fonts you can set left or right side positions only, and for big fonts a text will be always displayed on the center part of the screen.

Operation with scales and other devices

The FG-50HD operating with devices displaying a text in one line only, for example: scales, dynamometers. The „last display line" parameter determines the line where the value will be displayed, and the „position" option allows to set the side of the screen where it will be displayed.

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> 1. Mode: NOVITUS
  2. Configuration options
  3. EEPROM Save
  4. Exit

  FG50-HD ver. 1.XX
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The FG-50HD Main Menu

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> 1. Baudrate:                  19200 baud
  2. Term line termination:          0x0A
  2. Screen clear delay:         infinite
  4. Screen change delay:              4s
  5. First display line:           line 1
  6. Last display line:           line 40
  7. Charset:                     default
  8. Font size:                    normal
  9. Position:                      right
 10. System:                    AHD 1080p
 11. SG-1 ID:                         123
 12. Exit
```

The FG-50HD Configuration Options Menu

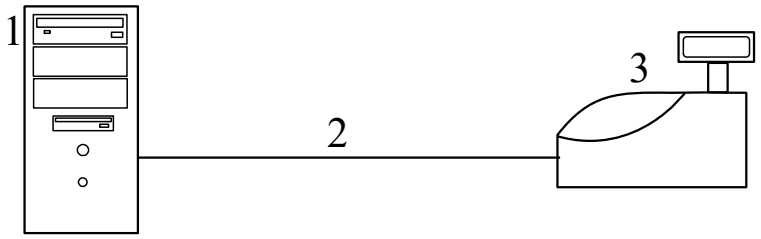
Description of the connecting to the fiscal printer

To connect the device to the fiscal printer you need use the loop-through converter marked as SNIF-42. It is the device which allows to read the RS-232 data without the interference in transmitted data. It is very important for the right operation of the fiscal printer, which can not properly work in case of any interferences or errors during data transmission. Due to above, please do not use any other types of RS-232/RS-485 converters. An other type converter can be used in case when the loop-through signal connection is not required (the case „c").

The schema of the installation is following:

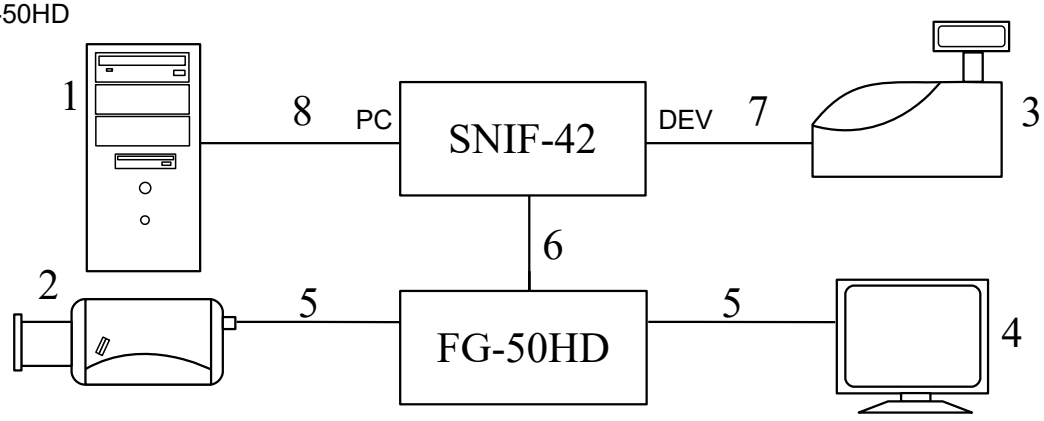
a) Classic configuration without the FG-50HD

1 – PC
2 – RS-232 (printer cable)
3 – fiscal printer



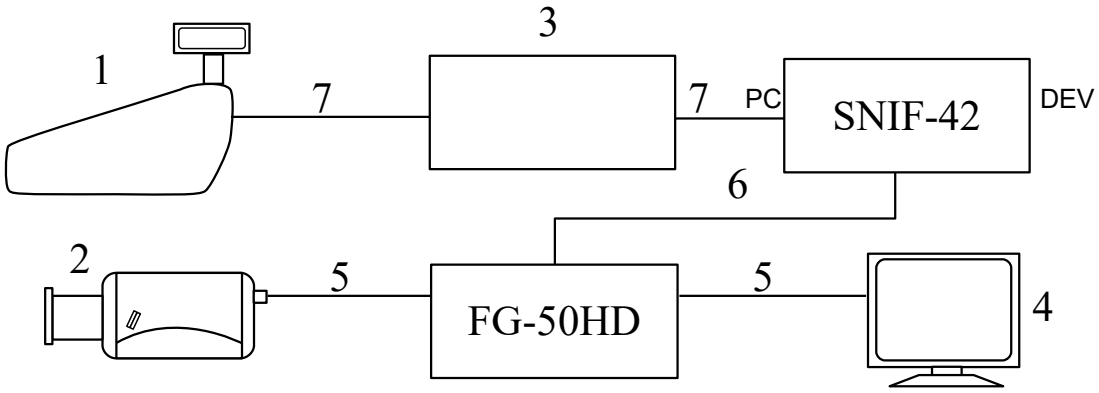
b) Configuration with using the FG-50HD

1 – PC
2 – camera
3 – fiscal printer
4 – monitor
5 – video signal
6 – RS-485
7 – RS-232 (printer cable)
8 – RS-232 (RS-232 cable extension 1:1)



c) Configuration with using a cash register equipped with RS-232 output of the transaction monitor

1 – cash register
2 – camera
3 – extension module (option)
4 – monitor
5 – video signal
6 – RS-485
7 – RS-232 (module cable)



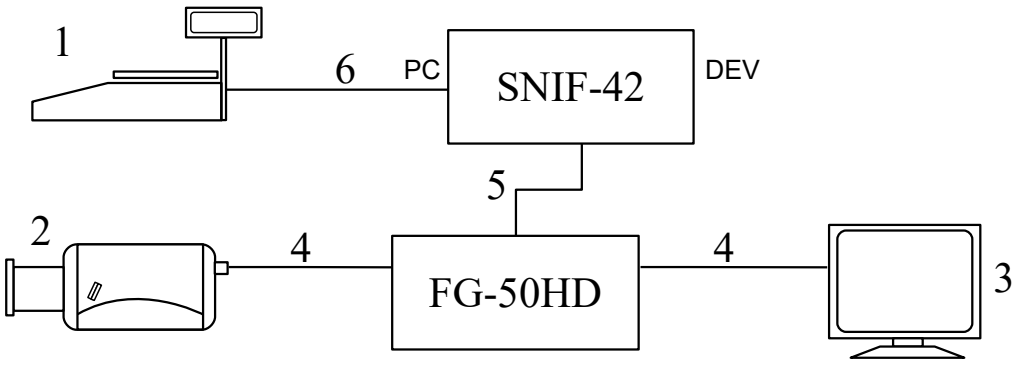
Description of the connecting to the scale

To connect the device to the scale you need also use the loop-through converter marked as SNIF-42. It is the device which allows to read the RS-232 data without the interference in transmitted data.

The schema of the installation is following:

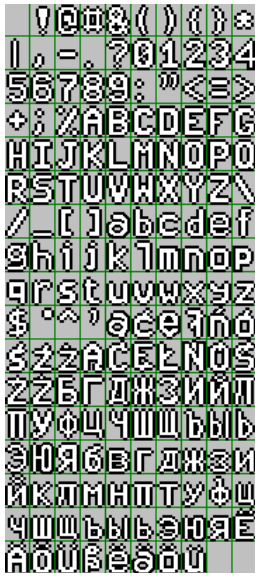
Configuration with using a scale

1 – electronic scale
2 – camera
3 – monitor
4 – video signal
5 – RS-485
6 – RS-232 (module cable)



The SG-1 Mode

In this mode is possible to display a string of characters in any part of the screen. It enables to implement custom protocols. The structure of the frame is following:
0xFF, SG-1_ID, 0x04, POS_X, POS_Y, QUANTITY, 0, 0, 0, 0,<text> - a frame with text,
0xFF, SG-1_ID, 0x03, 0, 0, 0, 0, 0, 0, 0 – clearing the screen,
0xFF – heading,
SG -1_ID – identification number (0 – 255), also set on the device – it is used to address, on which device should appear the text,
POS_X – X position on the screen (counted in characters max 49),
POS_Y – Y position on the screen (counted in characters max 40 for normal and small fonts and 22 for big fonts),
QUANTITY – the number of bytes of text (quantity<64),
- after sending the command, must be send a predetermined number of text characters in ASCII code,
- a break after the command and before sending the text can not be longer than 500ms (auto-timeout),
- available characters are shown in the table on the right side, the table includes also Polish characters, Cyrillic and German diacritical characters.



Firmware upgrade

The devices have the possibility of firmware upgrade. To enter the upgrade mode press and keep pressed the „ENTER” key during device power connecting. It is indicating by BL (bootloader) LED blinking. The current firmware version and upgrade procedure description you can find on webpage: https://shopdelta.eu, on the „FG-50HD” product cart.

For communication you will need also the USB/RS-485, RS-485/RS232 or SNIF-42 converter. The first one of them is powered from USB slot, and the other ones need an external power supply. The SNIF-42 is unidirectional interface and the transmission is without confirmation which increases the risk of failure update.