

RSF

ProDAP

LOOPING

Quick Start Guide

For Looping V 3.2.1.41



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Chapter 1

INTRODUCTION

Overview

Looping is a piece of software used to create projects for the Pilote show controller. Codes and/or drivers are created in Looping, or learned through the Pilote directly from external sources. Codes can still be edited after being learnt. Looping has been designed so that anyone with a basic knowledge of audiovisual automation can learn to use the software and start creating projects within an hour. Updates for Looping are released at various intervals, and can be downloaded (free of charge) by going through the menu 'Help-->Update Looping'

Description

The Pilote runs on a Timeline (TL) basis. A TL is basically a set of instructions to be carried out within a specific timeframe. TL use is particularly appropriate in museum environments. In Looping, the desired code (for an external device) is placed at the appropriate time in the TL. When the TL is run in the Pilote, the code will be sent once the Pilote reaches this point in the TL.

A TL can be triggered by any of the entry ports of the Pilote, started by another TL, or by a combination of variables and entry ports.

The input interface of the Pilote is configurable to interact with the project in different ways. The next chapters explain how to setup up the Pilote and configure the program's options..

Installation

Download the installation files from our website at <http://looping.go-rsf.info/>
Install the files and run the program.

Each time you connect a new Pilote to the USB port of your computer, Windows asks for the driver to install. Windows treats each individual Pilote as a new device requiring the driver. It is stored in the installation folder of Looping; c:\Program Files\RSF\Looping\USB_RS_F_Pilote\ (unless the default install folder was changed at setup)

Chapter 2

BASICS

Opening Looping

When opening Looping, a menu box will appear by default listing all recent projects. To open one of these projects double click on it. To open another project not in the list click the "open" button, and to create a new project click on the "new" button.

Creating a new project

When creating a new project Looping creates a new directory whose name is the name of your new project. The project directory contains the project file, as well as other directories (DMX info, audio files, driver code lists, etc)



Hardware & Project Setup

After creating a new project, the first thing to setup is the general hardware and software parameters of the Pilote. The configuration window opens automatically, and can be accessed again later with the 'Edit-> Hardware Setup' menu, or with the direct access button shown here on the left.

Different tabs allow the setup of general parameters and optional interfaces:

- Variables and type

- Constants and variable

- Type : select the type of unit to program (does it have an integrated audio player?)
 - Default display allows the selection of what the display will show at startup
 - Constant functions
 - First and Last TL in list creates a list of TLs that can be cycled through with one repeating input
 - Countdown is a digital counter value which can be set between 1 and 50000 at startup
 - Names and Values of variables enables the renaming of each of the 8 variables and the setting of their values at startup from 0 to 250

- Variable Conditions - Name and determine the conditions to directly trigger an event once the condition is true

- Input Conditions - Name and determine the conditions to work in conjunction with another trigger to start an event

- Outputs

- External devices (will be explained in more detail later)

- Selection of desired driver (code list)
 - Creation / Modification of a driver
 - Import a driver from another source (e.g. project created on another PC)

- Relays

- Number of relays : to be adjusted when optional 12 Output extension card(s) is/are used or, if you don't use all the outputs, enter the number of outputs you really use and only this number of inputs will be visible in the program, to make the display as simple and light as possible.
 - Editable relay names
 - Tick boxes on left indicate a relay is NC (default is NO)

- DMX

- Each DMX channel can be renamed

- Inputs

- Number of inputs:to be adjusted when optional 12 Input extension card(s) is/are used or, if you don't use all the inputs, enter the number of inputs you really use and only this number of inputs will be visible in the program, to make the display as simple and light as possible.
 - ID parameter: the box must be ticked to use this function. When multiple Pilotes are in a rack each can be individually addressed through this ID number

- RS1 & RS2 ports can be configured to detect trigger codes
 - Different protocols are available
 - 1.Standard codes : 100 codes, see appendix
 - 2.Simplified ASCII codes : 100 codes, see appendix
 - 3.TouchKit is an RS232 touchscreen interface
- Ethernet
 - Input Protocol to configure the UDP codes the Pilote will accept
 - IP Address (no DHCP compatibility)
 - Port : listening port of the Pilote
 - Network Mask & Gateway address

Drivers for external devices

The 'Code List for External devices' menu is an important part of the software. It enables you to create, edit and test the code tables for serial, Ethernet, and IR controlled devices.

1. 'Choose code list' enables to select the driver for each port. The drop down menu is the list of drivers recorded in your local Looping software directory, the default location is c:/Program Files/RSF/Looping/Codes
2. Each driver can be edited, tested or learned from this menu.
3. Creating a driver is easy, the serial strings can be typed directly on the keyboard in ASCII or Hex, or can be learned by the software (see next chapter).

Parameters for each protocol are setup in the same menu.

Rem: output baudrate can be different from input protocol. It is important to remember that the RS232 ports can't talk (transmit) and listen (receive) at the same time.

Each code can be live-tested during the creation of the code list with the 'Test' button if Looping is connected to a Pilote.

The driver to be used for the current project can be selected from the drop-down menu.

When saving a driver, Looping asks if you want to use it in other projects, answering yes will copy the code list to your local Looping software directory. To change the location of this folder, use the menu: Edit > Preferences > Define directory for duplicate code list

Learning Capabilities

An intuitive and very useful learning tool is integrated into Looping. This feature enables you to record Infra Red, Serial or UDP Ethernet codes directly from another machine that is configured to command the units you need to control.

RS232 Connect the device to the RS port of the Pilote.
Configure the serial parameters.
Press the 'Live rec' button in Looping and send the RS string from the external device.
Click 'Live rec' to stop listening on the RS port.
Save the code with its name and add the next code.

Rem: the input configuration of the port is independent from the input protocol for triggering selected in the Setup menu. Configuration of the port will switch from driver config to trigger protocol depending on how it is being used (learning tool or trigger)

Ethernet Connect the external device to the Ethernet port of the Pilote.
Configure the LAN parameters and establish communication with the external device.
Press the 'Live rec' button and send the LAN code from the external device.
Click 'Live rec' to stop listening on the Ethernet port.
Define the target IP address and port for this code.
Save the code with its name and add the next code.

Infra Red Point the IR remote at the IR sensor, situated in the small aperture above the 3.5mm jack socket on the rear panel, for graphic illustration please refer to the Pilote Quick Start Guide.
Press the 'Live rec' button,
Send the IR code by holding the button on the actual remote control for approx 2s.
Save the code with its name and add the next code.

DMX This will be discussed in more detail later.

Tips & Tricks

- When saving a code list, Looping asks if it is to be used in another program. Answering 'no' will only save the code list in the current project folder. Answering 'yes' will also place a copy of the code list in the Looping master code list folder (c:\Program Files\RSF\Looping\Codes\ by default), and it will be available when creating new projects.
- While different code lists can't be used in different TLs in the same project, a large code list can be created containing various codes for various devices. Each code list is limited to a total of 1000 codes.

New Event

Create a new Event with the button  or with the menu 'Events —>New'

To define the event options, select from the following triggering options in the drop down menu:

- Input Contacts - select input that creates the event from second menu (explained in further detail below)
- RS1 - select code from second drop down menu
- RS2 - select code from second drop down menu
- Ethernet - select code from second drop down menu
- Others - select the what creates the event (explained in further detail below)
- Variables - select and configure the condition that enables the event when it is true (explained in further detail below)
- Internal - can only be called by internal functions

In total, the Pilote can accept a huge number of triggering events:

- Input Contacts : up to 32 inputs (when using 2 optional 12IN cards)
- RS1 : 300 codes
- RS2 : 300 codes
- Ethernet : 300 codes
- Others : 17 events available (IR, Analog, ...)
- Variables : 100 different conditions (different conditions from those to be used in conjunction with another trigger)

Rem: Be aware that conditions can be used in different steps of the project. Changing a condition in this section

Event Setup

Each event is linked to an action.

The action to link to the event is selectable with the button shown on the right.



The different actions available are:

- 'Start TimeLine' to select an existing TL that starts when event occurs
- 'Put TL on standby' : Looping can load a TL into its standby memory. Looping will wait for a start event to play the TL that is on standby.
This option loads a TL into the standby memory
- 'Cancel TL on standby' empties the standby memory
- 'Start TL currently on standby' starts the TL in the standby memory as explained above
- 'Modify variables' allows you to increase or decrease the variables individually as well as to set them to specific values
- 'Start next TL in list' (as explained on P3)
- 'Starts previous TL in list' (as explained on P3)
- 'Start random TL in list' (as explained on P3)
- 'Re-initialise TL sequence' will reset the next TL to be triggered from the list to the 1st TL in the list
- Volume adjustment
- 'Decrease countdown'
- 'Reset countdown to initial value'
- 'Reset Pilote'



A condition can be added to the event. This has the same functionality as an AND gate - when the trigger is received, the condition must be true to implement the action.


Rem: the condition is tested only when the event occurs. The input contacts must toggle to trigger any action.

Input contact events include additional options :

- Impulse : if the action is to start a TL, the TL can start on a simple impulse (Impulse option selected) or play as long as the input is closed (Held option selected).
Every other action only accepts Impulse triggering
- Inverted input switches the input contact from normally opened behaviour to normally closed behaviour.
Input must be opened to trigger the action.
- Loop TL if input is active restarts the TL if input is active at the end of the TL

Programming a timeline

Before starting to program a TL, the properties have to be configured. This can be performed by clicking on the configuration button of the TL, automatically when a TL is created with the  button, or automatically the first time it is attempted to open the TL. The menu can also be accessed with the  button from within the TL

- Name : of this TL
- Priority : hierarchy for controlling the interaction between different TLs (see TL type below)
- Duration (can be automatically set to length of audio track being used in TL by clicking the  button)
- Start : inserts a delay between the input trigger and the TL being started
- Adjustable : when selected, the delay can be adjusted on the Pilote with the IR remote
- The TL type works in combination with the priority parameter.
 - Stoppable by TL with priority > :
 - TL stops when a TL with higher priority starts
 - A TL with the same priority won't start when this type of TL is running
 - Stoppable by TL with priority >= :
 - TL stops when TL with higher or same priority starts
 - TL with same priority may start when this type of TL is running
 - Timeline is interruptible and can be restarted before it reaches it's own end with the same input trigger
 - Stoppable by TL with priority >= (except this one) :
 - TL stops when TL with higher or same priority starts
 - TL with same priority may start when this type of TL is running. TL is non interruptible, it can't be restarted before it's own end with the same input trigger
 - Multiple with priority = :
 - TL may run at same time as other TL(s) with the same priority and type.
 - TL stops if TL with higher priority starts
 - If a TL with higher priority is running, the TL doesn't start
 - If the trigger for this TL is detected no action will be taken if it is already running.
 - Multiple with priority =(interruptable) :
 - TL may run at same time as other TL with the same priority and type. TL stops if TL with higher priority is started
 - If a TL with higher priority is running, this TL won't start
 - If the trigger for this TL is detected while it is running from a previous trigger it will restart.
 - Independent, Stoppable by priority >=200 :
 - TL runs independently from all other TLs and doesn't interact with them unless their priority is higher than 199.
 - Any TL with priority higher or equal to 200 stops the TL
- External devices : select the output ports to control in this TL
- Relays : select the relays to control in this TL
- Sounds : the Pilote Audio has an on-board audio player and can be connected to optional additional external sound cards (manufactured on demand). Select the audio files to use in this timeline. The first frame of the audio file can be placed at a specific position in the timeline with the 'Start Delay' parameter.
PCM Wave files can be selected from the software and will be encoded in mp3 before being uploaded to the Pilote.
- The DMX tab enables the use of up to 250 DMX channels in the TL.
DMX sequences can be loaded from another location or program, created in Looping, or learnt from any DMX lighting desk / sequencer (see 'DMX Controls' chapter)
In each case the DMX channels can always be modified at a later stage in Looping.
By default Looping selects sequential channels to edit in a TL. If not every DMX channel is to be used in a certain TL it can be de-selected by clicking on the "List of hidden circuits" button

The timeline properties are now setup.
Press OK and start programming the TL.


The first time a TL is opened all edit buttons of the lines in the TL will be red. This is to signify that tracks can be modified.

At all subsequent openings of the TL every edit button will be black. While the edit button is black, no actions can be modified, however clicking on the edit button returns this track to a modifiable state, and activates the 'erase all' button. Care should be taken when using the 'erase all' button as all information deleted is irretrievable.

Tracks in the TL

Each device corresponds to a line (track) in the TL.

You can choose to hide the tracks of the devices that are not used in the TL. Deselect the devices that are not needed in the TL properties window.

Each cue (command)  will be positioned on the track with the time and command name information.

Click on the device icon or right-click on the track to insert a command.

Output contacts are driven directly on the track as well as the DMX channels.

- Time marks have no direct influence on the running of the TL - they are simply programming aids. This track is dedicated to program short notes linked to time indications or specific moment of the show (TL).



The programmer can use these time marks to move any command to the time of this marker.

The programmer can insert a Time mark by clicking on the button displayed to the left, or he would allow the TL to play through, tapping at each action point, before later coming back to insert the required action in the TL.



Note - The button shown on the left is used to configure the keyboard inputs for the Time marks and relays (see below). In order to insert time marks it is necessary to use the 'Key for start capture' and not just start the TL with the space bar.



After inserting the Time marks, the programmer can rename them to use them easily in the program, by right clicking on an existing cue and select the menu 'Move to Marker'.

- Special Functions, this is the same menu as the event setup (and can be used in conjunction with the conditions):
 - 'Start TimeLine' to select an existing TL that starts when event occurs
 - 'Put TL on standby' : Looping may load a TL in its standby memory. Looping will wait for a start event to play the TL on standby.
 - This option loads a TL into the standby memory
 - 'Cancel TL on standby' empties the standby memory
 - 'Start TL currently on standby'
 - 'Modify variables' allows you to increase and/or decrease the variables as well as set them to specific values
 - 'Start next TL in list'
 - 'Starts previous TL in list'
 - 'Start random TL in list'
 - 'Re-initialize TL sequence' will reset TL list to the 1st TL in the list
 - Volume control
 - 'Decrease countdown'
 - 'Reset countdown to initial value'
 - 'Reset Pilote'

The next tracks are related to each port of the Pilote:

- Ethernet port
- IR ports
- RS ports
- Relays
- Audio player
- DMX channels

Connection & Transfer

 Connect the Pilote to the USB port of a computer. When connection is established, the icon turns blue.
 Click on the LAN icon to test the IP connection and confirm the current IP address and port of the target Pilote, it turns green when a connection is established.

Transfer the program to Pilote to start using it. Looping projects can be transferred via Ethernet and USB. Firmware updates can only be performed via the USB connection.

Live Commands

Connect the Pilote to a computer via the USB port and establish communication.

To ease the programming of a show, Looping offers several live commands that can be driven directly from the software in connection with the Pilote.

Each TL can be triggered in Looping and played live on the Pilote when connected via USB.

Edit the desired TL and press the 'Play' button to start TL playback.

The number of the TL is displayed on the Pilote display with a progress bar during playback.

LAN, RS and IR codes can be sent to devices while programming with Looping and connected by USB.

Open the driver edit menu and use the 'Test' button to send commands to devices.

A light show can be tested during programming when connected by USB.

Directly by playing TL or using the DMX sequencer.

Changes made to TLs can be automatically uploaded when exiting the TL.

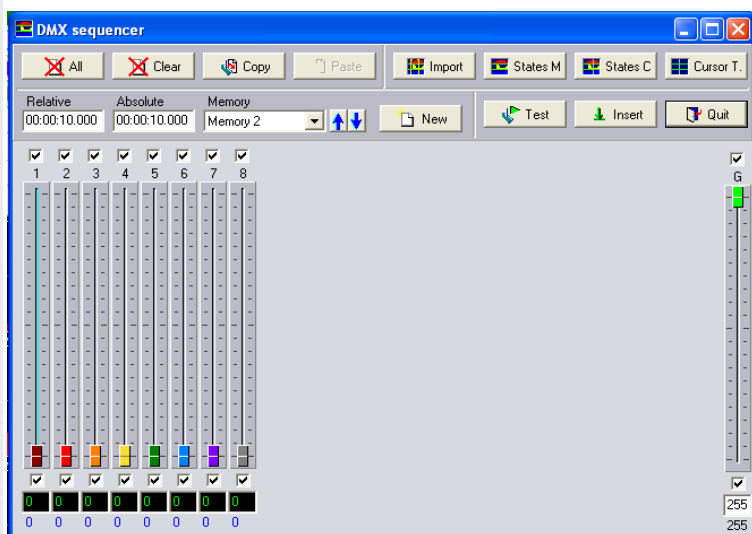
Chapter 3

ADVANCED PROGRAMMING

DMX Control

There are several different possible methods when programming light shows.

- On the TL track window, simply click at the time and level that is to be implemented
- Use the DMX sequencer (for more details see below)
- Record a show from any standard DMX lighting desk (once a show has been recorded it can still be edited in either the TL or the sequencer.



DMX Sequencer

- Create new memory points by entering time and channel levels, then insert all memory points in the TL with the 'Insert' button.
- Run the current lighting show with the 'Test' button.
- Import the sequences from the TL into the sequencer. This converts the DMX signals in the TL to editable memories in the sequencer.
- 'States M' imports the channel levels from the TL to the sequencer, at the time indicated in the sequencer.
- 'States C' imports the channel levels from the TL to the sequencer, at the position of the cursor.
- 'Cursor T' loads the cursor position into the time box in the sequencer.
- Separately select or deselect the checkboxes for each channel to indicate if the sequencer should affect them or not (equivalent to 'edit' button in TL).
- Relative and absolute times are linked - changing one will change the other. Absolute time of Memory N = Absolute time of Memory N-1 + relative time of Memory N

Using audio in a TL

Looping must be given a WAV file to put it into a TL. It is normal practice to select the audio files that are to be used when creating the TL. They can then be easily found and inserted later. Audio files are selected from the configuration window of a TL.

Tips & Tricks

- When saving a driver, Looping asks if it is to be used in another program. Answering 'no' will save the driver in the program folder only. Answering 'yes' will place a copy of the driver in the driver folder of Looping (c:\Program Files\RSF\Looping\Codes\ by default), and it will be available when creating new programs.
- Markers are used to copy & paste or delete cues located between them. Tracks are affected or not by the actions between the markers if the edit buttons are checked or not.
- Move TLs up & down in the main window by dragging and dropping them.
- A text note is attached to the program. Edit and modify it with the note icon on the right of the toolbar.
- Search for updates with the 'help->Update' menu.
- To send LAN codes to all the UDP-enabled devices connected to the network, enter 255.255.255.255 in the target IP address box.
- The Pilote only works via Ethernet using the UDP protocol. This is optimised for time-critical deliveries, but packet drops are possible. If UDP signals are sometimes not received due to high network traffic it can be necessary to send the code(s) twice with a few frames inbetween.
- A non-compiled version of the project is not stored on the Pilote. If future modifications could be necessary it is recommended to keep copies of projects on-site on a separate memory card or USB stick.
- If Looping has previously been used on a computer where multiple monitors were previously used, but now is only one, it is possible that the program will not appear on the monitor. It is sufficient to click multiple times on Looping in the taskbar to bring it back up.
- An Ethernet, RS232, or IR code, or an internal function can be moved to a time marker by right clicking on the code and selecting the relevant time marker from the list in the "set position on time" menu.

Known Issues

- Looping will have difficulties accepting time durations in certain local versions of Windows. If changes to the TL duration are not recorded, and are incorrectly displayed it will be necessary to change temporarily the regional settings of your computer to France (through the Windows control panel).

RS232 and LAN Input Codes Table

Standard (Hexa)

Event Triggering codes

Code N°	String	Code N°	String	Code N°	String	Code N°	String
1	00 01 00 00 00 00 00 01	26	00 1A 00 00 00 00 00 1A	51	00 33 00 00 00 00 00 33	76	00 4C 00 00 00 00 00 4C
2	00 02 00 00 00 00 00 02	27	00 1B 00 00 00 00 00 1B	52	00 34 00 00 00 00 00 34	77	00 4D 00 00 00 00 00 4D
3	00 03 00 00 00 00 00 03	28	00 1C 00 00 00 00 00 1C	53	00 35 00 00 00 00 00 35	78	00 4E 00 00 00 00 00 4E
4	00 04 00 00 00 00 00 04	29	00 1D 00 00 00 00 00 1D	54	00 36 00 00 00 00 00 36	79	00 4F 00 00 00 00 00 4F
5	00 05 00 00 00 00 00 05	30	00 1E 00 00 00 00 00 1E	55	00 37 00 00 00 00 00 37	80	00 50 00 00 00 00 00 50
6	00 06 00 00 00 00 00 06	31	00 1F 00 00 00 00 00 1F	56	00 38 00 00 00 00 00 38	81	00 51 00 00 00 00 00 51
7	00 07 00 00 00 00 00 07	32	00 20 00 00 00 00 00 20	57	00 39 00 00 00 00 00 39	82	00 52 00 00 00 00 00 52
8	00 08 00 00 00 00 00 08	33	00 21 00 00 00 00 00 21	58	00 3A 00 00 00 00 00 3A	83	00 53 00 00 00 00 00 53
9	00 09 00 00 00 00 00 09	34	00 22 00 00 00 00 00 22	59	00 3B 00 00 00 00 00 3B	84	00 54 00 00 00 00 00 54
10	00 0A 00 00 00 00 00 0A	35	00 23 00 00 00 00 00 23	60	00 3C 00 00 00 00 00 3C	85	00 55 00 00 00 00 00 55
11	00 0B 00 00 00 00 00 0B	36	00 24 00 00 00 00 00 24	61	00 3D 00 00 00 00 00 3D	86	00 56 00 00 00 00 00 56
12	00 0C 00 00 00 00 00 0C	37	00 25 00 00 00 00 00 25	62	00 3E 00 00 00 00 00 3E	87	00 57 00 00 00 00 00 57
13	00 0D 00 00 00 00 00 0D	38	00 26 00 00 00 00 00 26	63	00 3F 00 00 00 00 00 3F	88	00 58 00 00 00 00 00 58
14	00 0E 00 00 00 00 00 0E	39	00 27 00 00 00 00 00 27	64	00 40 00 00 00 00 00 40	89	00 59 00 00 00 00 00 59
15	00 0F 00 00 00 00 00 0F	40	00 28 00 00 00 00 00 28	65	00 41 00 00 00 00 00 41	90	00 5A 00 00 00 00 00 5A
16	00 10 00 00 00 00 00 10	41	00 29 00 00 00 00 00 29	66	00 42 00 00 00 00 00 42	91	00 5B 00 00 00 00 00 5B
17	00 11 00 00 00 00 00 11	42	00 2A 00 00 00 00 00 2A	67	00 43 00 00 00 00 00 43	92	00 5C 00 00 00 00 00 5C
18	00 12 00 00 00 00 00 12	43	00 2B 00 00 00 00 00 2B	68	00 44 00 00 00 00 00 44	93	00 5D 00 00 00 00 00 5D
19	00 13 00 00 00 00 00 13	44	00 2C 00 00 00 00 00 2C	69	00 45 00 00 00 00 00 45	94	00 5E 00 00 00 00 00 5E
20	00 14 00 00 00 00 00 14	45	00 2D 00 00 00 00 00 2D	70	00 46 00 00 00 00 00 46	95	00 5F 00 00 00 00 00 5F
21	00 15 00 00 00 00 00 15	46	00 2E 00 00 00 00 00 2E	71	00 47 00 00 00 00 00 47	96	00 60 00 00 00 00 00 60
22	00 16 00 00 00 00 00 16	47	00 2F 00 00 00 00 00 2F	72	00 48 00 00 00 00 00 48	97	00 61 00 00 00 00 00 61
23	00 17 00 00 00 00 00 17	48	00 30 00 00 00 00 00 30	73	00 49 00 00 00 00 00 49	98	00 62 00 00 00 00 00 62
24	00 18 00 00 00 00 00 18	49	00 31 00 00 00 00 00 31	74	00 4A 00 00 00 00 00 4A	99	00 63 00 00 00 00 00 63
25	00 19 00 00 00 00 00 19	50	00 32 00 00 00 00 00 32	75	00 4B 00 00 00 00 00 4B	100	00 64 00 00 00 00 00 64

RS232 and LAN Input Codes Table

Standard (Hexa)

Direct TL Triggering codes (Priorities are taken into consideration)

Protocol:

- Byte 1 = 00
- Byte 2 = number of the TL to start
- Byte 3 = 10
- Byte 4, 5, 6 & 7 = 00
- Byte 8 = Checksum

TL N°	String	TL N°	String	TL N°	String	TL N°	String
1	00 01 10 00 00 00 00 11	26	00 1A 10 00 00 00 00 2A	51	00 33 10 00 00 00 00 43	76	00 4C 10 00 00 00 00 5C
2	00 02 10 00 00 00 00 12	27	00 1B 10 00 00 00 00 2B	52	00 34 10 00 00 00 00 44	77	00 4D 10 00 00 00 00 5D
3	00 03 10 00 00 00 00 13	28	00 1C 10 00 00 00 00 2C	53	00 35 10 00 00 00 00 45	78	00 4E 10 00 00 00 00 5E
4	00 04 10 00 00 00 00 14	29	00 1D 10 00 00 00 00 2D	54	00 36 10 00 00 00 00 46	79	00 4F 10 00 00 00 00 5F
5	00 05 10 00 00 00 00 15	30	00 1E 10 00 00 00 00 2E	55	00 37 10 00 00 00 00 47	80	00 50 10 00 00 00 00 60
6	00 06 10 00 00 00 00 16	31	00 1F 10 00 00 00 00 2F	56	00 38 10 00 00 00 00 48	81	00 51 10 00 00 00 00 61
7	00 07 10 00 00 00 00 17	32	00 20 10 00 00 00 00 30	57	00 39 10 00 00 00 00 49	82	00 52 10 00 00 00 00 62
8	00 08 10 00 00 00 00 18	33	00 21 10 00 00 00 00 31	58	00 3A 10 00 00 00 00 4A	83	00 53 10 00 00 00 00 63
9	00 09 10 00 00 00 00 19	34	00 22 10 00 00 00 00 32	59	00 3B 10 00 00 00 00 4B	84	00 54 10 00 00 00 00 64
10	00 0A 10 00 00 00 00 1A	35	00 23 10 00 00 00 00 33	60	00 3C 10 00 00 00 00 4C	85	00 55 10 00 00 00 00 65
11	00 0B 10 00 00 00 00 1B	36	00 24 10 00 00 00 00 34	61	00 3D 10 00 00 00 00 4D	86	00 56 10 00 00 00 00 66
12	00 0C 10 00 00 00 00 1C	37	00 25 10 00 00 00 00 35	62	00 3E 10 00 00 00 00 4E	87	00 57 10 00 00 00 00 67
13	00 0D 10 00 00 00 00 1D	38	00 26 10 00 00 00 00 36	63	00 3F 10 00 00 00 00 4F	88	00 58 10 00 00 00 00 68
14	00 0E 10 00 00 00 00 1E	39	00 27 10 00 00 00 00 37	64	00 40 10 00 00 00 00 50	89	00 59 10 00 00 00 00 69
15	00 0F 10 00 00 00 00 1F	40	00 28 10 00 00 00 00 38	65	00 41 10 00 00 00 00 51	90	00 5A 10 00 00 00 00 6A
16	00 10 10 00 00 00 00 20	41	00 29 10 00 00 00 00 39	66	00 42 10 00 00 00 00 52	91	00 5B 10 00 00 00 00 6B
17	00 11 10 00 00 00 00 21	42	00 2A 10 00 00 00 00 3A	67	00 43 10 00 00 00 00 53	92	00 5C 10 00 00 00 00 6C
18	00 12 10 00 00 00 00 22	43	00 2B 10 00 00 00 00 3B	68	00 44 10 00 00 00 00 54	93	00 5D 10 00 00 00 00 6D
19	00 13 10 00 00 00 00 23	44	00 2C 10 00 00 00 00 3C	69	00 45 10 00 00 00 00 55	94	00 5E 10 00 00 00 00 6E
20	00 14 10 00 00 00 00 24	45	00 2D 10 00 00 00 00 3D	70	00 46 10 00 00 00 00 56	95	00 5F 10 00 00 00 00 6F
21	00 15 10 00 00 00 00 25	46	00 2E 10 00 00 00 00 3E	71	00 47 10 00 00 00 00 57	96	00 60 10 00 00 00 00 70
22	00 16 10 00 00 00 00 26	47	00 2F 10 00 00 00 00 3F	72	00 48 10 00 00 00 00 58	97	00 61 10 00 00 00 00 71
23	00 17 10 00 00 00 00 27	48	00 30 10 00 00 00 00 40	73	00 49 10 00 00 00 00 59	98	00 62 10 00 00 00 00 72
24	00 18 10 00 00 00 00 28	49	00 31 10 00 00 00 00 41	74	00 4A 10 00 00 00 00 5A	99	00 63 10 00 00 00 00 73
25	00 19 10 00 00 00 00 29	50	00 32 10 00 00 00 00 42	75	00 4B 10 00 00 00 00 5B	100	00 64 10 00 00 00 00 74

RS232 and LAN Input Codes Table

Standard (Hexa)

Direct TL Triggering codes (Priorities are taken into consideration)

TL N°	String	TL N°	String	TL N°	String	TL N°	String
101	00 65 10 00 00 00 00 75	126	00 7E 10 00 00 00 00 8E	151	00 97 10 00 00 00 00 A7	176	00 B0 10 00 00 00 00 C0
102	00 66 10 00 00 00 00 76	127	00 7F 10 00 00 00 00 8F	152	00 98 10 00 00 00 00 A8	177	00 B1 10 00 00 00 00 C1
103	00 67 10 00 00 00 00 66	128	00 80 10 00 00 00 00 90	153	00 99 10 00 00 00 00 A9	178	00 B2 10 00 00 00 00 C2
104	00 68 10 00 00 00 00 68	129	00 81 10 00 00 00 00 91	154	00 9A 10 00 00 00 00 AA	179	00 B3 10 00 00 00 00 C3
105	00 69 10 00 00 00 00 79	130	00 82 10 00 00 00 00 92	155	00 9B 10 00 00 00 00 AB	180	00 B4 10 00 00 00 00 C4
106	00 6A 10 00 00 00 00 7A	131	00 83 10 00 00 00 00 93	156	00 9C 10 00 00 00 00 AC	181	00 B5 10 00 00 00 00 C5
107	00 06 10 00 00 00 00 7B	132	00 84 10 00 00 00 00 94	157	00 9D 10 00 00 00 00 AD	182	00 B6 10 00 00 00 00 C6
108	00 6C 10 00 00 00 00 7C	133	00 85 10 00 00 00 00 95	158	00 9E 10 00 00 00 00 AE	183	00 B7 10 00 00 00 00 C7
109	00 6D 10 00 00 00 00 7D	134	00 86 10 00 00 00 00 96	159	00 9F 10 00 00 00 00 AF	184	00 B8 10 00 00 00 00 C8
110	00 6E 10 00 00 00 00 7E	135	00 87 10 00 00 00 00 97	160	00 A0 10 00 00 00 00 B0	185	00 B9 10 00 00 00 00 C9
111	00 6F 10 00 00 00 00 7F	136	00 88 10 00 00 00 00 98	161	00 A1 10 00 00 00 00 B1	186	00 BA 10 00 00 00 00 CA
112	00 70 10 00 00 00 00 80	137	00 89 10 00 00 00 00 99	162	00 A2 10 00 00 00 00 B2	187	00 BB 10 00 00 00 00 CB
113	00 71 10 00 00 00 00 81	138	00 8A 10 00 00 00 00 9A	163	00 A3 10 00 00 00 00 B3	188	00 BC 10 00 00 00 00 CC
114	00 72 10 00 00 00 00 82	139	00 8B 10 00 00 00 00 9B	164	00 A4 10 00 00 00 00 B4	189	00 BD 10 00 00 00 00 CD
115	00 73 10 00 00 00 00 83	140	00 8C 10 00 00 00 00 9C	165	00 A5 10 00 00 00 00 B5	190	00 BE 10 00 00 00 00 CE
116	00 74 10 00 00 00 00 84	141	00 8D 10 00 00 00 00 9D	166	00 A6 10 00 00 00 00 B6	191	00 BF 10 00 00 00 00 CF
117	00 75 10 00 00 00 00 85	142	00 8E 10 00 00 00 00 9E	167	00 A7 10 00 00 00 00 B7	192	00 C0 10 00 00 00 00 D0
118	00 76 10 00 00 00 00 86	143	00 8F 10 00 00 00 00 9F	168	00 A8 10 00 00 00 00 B8	193	00 C1 10 00 00 00 00 D1
119	00 77 10 00 00 00 00 87	144	00 90 10 00 00 00 00 A0	169	00 A9 10 00 00 00 00 B9	194	00 C2 10 00 00 00 00 D2
120	00 78 10 00 00 00 00 88	145	00 91 10 00 00 00 00 A1	170	00 AA 10 00 00 00 00 BA	195	00 C3 10 00 00 00 00 D3
121	00 79 10 00 00 00 00 89	146	00 92 10 00 00 00 00 A2	171	00 AB 10 00 00 00 00 BB	196	00 C4 10 00 00 00 00 D4
122	00 7A 10 00 00 00 00 8A	147	00 93 10 00 00 00 00 A3	172	00 AC 10 00 00 00 00 BC	197	00 C5 10 00 00 00 00 D5
123	00 7B 10 00 00 00 00 8B	148	00 94 10 00 00 00 00 A4	173	00 AD 10 00 00 00 00 BD	198	00 C6 10 00 00 00 00 D6
124	00 7C 10 00 00 00 00 8C	149	00 95 10 00 00 00 00 A5	174	00 AE 10 00 00 00 00 BE	199	00 C7 10 00 00 00 00 D7
125	00 7D 10 00 00 00 00 8D	150	00 96 10 00 00 00 00 A6	175	00 AF 10 00 00 00 00 BF	200	00 C8 10 00 00 00 00 D8

RS232 and LAN Input Codes Table

Simplified (ASCII)

Event Triggering codes

Code N°	String	Code N°	String	Code N°	String	Code N°	String
1	INRSEC01	26	INRSEC26	51	INRSEC51	76	INRSEC76
2	INRSEC02	27	INRSEC27	52	INRSEC52	77	INRSEC77
3	INRSEC03	28	INRSEC28	53	INRSEC53	78	INRSEC78
4	INRSEC04	29	INRSEC29	54	INRSEC54	79	INRSEC79
5	INRSEC05	30	INRSEC30	55	INRSEC55	80	INRSEC80
6	INRSEC06	31	INRSEC31	56	INRSEC56	81	INRSEC81
7	INRSEC07	32	INRSEC32	57	INRSEC57	82	INRSEC82
8	INRSEC08	33	INRSEC33	58	INRSEC58	83	INRSEC83
9	INRSEC09	34	INRSEC34	59	INRSEC59	84	INRSEC84
10	INRSEC10	35	INRSEC35	60	INRSEC60	85	INRSEC85
11	INRSEC11	36	INRSEC36	61	INRSEC61	86	INRSEC86
12	INRSEC12	37	INRSEC37	62	INRSEC62	87	INRSEC87
13	INRSEC13	38	INRSEC38	63	INRSEC63	88	INRSEC88
14	INRSEC14	39	INRSEC39	64	INRSEC64	89	INRSEC89
15	INRSEC15	40	INRSEC40	65	INRSEC65	90	INRSEC90
16	INRSEC16	41	INRSEC41	66	INRSEC66	91	INRSEC91
17	INRSEC17	42	INRSEC42	67	INRSEC67	92	INRSEC92
18	INRSEC18	43	INRSEC43	68	INRSEC68	93	INRSEC93
19	INRSEC19	44	INRSEC44	69	INRSEC69	94	INRSEC94
20	INRSEC20	45	INRSEC45	70	INRSEC70	95	INRSEC95
21	INRSEC21	46	INRSEC46	71	INRSEC71	96	INRSEC96
22	INRSEC22	47	INRSEC47	72	INRSEC72	97	INRSEC97
23	INRSEC23	48	INRSEC48	73	INRSEC73	98	INRSEC98
24	INRSEC24	49	INRSEC49	74	INRSEC74	99	INRSEC99
25	INRSEC25	50	INRSEC50	75	INRSEC75	100	NA

RS232 and LAN Input Codes Table

Standard (Hexa)

Direct TL Triggering codes (Priorities are taken into consideration)

Protocol :

Byte 1, 2, 3, 4, 5 = STATL

Bytes 6, 7 & 8 = number of the TL to start

TL N°	String	TL N°	String	TL N°	String	TL N°	String
1	STATL001	26	STATL026	51	STATL051	76	STATL076
2	STATL002	27	STATL027	52	STATL052	77	STATL077
3	STATL003	28	STATL028	53	STATL053	78	STATL078
4	STATL004	29	STATL029	54	STATL054	79	STATL079
5	STATL005	30	STATL030	55	STATL055	80	STATL080
6	STATL006	31	STATL031	56	STATL056	81	STATL081
7	STATL007	32	STATL032	57	STATL057	82	STATL082
8	STATL008	33	STATL033	58	STATL058	83	STATL083
9	STATL009	34	STATL034	59	STATL059	84	STATL084
10	STATL010	35	STATL035	60	STATL060	85	STATL085
11	STATL011	36	STATL036	61	STATL061	86	STATL086
12	STATL012	37	STATL037	62	STATL062	87	STATL087
13	STATL013	38	STATL038	63	STATL063	88	STATL088
14	STATL014	39	STATL039	64	STATL064	89	STATL089
15	STATL015	40	STATL040	65	STATL065	90	STATL090
16	STATL016	41	STATL041	66	STATL066	91	STATL091
17	STATL017	42	STATL042	67	STATL067	92	STATL092
18	STATL018	43	STATL043	68	STATL068	93	STATL093
19	STATL019	44	STATL044	69	STATL069	94	STATL094
20	STATL020	45	STATL045	70	STATL070	95	STATL095
21	STATL021	46	STATL046	71	STATL071	96	STATL096
22	STATL022	47	STATL047	72	STATL072	97	STATL097
23	STATL023	48	STATL048	73	STATL073	98	STATL098
24	STATL024	49	STATL09	74	STATL074	99	STATL099
25	STATL025	50	STATL050	75	STATL075	100	STATL100

RS232 and LAN Input Codes Table

Simplified (ASCII)

Direct TL Triggering codes (Priorities are taken into consideration)

TL N°	String	TL N°	String	TL N°	String	TL N°	String
101	STATL101	126	STATL126	151	STATL151	176	STATL176
102	STATL102	127	STATL127	152	STATL152	177	STATL177
103	STATL103	128	STATL128	153	STATL153	178	STATL178
104	STATL104	129	STATL129	154	STATL154	179	STATL179
105	STATL105	130	STATL130	155	STATL155	180	STATL180
106	STATL106	131	STATL131	156	STATL156	181	STATL181
107	STATL107	132	STATL132	157	STATL157	182	STATL182
108	STATL108	133	STATL133	158	STATL158	183	STATL183
109	STATL109	134	STATL134	159	STATL159	184	STATL184
110	STATL110	135	STATL135	160	STATL160	185	STATL185
111	STATL111	136	STATL136	161	STATL161	186	STATL186
112	STATL112	137	STATL137	162	STATL162	187	STATL187
113	STATL113	138	STATL138	163	STATL163	188	STATL188
114	STATL114	139	STATL139	164	STATL164	189	STATL189
115	STATL115	140	STATL140	165	STATL165	190	STATL190
116	STATL116	141	STATL141	166	STATL166	191	STATL191
117	STATL117	142	STATL142	167	STATL167	192	STATL192
118	STATL118	143	STATL143	168	STATL168	193	STATL193
119	STATL119	144	STATL144	169	STATL169	194	STATL194
120	STATL120	145	STATL145	170	STATL170	195	STATL195
121	STATL121	146	STATL146	171	STATL171	196	STATL196
122	STATL122	147	STATL147	172	STATL172	197	STATL197
123	STATL123	148	STATL148	173	STATL173	198	STATL198
124	STATL124	149	STATL149	174	STATL174	199	STATL199
125	STATL125	150	STATL150	175	STATL175	200	STATL200