

TELETEXT STUDIO

version 2.0e

User manual

UTILIA

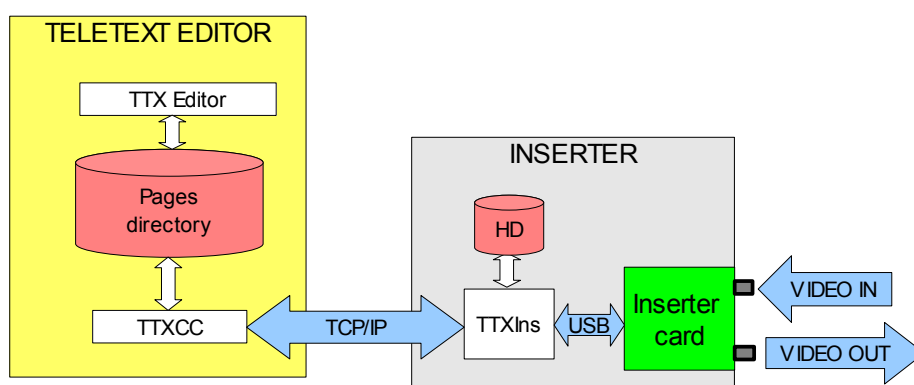
© UTILIA s.r.o. 2006
All rights reserved

1. Description of the system

Teletext Studio 2.0 consists of Teletext Editor and Inserter.

TTX Editor is a MS Windows based software where teletext pages are created. When saving page, user can select properties like page number, sign subpages and repeat period for particular pages.

TTXCC sends finished pages from **Page Directory** by TCP stream to Inserter where they are stored on hard disk. In accordance with their properties, **TTXIns** converts pages to TV data lines, which are inserted into vertical blank interval of the videosignal.



Inserter card is controlled by **TTXIns**. This program also generates **Page Header**, provides diagnostic and Inserter setup. Inserter system clock is used for page header time and date.

This system supports majority of features of Teletext level 1.5. Packets X/0 - X/23, X/24, X/25, X/26, X/27 and X/30 can be transmitted. Packet X/31 is supported by Inserter, but not used in this case (data transfers).

Please consider:

We recommend reading through the manual to get a basic understanding of the features of Teletext Studio. Following skills are assumed:

- **operating** of this equipment needs basic user skills of MS Windows and some knowledge about teletext principle.
- **installation** of the system requires to have basic practice with MS Windows computer and video chain. To **install external editor** it is good to be familiar with Windows computers, networking and software installation.

For more understanding of possibilities and limitations given by principle of teletext please look for official documentation (EBU/ETSI) of Teletext specification level 1.5.

2. Before you begin . . .

Insertor connections

Stable PAL composite video (or blackburst reference signal) should be connected to **VIDEO IN** BNC connector (upper one). Bottom BNC is **VIDEO OUT**. These two connectors are internally shorted by "bypass" relay if the Insertor has no power or it's software is not started or **BYPASS** in TTXIns Setup is selected by user.

If you prefer to use Insertor also as an Editor, connect PC keyboard, mouse and monitor by usual way.

If teletext pages will be edited on separate computer(s), Insertor has to be connected to common **LAN** 10/100BASE TX by proper Ethernet cable with RJ 45 connector. Used protocol is **TCP/IP**, default network configuration is "obtain automatically from server", but can be modified by your network administrator.

There is a main **power cradle switch** on the rear panel close to the power cord. This one disconnects AC power lines totally. The **green power button** on the front panel is configured to start the system by momentary press and switch off the computer by holding the button more than 3 seconds. If you have mouse or keyboard connected, it is recommended to switch off by usual closing the Windows.

The power supply is configured to remember last state if the power line fails. It means the system will restart automatically if AC power was interrupted.

Software Installation

Insertor has all necessary software already installed. (MS Windows XP, TTXIns, FTDI drivers, TTX Editor, TTXCC, Loopback, MS .net framework)

To install separate Teletext Editor to your own PC please follow instructions on supplied CD.

Insertor setup

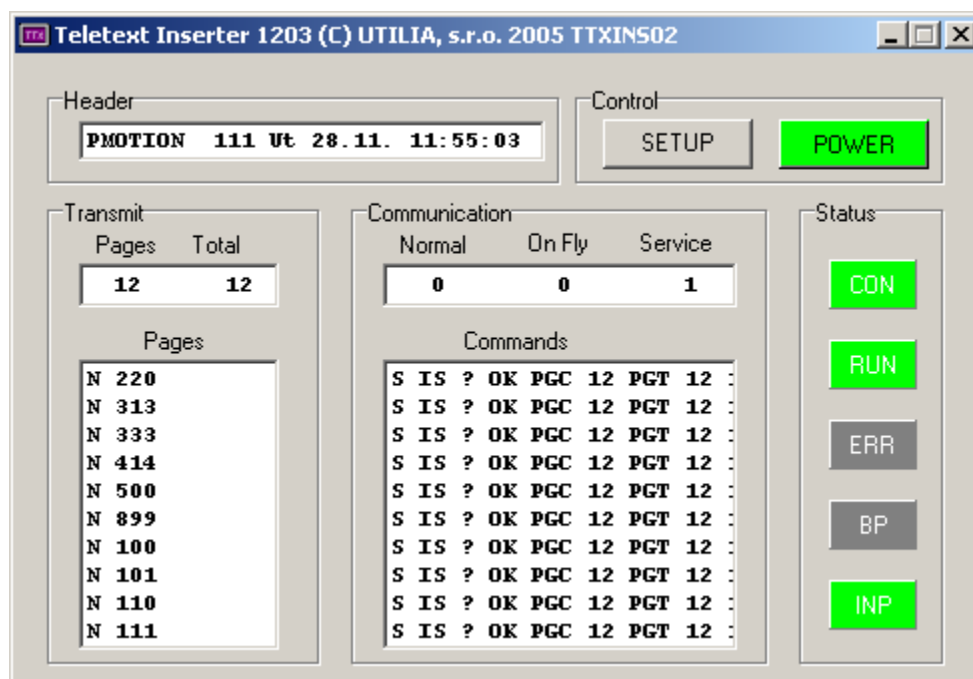
There are some important insertor parameters which has to be setup before first use in live TV broadcasting.

Connect monitor, mouse and keyboard or arrange Remote Desktop to the Insertor. When startup is finished **TTXIns** will be displayed on your desktop or can be found minimized at notification area at the right end of the task bar.



TTXIns

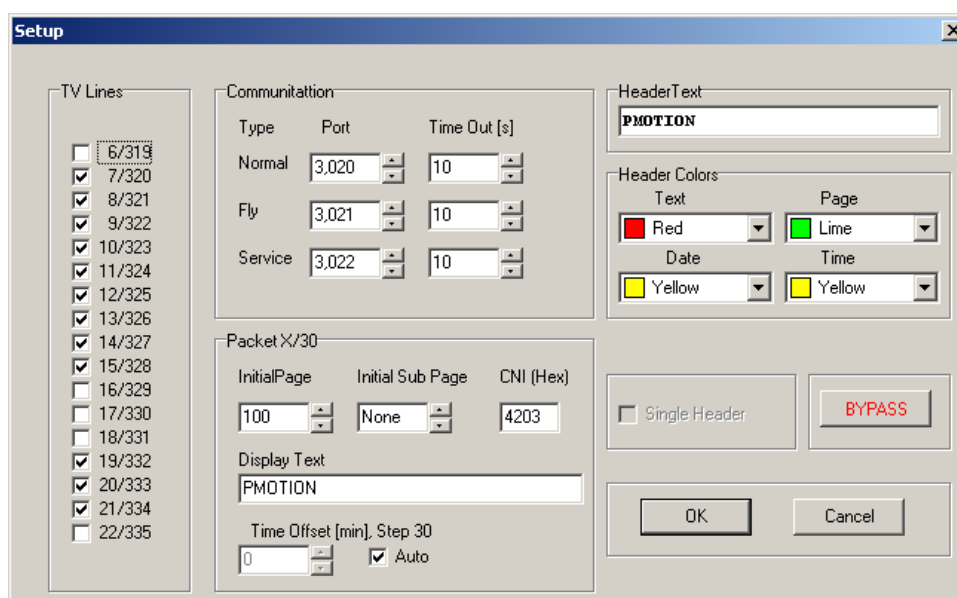
Main program window of TTXIns shows diagnostic information – current header, number of pages in carousel, total number (inclusive subpages), transmitting progress, number of opened connections and commands received from **TTXCC**.



Status area indicates incidental troubles of inserter card by red color. **CON**=no connection to card, **RUN**=not active, **ERR**=internal error, **BP**=bypass, **INP**=no video in.

Do not click POWER button, it will close TTXIns and stop all teletext transmission!

Click on **SETUP** now.



Checkboxes at **TV Lines** numbers signs real TV line numbers in which you want to transmit teletext data. It is good idea to consult this setting with responsible personal to prevent conflict of some other VBI signals. Typical TV Lines settings is on this image. You should also set up properties of the header in upper right corner of the SETUP window. Important is a **Header Text**, usually the name of TV station or teletext entrepreneur.

Pressing the **BYPASS** button cause direct connection between VIDEO IN and OUT, so no teletext can be inserted! But this function is very useful for signal troubleshooting in TV chain.

Important settings are also at **Packet X/30** section. Please set:

- Initial page/subpage. This is a page which will be shown after tuning TV receiver to your TV channel.
- **CNI**. Country and Network Identification Code which is assigned by EBU/ETSI to TV Broadcasters.
- **Time offset** from GMT can be set manually or automatically from operating system.
- Display text. Modern TV receivers shows this text after tuning to channel. Usually this is a name of your TV station.

Please do not change **Communication settings** if it has not specific reason. Use the port values of this settings to configure TTXCC/Setup settings at Editor computer. (FLY port is not used by TTXCC.)

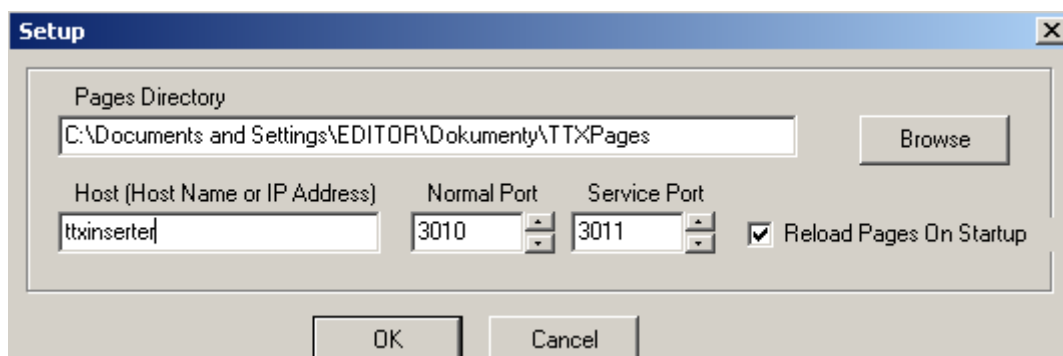
TTXCC

If you want to use Editor installed at Inserter you have to run **TXCC** at Inserter. If your Editor will be installed on another computer only, you do not need to start TTXCC at Inserter.

Two or more Editors can be also in use simultaneously. Every Editor's computer needs running TXCC to work on-line.

TTXCC shows communication history between **Pages directory** and Inserter in main window. Inserter status can be found in bottom row.

Usually this program can be minimized to the tray. But it has to be correctly set up.



Pages Directory is a directory, where finished pages are saved by Editor to be transferred to Inserter.

Host name/IP address is network name or address of Inserter.

Normal Port, Service Port -fill the same as your TTXIns/Setup has.

Reload Pages On Startup - Reload pages performs replacing all pages stored in Inserter by pages from local **Pages Directory**. It is recommended if single editor is used. If not checked, reload has to be done manually by TTXCC/Tools/Reload pages.

3. EDITING TELETEXT PAGE

Although different images on teletext pages can be seen, it is not easy to create them as it could be by common graphics or text editors.

TEXT

Teletext page consists of 23 text lines, every line includes 40 positions. Position can be used as two color text sign or graphic element (2x3 matrix). Using of position is defined by preceding **attribute**.



Check **View/Attributes** to display attributes directly on page.

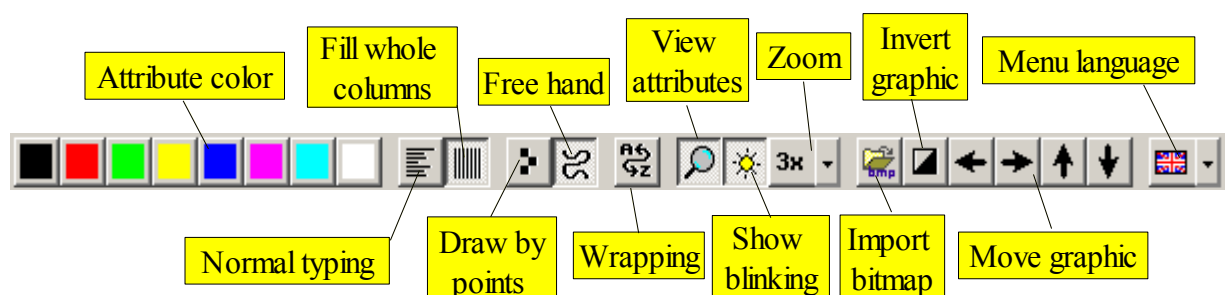
Default attribute is set to white text/black background at the beginning of every line. If you want to change text color, click on one of **attribute color** icons to insert text color attribute. Attributes are inserted on position where text cursor is located. (Please note different meaning of text and mouse cursors). Hold **Ctrl** while clicking to change background color.

Attribute is effective to next attribute or up to the end of line. Type of attribute which is valid for current text cursor position is also displayed in status bar. Editor supports **Insert/Overwrite** mode selection and **wrapping**.

GRAPHIC

Hold **Shift** while clicking **attribute color** to insert graphic color attribute. Note that text or graphic attribute occupies one position and background needs two.

It is necessary to place graphic attributes left from drawing area to create graphic. There is a special tool to fill whole column with the same signs or attributes.



To draw select one of two tools "**Draw by points**" or "**Free hand**". Point drawing makes

color pixel on mouse left click and erase it by left click on the same place. Free hand draws while left mouse button is pressed and erases by right button. Maximum two colors can share one position - graphic and background.

Black and white bitmaps can be imported by **Tools/Image import**.


Rectangle areas can be selected by mouse while **Alt** is pressed and usual clipboard operation are supported.

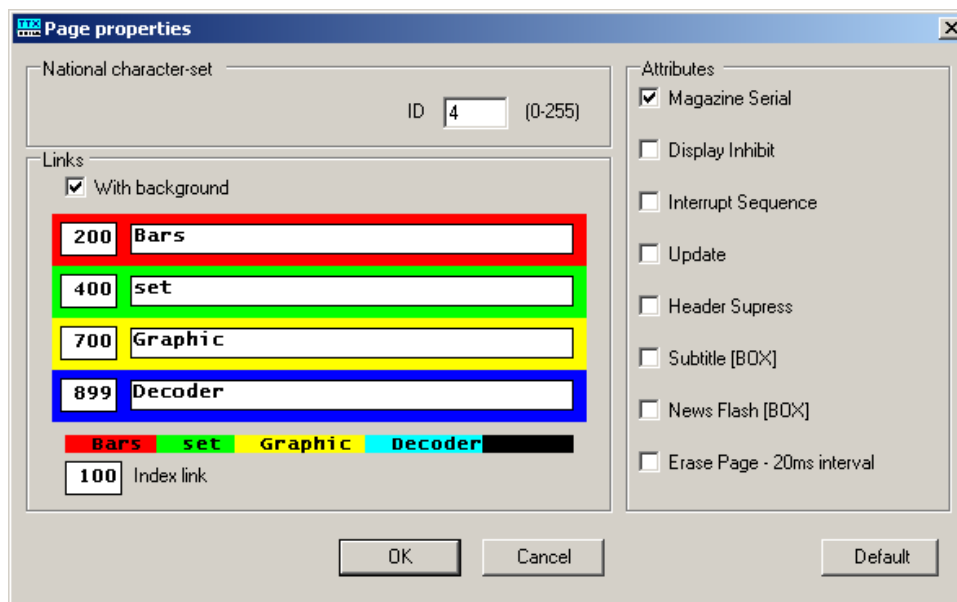
Closed editing area can be created by mouse if **Ctrl** is pressed. Quit selection by **Esc**.

LIST of ATTRIBUTES

Attribute	Shortcut used in Page Editor
Alpha Black	A
Alpha Red	AR
Alpha Green	AG
Alpha Yellow	AY
Alpha Blue	AB
Alpha Magenta	AM
Alpha Cyan	AC
Alpha White	AW
Graphics Black	G
Graphics Red	GR
Graphics Green	GG
Graphics Yellow	GY
Graphics Blue	GB
Graphics Magenta	GM
Graphics Cyan	GC
Graphics White	GW
Double Height	DH
Normal Height	NH
Separate Graphics	SG
Clear Graphics	CG
Hidden Text/Graphic	CO

Color page links (packet X/27)

Check VIEW/LINKS in TTXEditor menu first. Click on **Links** icon  to display Links window:



National character set has to be correctly selected to display characters properly on TV. Use only values 0 - 7 (bits C12, C13, C14 are affected). See also official Teletext description (ETSI EN 300 706) for more details.

Page number of linked teletext page is in colored left column. In right part fill the text to be displayed on TV for particular link. How the result will look on TV is shown below. Index link means the page which is shown by pressing INDEX button on TV receiver.

There are more page attributes of on the right side:

Magazine Serial = selects if counting of pages is displayed on TV (usually ON)

Display Inhibit = page not displayed (usually OFF!)

Interrupt Sequence = not used here (page takes this attribute from it's name)

Update = not used

Header Suppress = hides Page Header on TV (usually ON)

Subtitle = page is displayed as subtitle - in live TV picture, so called "BOX" (usually OFF!)

News Flash = page as newsflash - in live TV picture, so called "BOX" (usually OFF!)

Erase Page = page is reloaded every time when received (usually OFF).

If you press **Default** current Page Properties will be used for every new page.

More editing features can be found by passing Editor's menus which are self explaining.

You can also look at supplied sample pages while "View attributes" is active to see the construction of pages.

Saving page

Every time page is saved to **Pages Directory** it is transferred immediately to Inserter and transmitted. This directory (folder) is specified in TTXCC/SETUP. If you work on pages which are not ready to be transmitted use another "working" directory or close **TTXCC**.

There are several rules how to name the **page file**.

File extension is always *.pg. File name begins with letter "P" or "O". "P" means regular page, "O" marks page transmitted with priority (index page, commercials). Please do not mix P and O in subpages.

Letters P or O are followed by 3 numeric characters (100 - 899). It is directly the number of page on TV receiver. Single letter a - z can be added to sign a subpage.

For regular pages can be added timing which means the minimum time (seconds) to repeat sending of this page. It is useful if you transmit only small amount of pages and therefor sub pages are changing too quickly on TV.

For preferred pages must be timing always defined. The value is in seconds and means time period of transmitting. Timing value is always separated by underscore sign.

Examples:

P100.pg = page number 100 regular, no subpages

P200a_5.pg = first page 200, minimum period of display 5 seconds

P200b_10.pg = second subpage 200, minimum period of display 10 seconds

o300_3.pg = page 300 no subpages, preferred transmitting every 3 seconds

It is necessary to save pages carefully to prevent making bad filenames or unwanted overwrite. Please note the * (star symbol) at page TitleBar that is signaling loaded page is already modified.

You can also work off line with Editor to prepare pages and than copy pages to **Page Directory**. User can create more working directories - for example - for different days. Every time you copy page(s) to Page Directory TTXCC transfers them to Inserter. Copying can be driven by Windows Scheduled Task or your Automation system. It depends on your requests, possibilities and fantasy.

Alphabetical Index

A	
attribute.....	6, 7, 8
B	
BP.....	4
BYPASS.....	3, 4, 5
C	
CNI.....	5
Communication settings.....	5
CON.....	4
E	
ERR.....	4
G	
green power button.....	3
H	
Header Text.....	4
Host name.....	5
I	
INP.....	4
Insertter setup.....	2, 3
install external editor.....	2
IP address.....	5
L	
LAN.....	3
N	
Normal Port.....	5
P	
packet X/27.....	8
Packet X/30.....	5
Page Header.....	2, 8
Pages Directory.....	2, 5, 9
power cradle switch.....	3
R	
Reload Pages On Startup.....	5
run.....	4, 5
S	
saving page.....	2, 9
Service Port.....	5
T	
TCP/IP.....	3
Time offset.....	5
TTXCC.....	2, 3, 5, 9
TTXIns.....	2, 3, 4, 5
TV line.....	4
V	
VIDEO IN.....	3, 4, 5
VIDEO OUT.....	3