ASTP for Windows

ASTP allows to retrieve data from CIMEL Electronique instruments with a traditional serial port or a MODEM. If you experience troubles using ASTPWin, check the minimal required configuration or send us a bug report.

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5-7 Cité de Phalsbourg
75011 PARIS
Tel: (+33) 1 43 48 79 33
Fax: (+33) 1 43 48 62 61

E-Mail: cimel@cimel.fr
Web site: www.cimel.fr

BUG Report

If you encounter a software anomaly, send us :

- The **version** of the software (Menu Help->About)
- The menu **name** or module name which cause the fault
- **Description** : (problem, how to produce the bug, operating system, PC description…)
- If applicable, the **file** which causes the fault
- If it's a software problem, the **presumed cause**

Report all to defossez@cimel.fr or fax-it to CIMEL.

Feel free to write us if you want to improve ASTPWin.

Software code and documentation written by Jean-Baptiste DEFOSSEZ
Last changes on 16th June 1999

Minimal required configuration

Operating System	Windows 95 or higher, Windows NT 4 Service Pack 3 or higher
Processor	All (A more powerful processor will speed up loading and merging operations of large files)
Memory	16 Mb (Performances are better with more memory)
Graphical resolution	640*480 16 colors (A lot of screen are best viewed with 65536 colors or better)
Communication port	One free COM port

Warning : Version problem with Comctl32.dll file

This problem concern the first version of Windows 95, it doesn't occur on Windows version superior or equal to OSR B version of Windows 95 (Windows 98 and Windows NT aren't affected). To launch ASTPWin, you must have on your system the 4.70 version for the Windows DLL COMCTL32.DLL. Actually with the first version of Windows 95, released in October 95, there's a bug which can hang up the computer. To install the correct version of this file, you must download the Comctl32.exe file, available for free on the Microsoft web site and decompress it. Then, restart the computer in DOS mode and replace the file with the same name (COMCTL32.DLL) which is on the system directory of Windows (C:\WINDOWS\SYSTEM in most cases). Note that ASTPWin won't run if the version of this file isn't correct.

Example : PC Transfert for Sunphotometer CE-318

The data recorded in the memory can be transferred to a PC.

1. Plug the control unit to the PC with the PC-DCP cable. Plug the cable on the RS-232 DCP on the control unit to a COM1 to COM4 on the back of the PC.

2. Run ASTP Win. In the general setup (Setup or Tool->General setup menu), setup the Communication. Select “Serial link”, indicate the COM port you will use and select 1200 bauds for transfer speed.

3. Connect the COM port (Connect or Tool->Connect/Disconnect menu). Choose the "PC" scenario on the command unit and press GO [W] to start the data transfer.

4. At the end, save the K7 file (Save or File->Save menu). This process generates a .K7 file, which contains the true content of the buffer. It’s a binary file.

For special data processing, you can create the text files (ASCII or Measurement->Save ASCII files menu)

Communication setup

Shortcut :

Menu : Tools ->General setup, communication tabsheet.

See Also : How to setup the communication

Communication type

Choose the communication type. For a local link with the serial port, choose **Serial link**, for a MODEM link, choose **MODEM**. If you selected MODEM, you can setup the MODEM **Initialization string** and the **number of ring before picking up**.

Automatic connection at the start

This option allows to connect the communication port as soon as ASTP is launched. This option could be very useful if a power failure occurs and if you want to launch automatically ASTP in reception mode at the next computer start up.

Port number

It indicates the communication com port name used for the acquisition (from COM1 to COM4).

Speed (bauds)

It indicate the transmission speed used for the acquisition. In local, this option is generally set to 1200 Bauds, with a MODEM, the transmission speed is normally 9600 Bauds.

Stop the connection after two empty events

It’s possible to optimize the reception with that option. The PC will stop the acquisition when it detects two consecutive empty events (Type 0xFF). When two empty events occur, the rest of the memory don’t contains any data.

How to setup the communication ?

ASTPWin need to know the link type between the PC and the instrument, the communication port (from COM1 to COM4) and the transmission speed (1200 or 9600 bauds). To specify your configuration, select the menu " Tools->General Setup " in the principal menu and click on the "Communication" sheet.

Link kind choice

For a local link with a serial port, choose Serial link, for a MODEM link, choose MODEM. By selecting MODEM, you will have to setup the MODEM initialization string, and the number of ring before the MODEM pick up to answer the call.

Communication port choice

You must indicate the communication port number used for the acquisition (from COM1 to COM4).

Transmission speed

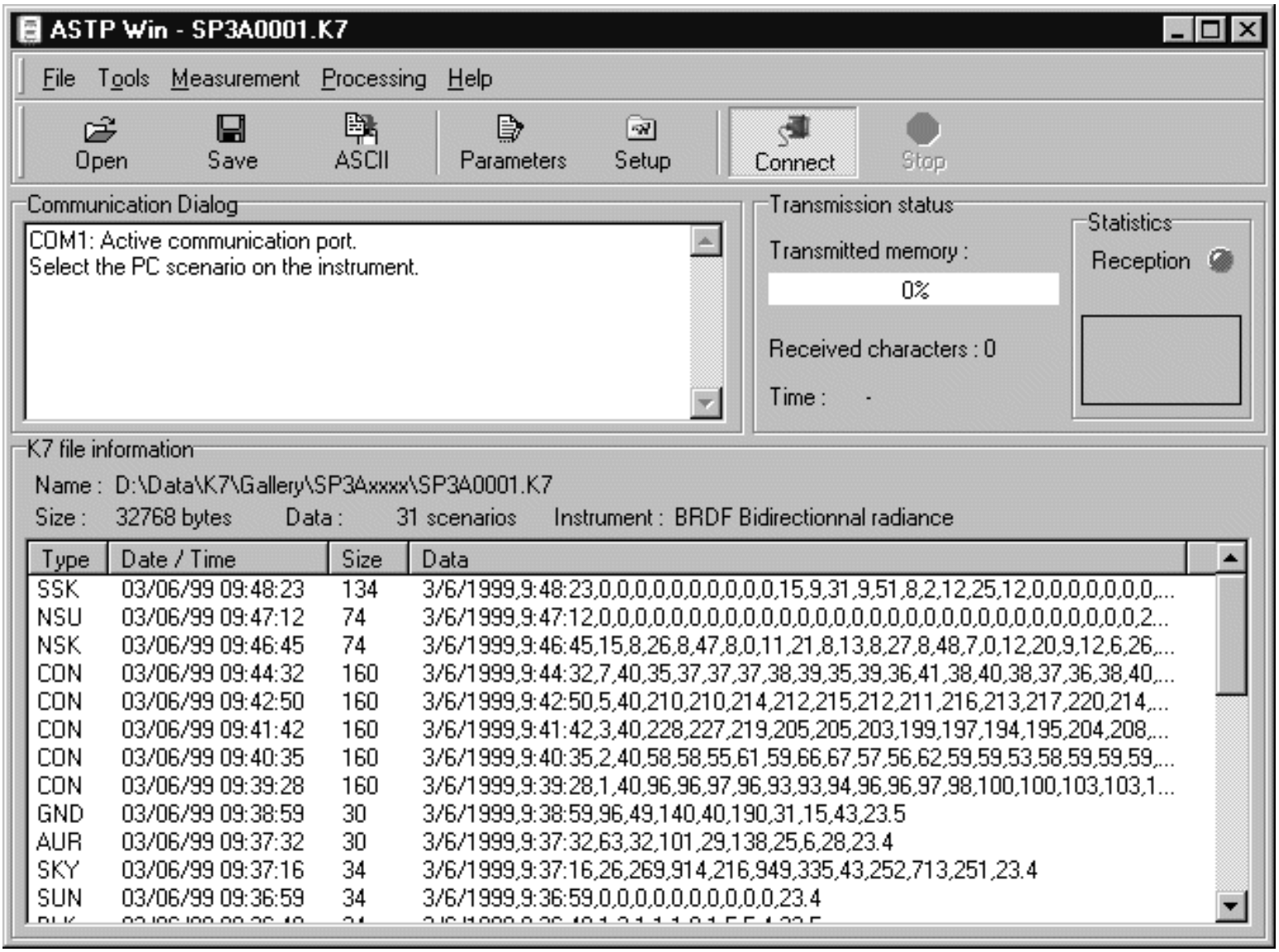
The speed (in bauds) is the speed used for the transmission. That option is generally 1200 Bauds. At this time, only few instruments (BRDF) can handle 9600 Bauds speed rate. Standard instruments are running at 1200 bauds.

Communication setup examples

Instrument description	*Link kind*	*Com port*	*Speed*
Polarized sunphotometer on COM1	Serial link	COM1	1200
Radiometer connected to the PC on COM2	Serial link	COM2	1200
BRDF with a GSM transmitting data to an internal MODEM installed on COM3	MODEM	COM3	9600
BRDF directly connected to the PC on COM2	Serial link	COM2	9600

Main screen

The screen is composed of different parts. Here's a screen example, click on the area where you want more information:



Main menu

File menu

- Open a K7 file
- Save the K7 file
- Convert K7 files in ASCII files
- Merge several K7 files
- Quit

Tools menu

- Connect or disconnect communication port
- Show the transmission history
- Watch and edit parameters
- Modify the general configuration

Measurement menu

- Delete measurements
- Create & save the ASCII files
- Get more information about a scenario

Processing menu

- Typically, the ASTPWin plug-ins are installed in that menu

Help menu

- Read this help file
- Get information about the software version

Shortcuts icons

The shortcuts icons accelerate the access to a particular function. To learn the meaning of the icons pictures, see " Icons shortcut meaning ". To know the signification of each image, let the mouse cursor a few seconds over it.

Information about the communication

It's a text zone giving information about received scenarios. It describes also the transmission errors. This part is only visible if the communication port has been opened.

Transmission status

This little control screen show the transmission progression :

Transmitted memory is an estimation of the memory transmitted by the instrument.

Received characters count the amount of characters received by the communication port.

Time give the time elapsed from the beginning of the transmission.

The **Statistics** part allows each second to follow the transmission state. The reception LED is on when data are received, under that led the program compute the transmission speed from it's start and the graphic show the number of received characters for the last thirty seconds. This part is only visible if the communication port has been opened.

K7 file information

It's an information panel used to show some general information : The complete file **name**, it's size **size** and the number of scenarios (**Data**) and the name of the CIMEL **instrument**. At the bottom of the panel is a list of the scenarios contained in the K7 file. That list is composed by these columns :

- **Type** Scenario type (short name or extension)
- **Date / Time** Time when the scenario starts
- **Size** Size of the event in bytes
- **Data** Show the digital counts.

You can sort that list by your criterion by clicking on the title of the column. Double click on a measurement to see the details. Note that when a transmission occurs, you're not allowed to modify that list.

If the scenario isn't recognized by the software, the type is **? ? ?**. Please contact CIMEL Electronique to add the

new scenario in the program.

K7 to ASCII files conversion

Menu : File -> Convert in ASCII

You can create ASCII files with a list of K7 files. You can organize the files in periods.

K7 files to convert

Give the list of the files used for the conversion. You can **Add** or **Remove** files in that list.

Output directory

Name of the directory where will be stored the ASCII files.

Files period

The text files data could be organized in different ways :

- **None**

  Files are created with the same name of the K7 file (MMDDhhmm.EXT).
- **Hourly**

  Data are grouped hour by hour. The files are named hhDDMMYYYY.EXT.
- **Daily**

  Data are grouped day by day. The files are named DDMMYYYY.EXT.
- **Monthly**

  Data are grouped month by month. The files are named MMYYYY.EXT.
- **Yearly**

  Data are grouped year by year. The files are named YYYY.EXT.
- **Infinite**

  The data are grouped in the same file. The filename is **nom de base**.

Warning : Bigger is the period, longer is the computation time when adding data.

ASCII files base name

The base name is an optional prefix that ASTP adds before the text file name. E.g. if the base name is "PARIS_" and you choose a Monthly period, for the month of June 99, the filename will be PARIS_0698.EXT (EXT is the extension of the ASCII file)

Conversion progress

Used to see the progression of the files conversion.

Merge K7 files

Menu : File->Merge K7 files

With this dialogue box you can merge several K7 files. This action is very useful if you want to gather some days together to compute it in one operation. It's also possible to create a K7 file that contains scenarios of several K7 files. Double and scenarios with errors are eliminated.

K7 source file directory

Indicate where are stored the K7 files used for the fusion. All the files in that directory will be merged in one big K7 file.

Fusion type

You can add all the scenarios (**Complete** fusion) or you can eliminate the scenarios which aren't between the two dates (**Between two dates** fusion).

Fusion progress

To see the progression of the K7 files merging.

Transmissions history

Menu : Tools >Transmission history.

ASTPWin can display statistics about the transmission done during the current session. These statistics are useful for example, if the user isn't physically present during automated transmission. This dialog is the list of the transmissions done during the current session.

Number of transmissions

Amount of communication from the start of ASTPWin.

Columns description

- **Date time column**

  Date and time when the transmission started.

- **Duration column**

  Duration of the transmission (in hours, minutes and seconds).

- **Errors column**

  Number of errors during each transmission. It’s an indication of the transmission quality.

- **End Trans. column**

  Show how the transmission ended:
  - OK: It normally ends.
  - Canceled: The transmission was canceled by the user.
  - Timeout: There was no data during about 10 seconds. No program has ended the connection.
  - Bad trans: The connection was so bad that the program terminate the transmission.

- **Scenarios column**

  Amount of scenarios (a line of measurements) transmitted.

- **Bytes column**

  Amount of bytes transmitted during the communication.

- **Speed column**

Compute a transmission speed (in characters / sec.).

- **Max speed column**

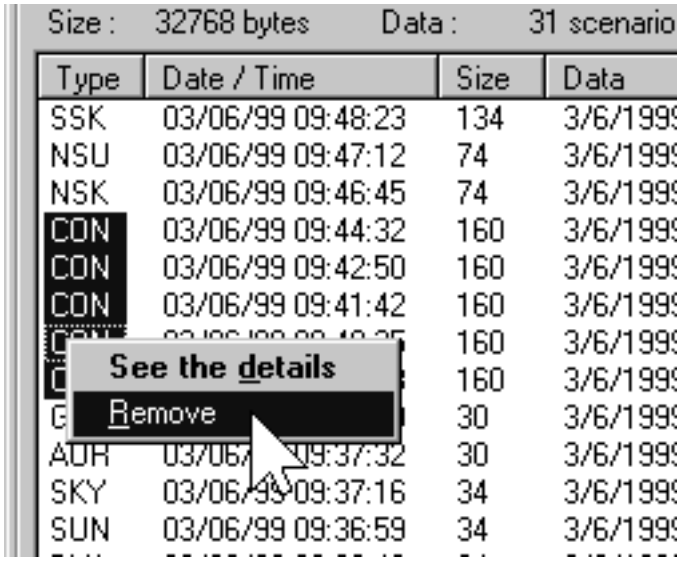
  Indicate the maximum speed (in characters / sec.) over five sliding seconds.

Save

Prompt the user to save the list in a ASCII file (text file).

How to suppress bad measurements inside a K7 file ?

It's possible to suppress bad or uninteresting scenarios.



Select scenarios to remove , click on the right mouse button and select " Remove ". It's also possible to suppress the events with the main menu " Measurement->Delete measurements ".

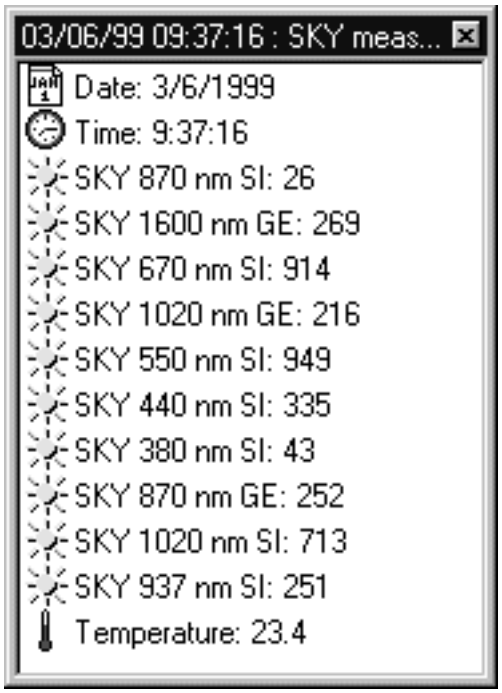
The selected scenarios are definitely removed from the K7 file.

Measurement details

Menu : Measurement -> Measurement details

It's possible to get more details about a particular measurement. You can double click on the scenario you want to watch to open this dialog box.

A grid appears with the list of the values composing the measurement.



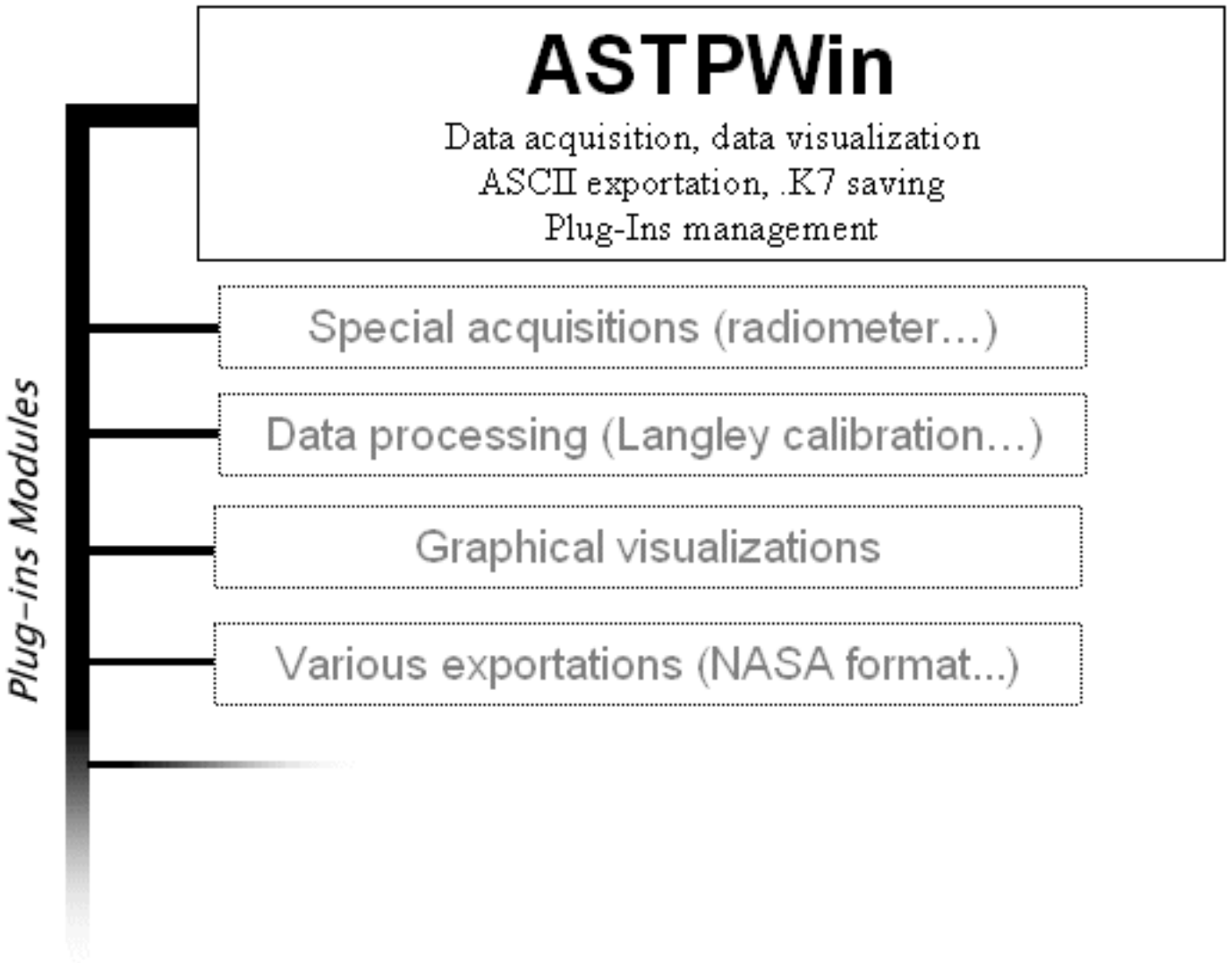
Each symbol correspond to a data type family :

- Date of the measurement
- Time of the measurement
- Filter number
- Temperature
- System data
- Battery voltage
- Angle
- Physical data (Digital Count)

Data processing and Plug-Ins

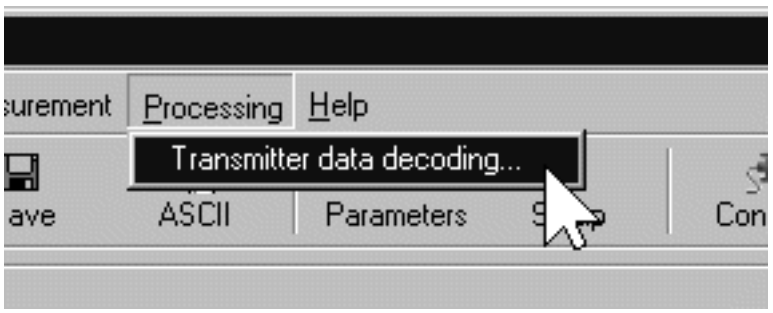
ASTPWin software organization

ASTPWin is an open software which support particular treatments adding :



How the Plug-Ins system work ?

Physically, a plug-in is a .DLL file with optionally some others data files. When it's placed in the plug-in directory, it's automatically added in the ASTPWin interface (typically in the " Processing " menu) when the application starts :



In that example, "Transmitter data decoding" is physically DCPFiles.DLL

Plug-Ins directory

You must indicate in what directory the plug-ins (DLL files) are stored. To modify that directory, enter the Miscellaneous options setup : select the menu " Tools->General setup " click on the " misc. " tab and give the full path of the directory in the field " Plug-ins directory ".

If that directory contains valid .DLL files for ASTPWin, the new processing will be added ASTPWin at its next start (you must restart ASTPWin for changes to take effect).

Miscellaneous setup

Shortcut :

Menu : Tools->General setup, Misc. sheet.

Display empty scenarios (.INI)

That option allows to force the empty scenarios display in the scenarios list.

Display scenarios with errors

That option allows to force the display of scenarios with errors (Transmission errors, bad integrity test, unknown scenario or impossible to decode…)

Confirm before overwriting files

By deactivating this option, you remove the confirmation message when the program want to overwrite an existing file on the disk. You have to deactivate this option when the program is use in automatic mode (without a user to reply to that question).

Write transmissions report

This option create a file containing a little communications report. Each transmission adds a line to that file. The filename is Transmission.Log, it's stored in the ASTP home directory. That file is never deleted, data are always added to the end of that file. The user should delete periodically this file.

Configuration directory

Indicate the directory where are stored the instrument description files (SP??????.PAR files).

Plug-ins directory

The DLL executable files for ASTPWin are stored in this directory. The correct Plug-ins DLL are automatically recognized by the software and the process are added to the "Processing" menu. See also "Data processing and Plug-Ins".

Icons shortcut signification

Open a K7 file.

Save the data in a K7 file.

Connect / Disconnect the communication port. The program is ready to receive a communication only if that button is down (See also how to launch the acquisition ?)

Create the ASCII files. The ASCII filenames have the same base name of the current K7 file.

Launch the general configuration dialog

Stops the current communication (that icon is available only during a transmission)

Edit the current K7 parameters

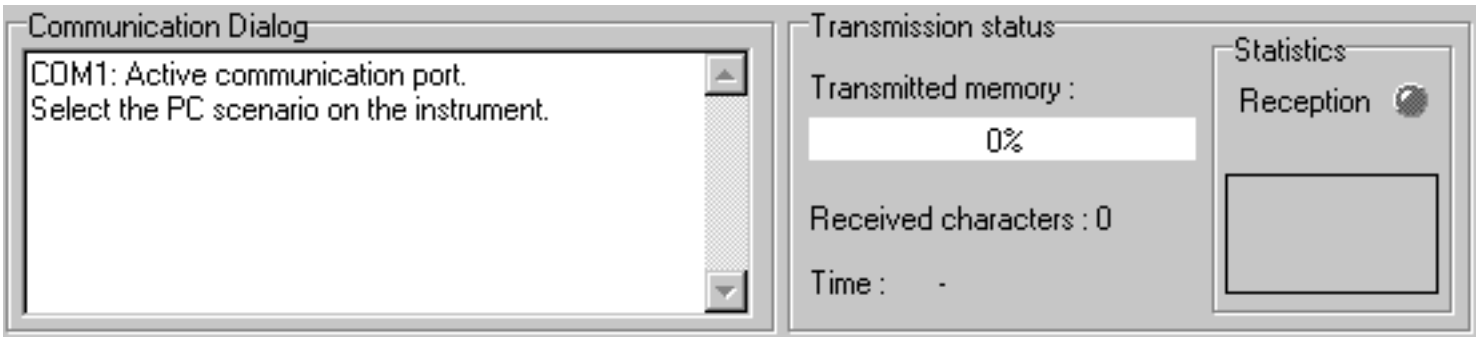
How to launch the acquisition ?

Connect the communication port

To activate the link with the serial port, select the item " Tools->Connect / Disconnect " in the main menu or click on the following shortcut icon :

Link connection ON / OFF

The acquisition progression visualization should appear :



The software is now waiting for an instrument transmission.

If the dialog don't appear, the communication port can't be opened :

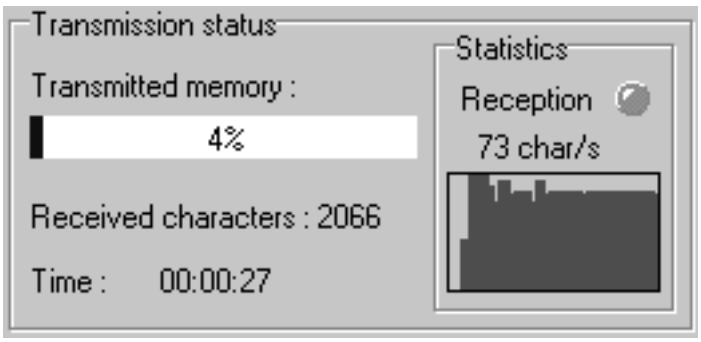
- Verify the communication port number.
- Verify if the communication port isn't already used by Windows or by another application.
- Some portable computer doesn't have COM1 communication port. Choose another communication port

Acquisition start

The acquisition start when the instrument begin to send data :

- Connect the instrument to the chosen communication port
- Select the PC scenario on the instrument (see the instrument documentation for much details, by default : MAN / SEL / PC / GO).

The data reception LED becomes green as soon as data from the instrument is coming :



This panel gives some information about the status of the current acquisition. The transmitted memory is the percentage of memory uploaded in the PC. The number of characters received, the amount of time from the transmission starts and the average acquisition speed in characters per second are given

for information. The graphic shows the last 30 seconds of transmission, it allows to report the stability and the cuttings during the data transmission.

Acquisition end

The acquisition stops automatically, but can be terminated by a user intervention :

Stop transmission

The data transfer end if one of these conditions is done :

- The instrument memory is fully transmitted (Detection : the last received scenario was already received at the start of the transmission)
- Two consecutive empty events were received and the related stop option was activated.
- The connection between the PC and the instrument was broken (no data received during several seconds)
- The connection between the PC and the instrument is too bad (less than two characters per seconds transmitted during the 30 last seconds)
- The transfer was interrupted by the user

Then, the scenarios list is refreshed.

Parameters edition

Shortcut :

Menu : Tools->Parameters edition

The K7 file contains the data and the instrument parameters.

If the parameters configuration file is available, the program show us the list of the K7 file parameters. It's also possible to modify these parameters by double clicking on it.

Save parameters

Save the parameters in a normal text file.

Print parameters

Print the list of the parameters.

Parameter column

Name of the parameter.

Value column

Value of that parameter.

Description column

Give a description of that parameter.

K7 files management

What's a .K7 file ?

A .K7 file is originally an image of the inquired instrument memory. It's size is 32kb, exactly the size of the classical CIMEL Electronique instrument memory. The new extensions allow to overtake that size and the .K7 files produced by ASTPWin can do more than 32kb.

Importance of K7 files in relation to ASCII files

A K7 file can produce ASCII files, but the inverse isn't true. It's very important to keep the K7 file rather than the ASCII files. The K7 file contains :

- Instrument parameters (at the acquisition time)
- The scenarios that are correctly decoded
- The bad or partially transmitted scenarios (except for merged files)

If a scenario isn't well decoded (due to a software problem for example), it's possible to correct the bug from the K7 file. If the use remove the K7 file, it's impossible to go back. Besides ASTPWin plug-ins are exclusively using K7 file format.

ASTP for DOS compatibility

The compatibility between ASTPWin and ASTP for DOS is total and in both directions :

- ASTP for DOS can use ASTPWin files.
- ASTPWin can use ASTP for DOS files.

There's a limitation with files larger than 32kb that aren't supported by ASTP for DOS (it occurs for merged K7 files for example).

ASCII file format setup

Shortcut :

Menu : Tools -> General setup, ASCII Format sheet.

Display years on four digits

The dates could be displayed with four or two digits (E.G. 2001 or 01), check this option to display completely the dates, on four digits.

Dates and times between quotes

It’s possible to add quotes (") around the dates and the times. This option could be useful with some other software to recognize automatically the dates.

Dates and times with not significant zeros

That option allows the display the dates in a fixed length format. To take an example, the 1st January 1998 is displayed 01/01/98 instead of 1/1/98.

Add a description header before each ASCII file

It's possible to add a description header describing each column at the beginning of the ASCII files. Select the checkbox to add it, here is an example of a file with this kind of header :

Date,Time,1020nm,870P1,670nm,440nm,870P2,870nm,936nm,870P3,Temperature
06/03/1999,13:33:40,56,65,29,1,0,70,2,3,28.7
06/03/1999,13:33:29,57,66,30,1,0,71,2,3,28.7
…

Always display data with numbers

Some information and error codes can be displayed explicitly, for example an absent temperature will be displayed "Abs.". ASCII exportation will also export "Abs." and may crash some programs that are waiting for a numerical value. That option force the software to use numerical value : "6513.1" for the absent temperature to take the same example.

Separators

It’s possible to modify the character of each separator : Select the separator to modify in the list and assign a character to it.

Selection test

This test line allows to show quickly the effects of the changes done on this page.

Data configuration

Shortcut :

Menu : Tools-> General setup, Data sheet.

It's possible to create automatically after every transfer :

- The .K7 file of the acquisition
- ASCII files organized by period

Activate automatic K7 recording

That option activate the automatic K7 files saving. The files are stored in the directory you indicate. The name of the file is automatically created with the PC date at the instant of the end of the reception. The filename is MMDDhhmm.K7 (MM = Acquisition month, DD = Acquisition day, hh = Acquisition time and mm = Acquisition minute). Activate this option allows to setup the ASCII data files creation.

In directory

Directory where should be stored the K7 files when automatic K7 recording is active.

Create ASCII files

That option confirm the text files creation.

Files period

The text files data could be organized in different ways :

- **None**

  Files are created with the same name of the K7 file (MMDDhhmm.EXT).
- **Hourly**

  Data are grouped hour by hour. The files are named hhDDMMYYYY.EXT.
- **Daily**

  Data are grouped day by day. The files are named DDMMYYYY.EXT.
- **Monthly**

  Data are grouped month by month. The files are named MMYYYY.EXT.
- **Yearly**

Data are grouped year by year. The files are named YYYY.EXT.

- **Infinite**

  The data are grouped in the same file. The filename is **base name**.

Warning : Bigger is the period, longer is the computation time when adding data.

Base name

The base name is an optional prefix that ASTP adds before the text file name. E.g. if the base name is "PARIS_" and you choose a Monthly period, for the month of June 99, the filename will be PARIS_0698.EXT (EXT is the extension of the ASCII file)

Optimize transmissions

That option allows to stop the transmission when the soft detect a scenario already transmitted in one of the previous transmissions.