Programmable Digital system for MAF60 serie II satellites

OXYDIUM

User's manual

October 2026 – Firmware 3.8.0 - English -

- **Manual firing**
- **Automatic programmable firing**
- **DMX mode**
- **Firing with PC**

This manual is only valid for products corresponding to the version described in this manual. Before use, carefully read these instructions and you'll be fully satisfied with your new hardware. Always follow the safety instructions. FAQ on www.genetec.fr

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Oxydium console

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The programmable console Oxydium 600 lines has been developed to be able to very effectively control satellites MAF60 serie II, with additional characteristics as compared to the basic remote control system of the MAF60 serie II.

It has four main operating modes:

- Manual firing
- Semi-automatic and full automatic firing (with Oxydium Suite software)
- Firing with DMX assistance (3 modes)
- Firing with a standard PC, or with a Pyromusical Controller, with the Oxydium Pyromusical Creator software

This manual has been divided into two distinct parts:

- The Oxydium console itself (pages 2-21 of the first part)
- The programming software Oxydium suite (pages 1-16 of the 2nd part)

The general operation of satellites MAF60 serie II is not presented in this document. Refer to the manual of the MAF60 serie II.

The Oxydium kit consists of an Oxydium console, one satellite MAF60 serie II, one battery charger, a USB cable and the Oxydium Suite software.

Important: In the context of a purchasing Oxydium kit, the MAF60 satellite (s) provided has been updated to be fully compatible with its Oxydium console. However, if you must use the Oxydium console with a satellite Oxydium MAF60 serie II bought previously, it is necessary to realize the update of the old satellite. All updates are on the cdrom provided with the Oxydium or by visiting our website www.genetec.fr under "Updates". Always make sure that all devices in the configuration have the latest update and also download the latest versions of manuals.

GENERAL PRESENTATION

DMX connectors

3 Modems outputs to the MAF60 satellites serie II (and HF transmitter)

Battery charger connector

USB connector with dust cap

General On/Off

Soft keys F1 to F8 functions

LCD screen with backlit

Left firing push button

Way selector & additional functions

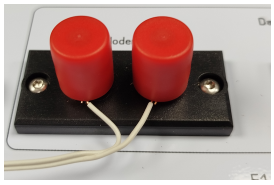
Right firing push button

The Oxydium is integrated in a suitcase IP65 (when closed), like satellites MAF60 serie II.

INSTALLATION :

CONNECTION TO THE SATELLITE(S) :

To transmit the information, the Oxydium must be connected to the MAF60 serie II satellite by a simply two-wire cable. For that, Oxydium has three terminals "Data outputs" 1, 2 and 3. These modem outputs are not polarized.



It's indifferently on one of those three terminals that must be connected Oxydium to the satellite(s). Each of these modems has its own electronic, but the orders from those three terminals are the same. The wired connection to the satellite(s) up to 5km.

- If there are several satellites, preferably use the other two unused modem outputs rather than unnecessarily load a single modem.
- If you have to connect more than 3 satellites MAF60 serie II, opt for the satellite (s) extra (s) parallel connection in cascade from the original three satellites.
- If you use both an OxyRadio HF module and wired satellites from the Oxydium, you must dedicate its own modem output to the OxyRadio (without wired satellite on the same modem) and connect the wired satellites to the other two remaining modems.

Do not do short circuit between these terminals, or do not connect a power source. The wires must be connected when the device is turned off. If several wires must be installed in the same terminal, make a splice between them.

Note: The quantity of satellites controlled by each output is not unlimited, this mainly due to the "dilution" of the signal: 5 satellites on each output is a maximum and it is necessary to check good reception of the beacon orders. So that's theoretically a maximum of 15 satellites wired for one Oxydium.

BEACON OF COMMUNICATION CHECK :

On the home screen (date and time displayed), Oxydium sends automatically each 3 seconds a beacon order to visualize if communication between Oxydium and the satellite(s) is operational.

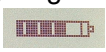
The satellite is equipped with a beacon control led that should be lit one second every 3 seconds (so light on for 1 second, off for 2 seconds, etc.).

Thus, control of the wired link between these two elements is greatly facilitated. If this is not the case (no received beacon or irregularly) communication is bad and the wires must be checked.

Note: when firing mode is enabled (or when checking mode of satellite from Oxydium console is enabled see page 16) the beacon function is automatically cut off.

ELECTRIC POWER SUPPLY :

The electric supply is provided by a 12V lead battery giving it a autonomy of about 15 hours.

The battery level is displayed on LCD screen by : 

Gradually, as the battery discharges, the black area of level indicator decrease.

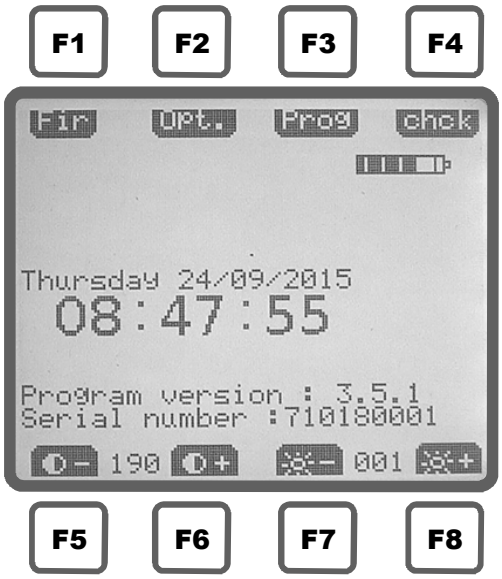
In order to preserve the autonomy of the Oxydium, after 30 minutes of inactivity the backlight automatically turns off (it's restaured on as soon as a manual or automatic feature is requested). After 120 minutes of inactivity firing mode (ex : in case of an omission to switch off after a show), and unless automatic firings of a running program are yet to come, the Oxydium automatically returns to normal mode. When the battery voltage falls below a level too low, the battery level indicator flashes and displays "LOW", and then after a lower level again the backlight turns off. Finally below a critical level no longer allow the operation of the device, the display indicates that the unit should be recharged (as long as it remains a little energy to supply).

Recharge of battery :

Oxydium must be shut off. Open the protection cap from XLR connector « Battery charger » (right side) and plug the female XLR of the provided charger. The charging time can range from a few tens of minutes to several hours depending on the initial discharge. As soon as the charger is plugged in, the LED on the charger lights up continuously. This LED gradually extinguished at the end of charging. Disconnect XLR, always replace the protective cap.

In order that your battery last longer: The battery should never be deeply discharged. When not in use, recharge every 2 months. Average life span of the battery: 4-5 years.

From the home screen:



LANGUAGE SETTING

Press F2 (Opt), select « Choix de la langue / Choose language » with F5(-) or F6(+) or the rotary switch, set the language (French or English), press F3 (OK), then press F4 (Exit)

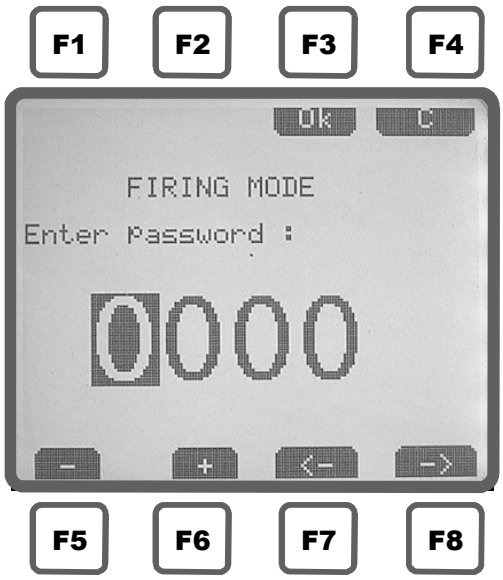
SCREEN SETTING

contrast:
Less contrast with F5
More contrast with F6
(Recommended nominal setting: 180/185 approximately, depending of the ambient temperature).
Note : The contrast can also be set with the rotary aluminum knob (on the home screen only).

brightness:
Less brightness with F7
More brightness with F8
(the level of the brightness adjustment influences the general consumption of the device)

SETTING TIME AND DATE

Press F2 (Opt), select « Time setting » with F5(-) and F6(+) then press F3(Ok), then with F7 key (<) and F8 (>) select the field to settle. With the F5 (-) and F6 (+), or the rotary switch, adjust the setting of the selected area. After finishing settings, press F3 (OK) to exit the setting screen.



ACTIVATION OF FIRING MODE

Security code to activate the firing mode :
Press F1 (FIR) and press F3 (OK), enter the 4 digits code* unlock using the F5 key (-) and F6 (+), or the rotary switch, to enter the number, and F7 (<) and F8 (>) to select the digit. After setting the code press F3 (OK). The two fire buttons light up and are now active. Firing mode is now enabled.

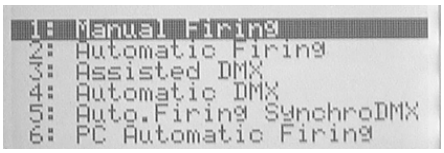
A message inform you if the code is wrong, then you can try again by pressing F3 (OK).

Oxydium is delivered with the code 0000, we recommend you to change it (see page 2, part notice « Oxydium suite»). An Oxydium firmware update may resets this code to 0000.

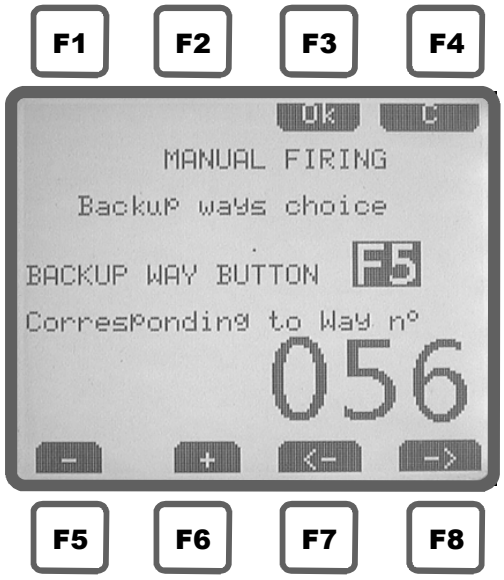
** The number of trials of this code is not limited.*

MANUAL FIRING

Selection of Manual Firing Mode :
When the firing mode is enabled, select on the screen with F5 (-) and F6 (+) or the rotary swtich : « Manual Firing ».
Valid with F3 (OK).



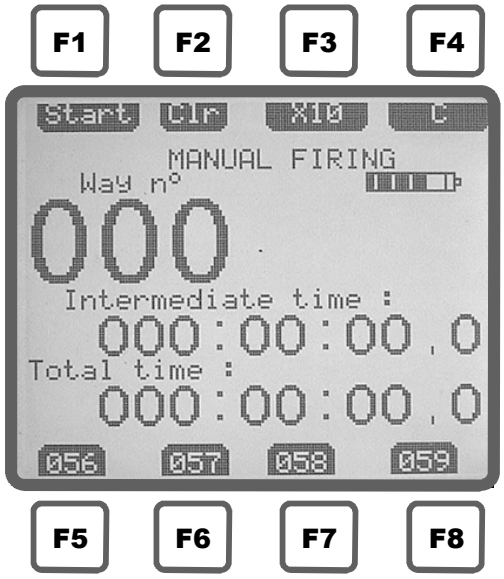
Allocation of backup Ways :
On this next screen you have to assign to the F5 to F8 keys four backup Ways of your choice. These four backup Ways can thus be shoot quickly when needed.
Go to the displayed field "Fx" using the F7 key (<) and F8 (>). With the F5 (-) and F6 (+) or the rotary swtich, display "F5". Then, always with F7 (<) and F8 (>) to go to the displayed field of backup Way and adjust with F5 (-) and F6 (+) one digit after the other the desired way. Backup Way of F5 button is setted.
Then repeat the operation for the other 3 backup Ways (F6, F7, F8).
Confirm with F3 (OK).



Important notes : If there is no need of backup Way, always affect nonexistent Ways on satellites (ex. : 596, 597, 598 and 599) because for firing on manual mode the backup ways are skipped (and it is not possible to select them other than with the keys F5 to F8). The adjusted backup ways stay in memory of Oxydium console one time over the other, so check their assignments at each new show and change them if necessary.
It is possible to assign several keys F with the same backup Way.

Once you have setted backup Ways, appears the firing screen in manual mode, and the two firing pushbuttons light up and become active.

On this screen we find:
F1 (Start & Pause): manual start of chronometers
F2 (Clr): reset of chronometers
F3 (X10): When this button is pressed, the rotary switch allows quick skip (10 by 10) of the Ways.
F4 (C): To exit of the manual firing
F5 to F8: direct access to backup ways (here 56 to 59)



The firing Way in standby to shoot is given by:

Intermediate chronometer shows time between each firing. It resets automatically after each shot.

Chronometer showing the total time since the first firing, or from the activation of the manual timekeeping.

The time is displayed in : Minutes : Seconds, 1/10 of sec. *(maxi : 999mn and 59.9sec)*

FIRING :

Simultaneously press and realease immediately the two fire buttons to ignite the displayed Way .
From that moment, the system automatically increments to the next way on standby for firing. So on until the end of the show.

It is possible with the rotary swtich to select a desired Way other than the one displayed by the auto increment (ex. : allows to skip a way or to go back).

With the F3 (X10) it is very easy and quick access to ways chronologically far (ex. : present on a satellite set to an other sixty). Indeed, when this key is pressed, each notch of rotary switch permits movement 10 by 10 Ways.

In manual mode the minimum time between shots is 0.5 second.

Firing a backup Way :
Press and hold pushed first the yellow key F5 through F8 corresponding to the desired backup Way, then after press one of the two fire buttons. Release the two buttons once the backup way has been fired.
To easily know the state of backup Way, whether they were fired or not, their displays on the screen change : a not yet activated backup Way is displayed in clear text on black cell, and when she activated it is displayed in black text on clear cell (display memory of the backup Way from automatically resets when stopping and re-ignition of the main switch Oxydium 0/1).

Note: It is possible to fire several times the same backup Way.
The firing of a backup way does not do start the stopwatches if it is activated first in the show (only the normal ways trigger the starting of the stopwatches).

AUTOMATIC FIRING

Oxydium is able to fire automatically on a show program established in advance. There are two methods to create a show program :

- Either directly from the Oxydium console itself.
- Or on PC with software "Oxydium suite" supplied with the unit (see part 2 of the notice). *It is noteworthy that creating a show program with the PC is preferred as more convenient, and offers more features.*

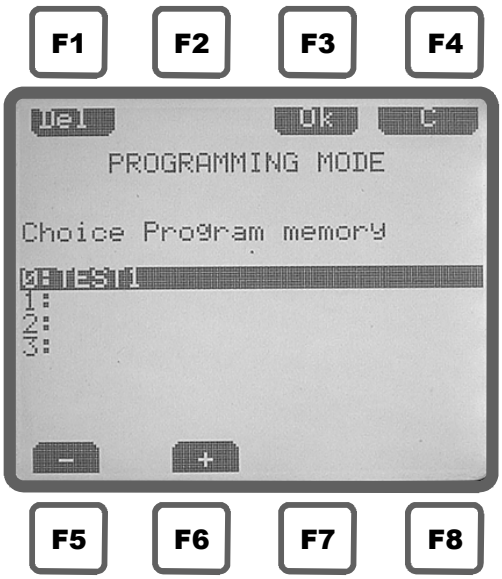
The internal memory of the device can store up to four different programs.

CREATION OF A SHOW PROGRAM WITH THE CONSOLE

From the home screen press F3 (Prog) to access to the "Programming Mode" screen.

On the "Programming Mode" screen with F5 (-) and F6 (+), or the rotary switch, select the program number to be created (from 0-3). Press F3 (OK).
Name the program to be created, use the F5 key (-) and F6 (+) or the rotary switch to scroll through the characters and the F7 keys (<) and F8 (>) to move to the next character. For example here "TEST1".

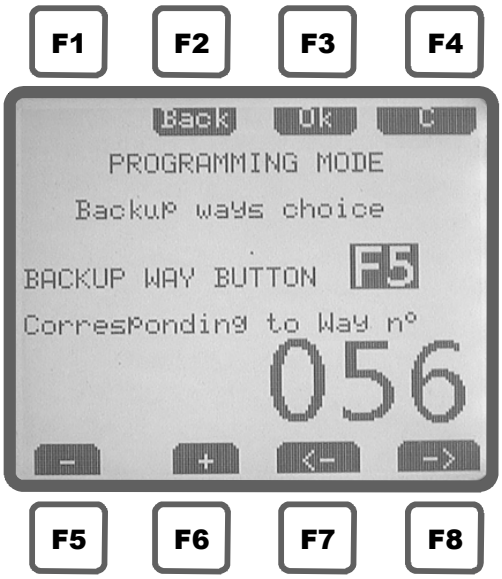
Once the name setted, press F3 (OK) to confirm.



Allocation of backup Ways :

On the next screen you have to assign to the F5 to F8 keys four backup Ways of your choice. These four backup Ways can thus be fired quickly when needed.
Go to displayed field "Fx" using the F7 key (<) and F8 (>). With the F5 (-) and F6 (+) or the rotative switch, display F5. Then, alWays with F7 (<) and F8 (>) to go to the backup Way display field, adjust with F5 (-) and F6 (+) one digit after the other the desired Way. The F5 emergency pushbutton is set (in this example, Way 56)
Then repeat the operation for the other 3 backup Ways (F6, F7, F8). Confirm with F3 (OK).

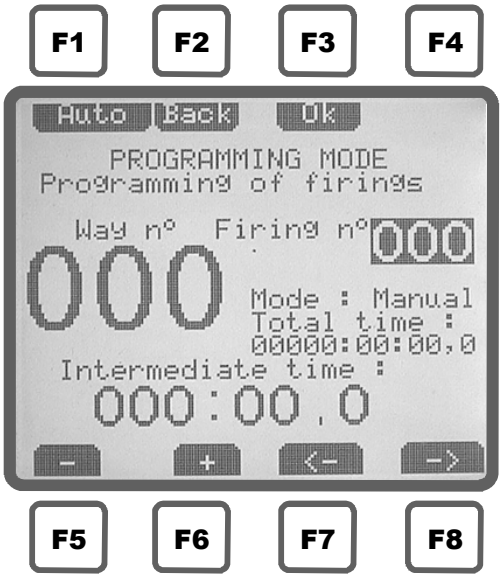
Note: The set backup Ways remain in the memory of the Oxydium from one time to the next, it is advisable to check their assignments at each new show and modify them if necessary.



Programming the Ways:

On the next screen you have to assign to each Way the necessary informations :

The Way to fire (appears automatically in chronological order)
The mode of the Way : automatic or manual (by default manual)
The time between each shot (lap)



Manual mode means that the way to be fired must be manually with two fire push buttons.
Auto mode means that the way is automatically fired according to the established show program.

1 / Begin with firing No. 000 (blackened field), is the first Way (No. 000) of the show. This Way is necessary in manual mode, it is indeed from this manual firing (press the two fire buttons) that will start the execution of the show program.
It is possible to assign a delay (which will delay firing after pressing the fire buttons)

2/ For going to the firing n° 001, turn the rotary switch one notch or press F6 (+). Way n° also go to 001.
We must enter basic information :

a) With F1 (Auto) select whether this Way is automatically fired into the framework of the execution of the show program. If not, leave it in manual mode.
b) With F7 (<) and F (8) go to the blackened field "intermediate time" 000: 00.0 and using F5 (-) and F6 (+) go successively enter the delay relative to the previous way. This delay is expressed in minutes: seconds, tenths of a second.

Once completely filled the way n°001, proceed to 002. To do this using F7 (<) and F8 (>) to return to the displayed area Way n° 001 and press F6 once (+) to display 002. Repeat the same operation than the Way 001 (press Auto, enter the time between the way 001 and the way 002). And so on.

The "Total time" counter shows in minutes: seconds, tenths of seconds the total time accumulated since the last Way programmed in manual mode. So if the whole show is automatic, it is the total time from the first firing which is indicated.

When the show programming done, do a control scan Way after Way with the rotary switch to check that nothing has been forgotten (Auto or Manual mode selection, time ...). When the checks are complete, press F3 (OK) to exit the programming menu.

It is still possible to make changes to the program by returning to the programming mode.

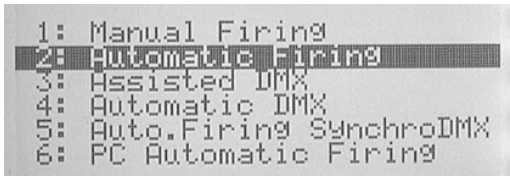
Finally, it is advisable to do a final test by running a simulation program, as explained in the following chapter.

Note: direct programming mode from the console does not allows to program the ways in random order, that is the reason why the Way n° is the same than the firing n°. This is only possible from the PC with Oxydium Suite software, more convenient and offers more features.

It is not possible to set intermediate time less than 0.1 second.

AUTOMATIC ACTIVATION OF A SEQUENCE

Switch on the Oxydium with the 0/1 button.
Press F1 (Fir) and confirm firing mode selection by pressing F3 (OK).
Enter the activation code from firing mode as explained page 6. The two fire buttons then light up and are active.
With F5 (-) and F6 (+) or the rotary switch select "Automatic firing".



Select the desired show program with F5 (-) and F6 (+) or the rotary swtich (example here "TEST1").
Valid with F3 (OK).

Then appears the show program ready to be started. For this, simultaneously press and release immediately the two fire buttons to start the program execution.

- "Way n°" indicates the next Way will be fired (006 in this example)
- "Mode" indicates if this Way is automatically fired by the program or if it should be fired manually.
- "Intermediate time" indicates the time that has accumulated since the firing of the previous Way if the next track is in manual mode, or the time remaining until the firing of the next Way if in automatic mode.
"Total time" indicates the time since the firing of the first Way.

Note: To avoid operator error if the next Way to shoot is on automatic mode, it is not possible to change manually the Way during program execution.

F1 key (Pause) is used to interrupt the program run. During a break the rotary switch becomes active, allowing to move freely in the program, for example to restart the cycle to the desired location (for example to rewind, or skip the Ways originally scheduled) . You can access more quickly to the desired Way with the F3 key pressed (X10) and turning simultaneously the rotary switch, the rotary switch then allows rapid movement (10 by 10) of the Ways. The displayed Way becomes in manual mode and the possible remaining time is canceled (the firing will be instant). To restart the program sequence, it must press the two fire buttons.
Important: Any action on Pause or with the knob to manually access a Way of the program (whether manual or automatic) cancels the remainder of the programmed time for that Way (the shot will be immediate as soon as the buttons are pressed).

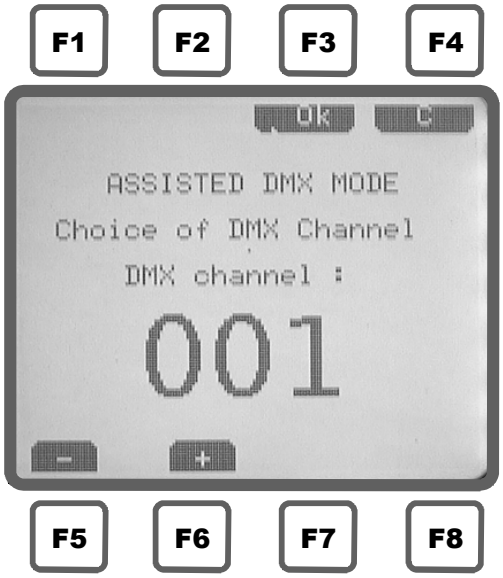
Enabling a backup Way during program execution: first press (and hold) F5 to F8, which corresponds to the desired backup Way, then press one of the two fire buttons (more explaination on page 8).

Note: It is not possible to firing a backup Way exactly simultaneously with a programmed Way.
It is also still possible to interrupt a show program running to continue firing in fully manual mode if the need arises. For this press F4 (C) and select "Manual Firing", go to the desired Way and continue the show manually.
The adjusted backup ways stay in memory of Oxydium console one time over the other, so check their assignments at each new show and change them if necessary.

MANUAL FIRING WITH DMX ASSISTANCE

The Oxydium console is equipped with a compatible DMX input, and is intended for those who are already equipped with a DMX controller and want to use it. With assisted DMX mode, at each DMX signal the screen of the Oxydium indicates it, and it's the operator who must manually confirm the firing order. This DMX mode "assisted" is possibly suitable for firing pyrotechnic products because it requires each time a manual confirmation.

Switch on the Oxydium with the 0/1 button. Connect the connection DMX cable from your DMX interface in the XLR DMX input.
Press F1 (Fir) and switch to Firing mode by pressing F3 (OK). Enter the activation code (explained p13). With F5 (-) and F6 (+) select "Assisted DMX".



Select DMX channel using F5 (-) and F6 (+) on which you have insert the DMX signals on soundtrack (here channel 1)
Press F3 (OK) to confirm.
The two fire buttons then light up and are active.

So each DMX signal of this channel will be recognized by Oxydium.

The screen of assisted DMX mode appears.
The next firing Way in waiting (way n° 000 to start).
Start your DMX controller with its DMX signals previously marked. At each DMX signal identified by Oxydium, the Way displayed in awaiting firing appears in negative (white on black).
Immediately press the two fire buttons to activate the firing of this first DMX signal.

The system then automatically switches to the next way (way n° 001). As soon the second DMX signal the way n°001 is shown in negative, immediately press the two fire buttons to activate the firing of the second top. And so on...

Observations:
For a DMX signal is clearly recognized by Oxydium, it must be of a magnitude greater than 200, and its length must be set minimum 0.1 second from your DMX controller. Required DMX signal voltage: 5V (a too low a voltage may increase initial sync time between fixtures or make signals harder to detect).

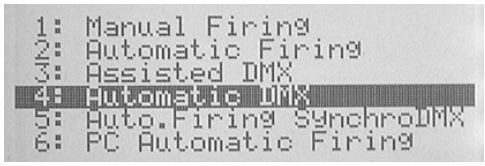
This device behaves like any DMX receiver and should therefore be applied to it all the rules of use.
Minimum time between two DMX signals : 1 second.
Use DMXCORD reference connecting cord to connect the DMX interface to the Oxydium.

AUTOMATIC MODE WITH DMX

Usage restrictions: This self DMX mode is an accessory and is reserved only for control of non-pyrotechnic effects (examples : confetti, party favors ...) from a standard DMX interface that drives Oxydium. Otherwise, use "assisted DMX" mode or « Auto.Firing synchro DMX".

A pulse of 30 milliseconds approximatively is issued automatically successively on the outputs of satellite MAF60 series II as the DMX signals integrated on the audio file.

Switch on the Oxydium with the 0/1 button. Connect the connection DMX cable (code DMXCORD) from your DMX interface in the XLR DMX input. Press F1 (Fir) and switch to Firing mode by pressing F3 (OK). Enter the activation code (explained page 6). With F5 (-) and F6 (+) select "Automatic DMX".



Select DMX channel using F5 (-) and F6 (+) on which you have insert the DMX signals on soundtrack (here channel 1).
Press F3 (OK) to confirm.
So each DMX signal of this channel will be recognized by Oxydium.
The screen of DMX AUTOMATIC MODE appears.
The firing Way in waiting (Way n° 000 to start).
Start your DMX controller with its DMX signals previously marked. At each DMX signal identified by Oxydium, the way displayed is energised. The system works in step by step mode, it goes automatically to the next Way (Way 001) and waits. As soon the second DMX signal the Way001 is energised. And so on...

Observations:
For a DMX signal is clearly recognized by Oxydium, it must be of a magnitude greater than 200, and its length must be set to 1 / 10th of a second from your DMX software.
This device behaves like any DMX receiver and should therefore be applied to it all the rules of use.
Minimum time between two DMX signals : one second.
Use DMXCORD reference connecting cord to connect the DMX interface to the Oxydium.

AUTOMATIC FIRING WITH DMX SYNCHRONISATION

With the mode "Auto Sync Shooting DMX" it is possible to start a firework created with the "Oxydium suite" software with the assistance of an automatic synchronization by an integrated DMX signal in an audio file. In case of the use of DMX, this mode is potentially suitable for firing pyrotechnic products because it requires a manual confirmation from the operator for starting a sequence.

Switch on the Oxydium with the 0/1 button. Connect the connection DMX cable from your DMX interface in the XLR DMX input.
Press F1 (Fir) and switch to Firing mode by pressing F3 (OK). Enter the activation code (explained p13). With F5 (-) and F6 (+) select "Auto.Firing synchro DMX".

Select DMX channel using F5 (-) and F6 (+) on which you have insert the DMX signals on soundtrack (here channel 1)
Press F3 (OK) to confirm.
So each DMX signal of this channel will be recognized by Oxydium.

Select the desired show program with F5 (-) and F6 (+) or the rotary swtich (for example here "TEST1"). Confirm with F3 (OK). Both fire buttons then light and are active, and a DMX synchronization signal is waiting.

Then appears the ready show program to be started.

- "Way n°" indicates the next Way will be fired (the 000 in this example)
- "Firing N°" is the chronological number of the firing (000 in this example). If the Ways are in a normal numerical order (000, 001, 002, 003 ...), "Firing N°" and "Way N°" will show the same number.
- "Mode" indicates if this Way is automatically fired by the program or if it should be fired manually.

Use only DMXCORD reference connecting cord to connect the DMX interface to the Oxydium.

From your DMX console (computer, drive, etc) launch your audio file with one DMX signal. This DMX signal will synchronize the Oxydium console to start the selected program (here the No. 0).

To run the program, press and maintain pressed the two fire buttons, then it appears "WAITING DMX SYNCHRO". As soon as the DMX signal of the audio file is identified by the Oxydium, the program execution starts. Then releasing the fire buttons.

If the selected program is fully automatic, only one synchronization DMX signal is necessary at the beginning of the audio file.
A DMX signal alone, without action on the fire buttons, has no effect.

Note: You can manually generate a synchronization DMX signal by pressing the F2 (Sync) : press and maintain pressed the two fire buttons and press F2 (Sync).

As in any program created with the "Oxydium suite" software, you can insert Ways in Manual mode. It will take a new synchronization DMX signal to restart : as previously press and maintain pressed the two fire buttons, then it appears "WAITING DMX SYNCHRO". As soon as the DMX signal of the audio file is identified by the Oxydium, the program execution starts. Then releasing the fire buttons.

Note: To avoid operator error if the next Way to fire is automatic mode, it is not possible to change manually the Way during program execution.

F1 key (Pause) is used to interrupt the program run. During a break the rotary switch becomes active, allowing to move freely in the program, for example to restart the cycle to the desired location (for example to rewind, or skip the Ways originally scheduled) . You can access more quickly to the desired Way with the F3 key pressed (X10) and turning simultaneously the rotary switch, the rotary switch then allows rapid movement (10 by 10) of the Ways. The displayed Way becomes in manual mode and the possible remaining time is canceled (the firing will be instant). It will take a new synchronization DMX signal to restart (or manually generate a synchronization DMX signal by pressing the F2).

Firing a backup Way during program execution : first press (and hold) F5 to F8, which corresponds to the desired backup Way, then press one of the two fire buttons (more explaination on page 8).

Note: It is not possible to firing a backup Way exactly simultaneously with a programmed Way..
It is also still possible to stop the running of a show program to continue firing in fully manual mode if the need arises. For this press F4 (C) and select "Manual Firing", go to the desired Way and continue the show manually.

FIRING BY PC (Oxydium PyroMusical Creator)

This alternative mode is intended only for users of direct creation software of projects on audio file : **Oxydium PyroMusical Creator**.

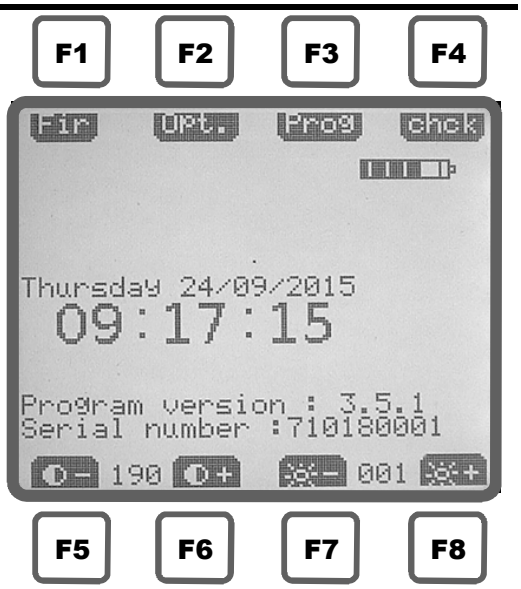
Not to be confused with the normal software programming of the Oxydium console : "Oxydium suite".
Oxydium Pyromusical Creator allows firing a pyrotechnic show based on a previously prepared audio file. This mode requires a direct USB connection between the PC and the Oxydium console and it not use the DMX protocol. This is no longer the only independent memory Oxydium which drives the actions, but an external PC computer, or a **P**yromusical **C**ontroller console, that gives firing instructions to the Oxydium console.
For more information on this feature please refer to the specific instructions of Oxydium Pyromusical Creator software.

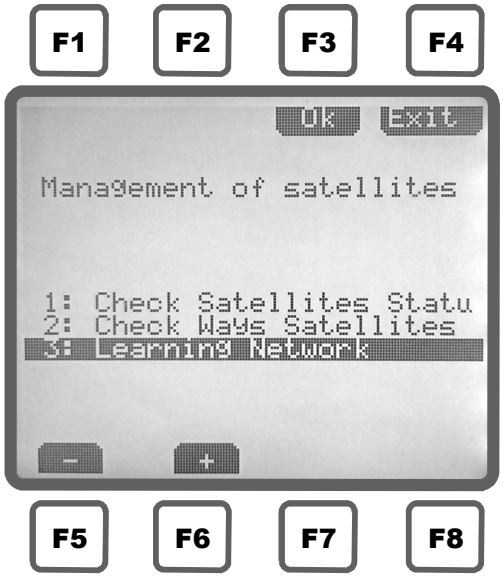
SATELLITE CHECKINGS FROM THE OXYDIUM CONSOLE

It is possible from the OXYDIUM console to check directly some parameters of the different satellites connected.
These verifications tests are complementary and do not substitute for routine checks detailed in the manual of MAF60 serie II.

The new bidirectional HF system OxyRadio allows also thoses remotely checkings.
To perform such tests, a Oxydium may find only the satellites he knows : first, you must store* in the Oxydium memory the serial number of your satellites. This operation is to be performed only once (except if you delete them in the meantime).

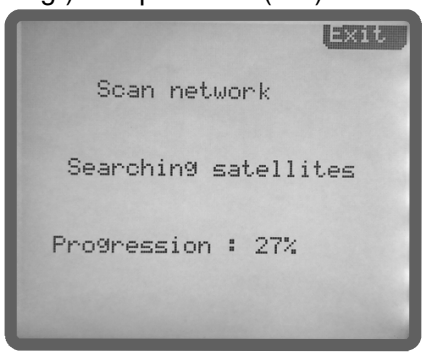
** See store satellites page 9 chapter Oxydium Suite.*
From the Home screen, press the F4 (chck) button



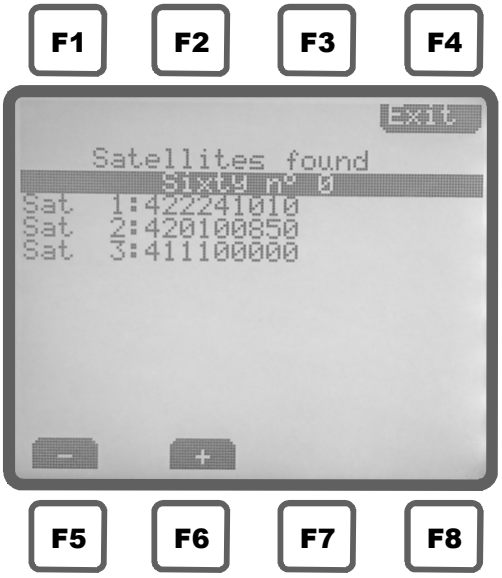


LEARNING OF THE NETWORK : Once all your satellites are connected and switched on (but with the firing mode key at 0), it is appropriate to inform the Oxydium of the satellites installation. This is done automatically with the "Learning Netwok. ".
Select this function (line 3, Learning config.) and press F3 (OK).

These functions are optional and independent of the firing : if you do not do them, only the checks from the Oxydium will not be operational. The rest (shots, beacons…) will work normally.



Appears the screen indicating that the current satellites installation is now in process of memorising.
This initial learning cannot succeed if the satellites are switched off or in firing mode activated (these satellites will be ignored). Any new learning erases the previous one.
The network learning time is proportional with the number of satellites previously stored in the Oxydium, and above all to the fact whether they are present or absent in the configuration (if present, a satellite is found in 1 to 2 tenths of a second, if he is absent he will be searched for 5 seconds by the Oxydium before moving on to the next one) : it is therefore advisable to leave in memory only the satellites actually used.



When the search is complete, a screen page indicates sixty by sixty (is that which is setted on satellites) the satellites found.
In this example, there are three satellites (serial No.0422241010, 0420100850 et 0411100000 found). To see if there are other satellites, check sixty after sixty with F5 (-) and F6 (+).
The satellites are displayed in the order of memorization carried out initially with "Oxydium suite", a screen page that can display up to 10 satellites is dedicated to each sixty (excess satellites set to this same sixty will works but not displayed *). The sixty fully addressed satellites can display up to 20 satellites (on 2 screen pages).

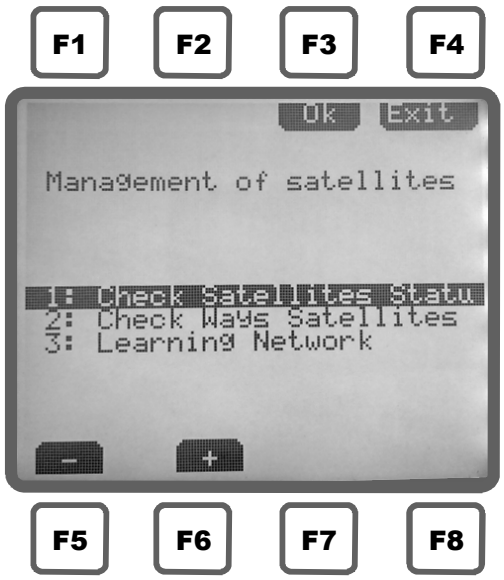
** Tip: In the event of additional standard satellites > 10 set on the same sixty, in order to continue to display them, it is always possible to reprogram their fully addressable sixty with the standard sixty in overnumber (this .tir program is available on the cd rom or on www.genetec.fr section faq).*

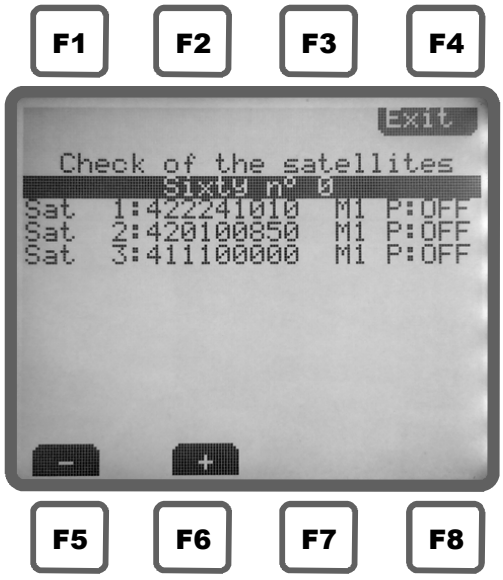
In case of change of configuration (change modem number, satellite position ...) it must be done always a new configuration learning, otherwise an error message will indicate some problem.
Nota : Oxydium keeps the last configuration in memory, even if it was switched off. It is therefore possible to prepare its config in advance.

CHECKING OF THE SATELLITES STATUS : This function allows you to view the settings of the satellite, the previous step « Network Learning » serving as reference. Once all your connected and powered satellites, so you can check :

- If the satellites are present
- The group sixty setted on the satellites
- The output of the Oxydium modem on which satellites are connected
- If the Firing mode is enabled (key on 1)

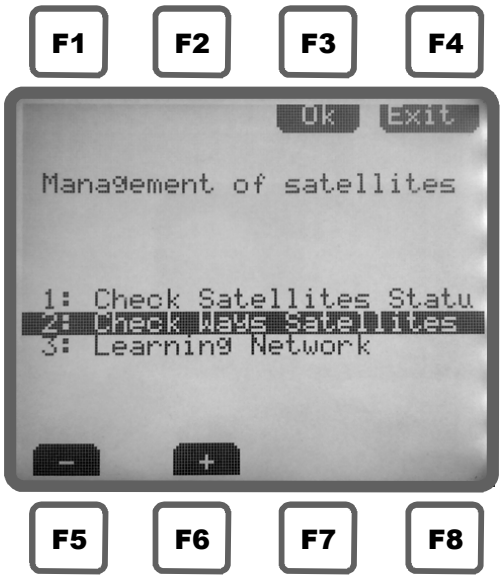
To access to this function select "Check satellites statu"
On the next screen appear sixty by sixty the satellite status.

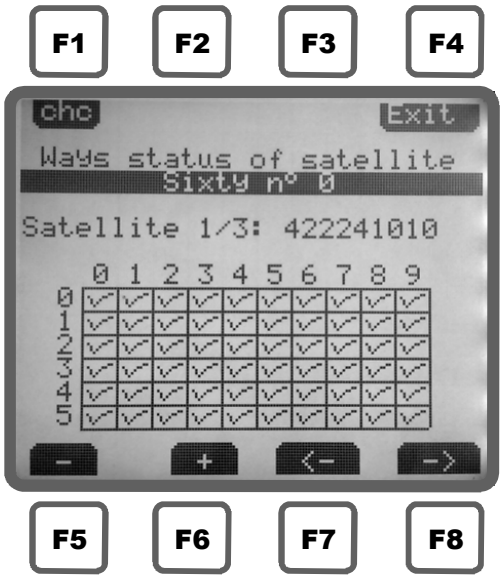




In this example on the group of sixty No. 0 (Ways 00-59) :
Three satellites serial No. 0422241010, 0420100850 et 0411100000 have been identified, they are connected to the modem 1 (M1) of the Oxydium, and the output power (this is the Firing mode key of the satellite) are not enabled OFF (P: OFF). If the keys were on 1, we would have had P:ON
To check the satellites setted on other groups of sixty, press F5 and F6, or turn the rotary switch.
After the sixty number 9, there is the sixty of addressed satellites.
Any difference from the reference Network Learning will have an error message

CHECKING OF WAYS STATUS OF THE SATELLITE(S) :
This function allows you to view a single glance whether the lines of the ways of the satellite(s) are still in accordance with the ohmic test previously performed on the satellite (s).
The Oxydium performs a comparison on each output with the ohmic measurements directly done from the satellite, so the step of direct ohmic reference test on the satellite remains indispensable.
Thus a √ indicate whether the status of the line is identical to the reference ohmic test, and its absence report a change of status (ex.: so if a Way is normally no wired during the ohmic reference test, a √ appear in the cell of the graph. Inversely this cell will be empty if in the meantime a new line wired was add on that way output). To access to this function select « Check Ways satellites »





On the next screen appears satellite by satellite, and sixty by sixty, the lines status wired on the Ways outputs. In this example, we can see in the table 60 cells (arranged like on real satellites) on the group of sixty No. 0 (lines 00 to 59) all the ways outputs that are in accordance with the ohmic test carried out beforehand on the satellite (a √ = Valid or if the cell is empty = different online status).
If there are √ in all cells, including non-wired Ways outputs, the correlation with the reference test is good.
To check other satellites press F5 and F6 (or turn the rotary switch) to go to another satellite set on the same group of sixty, and F7 and F8 to access to satellite set to other group of sixty.
Note: This status lines control function does not operate if the satellite is in firing mode enabled (key on position 1).
As a reminder , the sixty N° 0 corresponds to Ways 00-59, sixty N°1 to Ways 60 to 119, etc ... (see page 18).

Note about the eligibility for old satellites already in service to the checking functions from the Oxydium console :

All satellites marketed since late September 2012 are electronically intended to be compatible with this two-way communication function related to the tests (from the time when their firmware has been updated).

For older satellites, it is not systematic depending on the version: the simplest is still to proceed the latest firmware update available on www.genetec.fr and follow the procedure described on page 15 (memorization and learning configuration). Electronically the eligible satellites appear in the list of satellites found by the Oxydium. An old ineligible satellite will remain invisible to the new test functions from the Oxydium console (and only for these test functions). It is quite possible to have in a same configuration some satellites providing feedback with other older satellites which do not it. The current operations (beacon, firing ...) remains unchanged rigorously and fully operational, but only the eligible satellites could appear in the check list from Oxydium.

More generally speaking, all satellite products since 2007 can claim to provide an information feedback to the Oxydium : for some the simple update of firmware is enough, for others it takes an update of firmware and changing an electronic component of their modem (which may very well be done free by our services during a simple operation for maintenance or a battery replacement for example).

You can also write to us at contact@genetec.fr and give us the serial number of your old satellites so that we check eligibility for the feedback informations function.

In any case, always make updates on all devices firmwares : even if your old satellite is not compatible with this feature bidirectional communication, this update will still provide all the other benefits of optimization updates.

Note about the eligibility for old satellites already in service to the firing at 0.1 second :
Only the transistrorised satellites (after july 2011, after the serial number 04XXXX0190) with a firmware updated are compatible. The older version with electromechanical relay (maximum firmware supported is 3.5 version) are still compatible with all Oxydium but they can’t shot under 0.2 sec.

OBSERVATIONS AND ADVICE :

- Before use, you must familiarise you with your OXYDIUM. Make sure you're able to control all functions.

- If in proximity of the fireworks area, remember to protect the cover of the case and the cable from eventual incandescent fall.

- If you use the case in very cold area (such in the mountains or snow), install the control unit at the last moment so as to preserve the battery, otherwise you risk a loss of power.

- In case of rain, protect the system from water. Pay attention to seawater because it is relatively conductive. Leave lid open to dry the devices having got wet.

- Only use water with a soft cloth to clean your case, do not use solvents.

- No powerfull radio transmitter should be used in proximity of the control unit.

- Avoid strong electrostatic discharges which can, for example, disrupt the operation of the LCD screen and require a restart. To perform a reset of the oxydium, turn off the console with the 0/1 button and wait a few seconds before switch on again. To perform a hard RESET (only for maintenance operation), open the top panel (18 Phillips screws) and unplug a terminal from the battery 1 min, and reconnect.

- The wire connection oxydium / satellite is studied for the standard wire for fireworks (0.2mm2, 0.17 ohm per meter). However, it is also possible to use sheathed telephone wire in order to have better mechanical strength.

- Recharge the battery regularly, do not allow it to discharge deeply.

MAIN CHARACTERISTICS

- Manual firing with auto increment up or by selection with rotary switch
- Manual/Automatic mixed firing
- Fully automatic firing (just give the starting signal)
- Manual firing with DMX assistance
- Automatic firing with DMX synchronization assistance
- Manual control still works in automatic firing mode
- Programmable directly on console or by PC (USB cord provided)
- Programming software « OXYDIUM SUITE » provided
- « Oxydium Pyromusical Creator » software provided
- Programming resolution 1/10eme of sec. (minimal time between 2 shots : 0.1 sec)
- Memory : 4 programs
- Automatic beacon of check the communication
- Chronometers partial, total time, and countdown
- 4 adjustable backup Ways
- 8 push buttons for interactive functions
- Drive up to 600 Ways
- Acces to the firing mode by a personnal security code
- 3 outputs of data for driving the satellites (up to 5 satellites per output)
- 2 luminous firing push button
- Large LCD display backlighted (adjustable brightness)
- Feedback from the satellites to the Oxydium (lines, connections ...)
- Battery level indicator
- Consumption : 50 up to 130mA (according to backlight setting)
- Average residual consumption when switched off : 0.05 up to 0.1mA.
- Powed supply by lead battery 12V 2.3Ah (charger provided)
- Languages : English, French
- Dimensions 464x360x176mm, weight 6kg, case IP65

SAFETY INSTRUCTIONS :

- **Never work near the fireworks when the OXYDIUM is switched on.**

- **The MAF60SII satellite must be placed at a safety distance from fireworks items to allow the intervention. Turn off the ignition key and completely switch off the satellite MAF60SII during installation or in case of intervention.**

- **The general swtich-on of the system must be done only if the "firing mode" key of the MAF60SII satellite is on 0 position.**

- **The line's resistance checks should not be done as until everyone has left the dangerous area.**

- **ABSOLUTELY NO STAFF IN THE DANGEROUS ZONE WHEN SWITCHING ON THE SYSTEM. TO DO ENFORCE THESE INSTRUCTIONS.**

- **Respect the usual safety instructions as well as using common sense.**

- **The control unit must be located a good distance away from the fireworks area, even for the checkings.**

- **Study these operating instructions.**

- **Storage, battery recharge, transport: The systems must be turned off and away from pyrotechnic products.**

- **Safety of people always takes priority over all other considerations.**

DECLARATION U.E.
DE CONFORMITE

CE

Nous, Genetec, déclarons sous notre propre responsabilité que l'appareil suivant :

Console numérique marque GENETEC modèle OXYDIUM

Est conforme aux exigences essentielles listées ci-dessous :

EN61000-6-3
EN61000-6-1

Information supplémentaire :
Ce produit est conforme à la CEM directive 2014/30/UE concernant le rapprochement des législations des états membres relatives à Compatibilité ElectroMagnétique, ainsi qu'à la directive européenne RoHS 2011/65/UE.

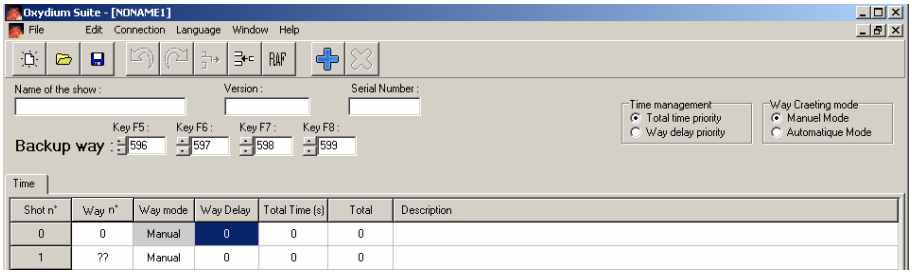
Les produits ont été testés dans une configuration normale.

La Bastidonne, le 09/12/2016.

Pour Genetec,
J-L Vincent
co-gérant

Part 2 *(software)*

Oxydium Suite SOFTWARE *version 3.6, 15/04/2016*



PRESENTATION INSTALLATION ……..……1
CREATE A FIRING MODE PASSWORD ……..……..2
CREATE A PROJECT……..……..……..……..2
Programmation screen
Backup Ways
Programmation of firings
Create a burst
Saving a project
Print a project
CHANGE AN EXISTING PROJECT ……..6
Insert and delete a line
Delete and restore the last operation
Insertion of a burst
CHECK A PROJECT …..……..……..8
TRANSFERT A PROJECT TO THE OXYDIUM CONSOLE …..……..8
MEMORIZATION OF SATELLITES IN THE OXYDIUM ……..……9
Special function : ADDRESSING OF THE OUTPUTS OF SATELLITES ……..……10

Oxydium Suite is the software for creating PC programs (or projects) for the shows on your Oxydium console. It brings greater ease, flexibility and functionality than the direct creation on the console. Oxydium Suite has been designed to be simple and quickly took over. Nevertheless, we recommend you to read this manual.

Insert the CD ROM into your PC and, using your browser, create a "Oxydium" folder on your PC, and copy the cd rom in this file, it contains five elements in which there are :

- Oxydium Suite Software *
- The instruction manuals
- Driver USB for Oxydium
- The updates of the firmwares

Once the CD ROM copied, remove it from your PC.
Read the manual of the Oxydium (pdf file). You can print it for convenience.
Install the USB driver present in the "USB Driver" folder and follow the instructions on the screen.
If you have old MAF60SII satellites and other accessories (HF ...) you must update their firmwares.
Launch the software OxydiumSuite.exe present in the Oxydium Suite folder (you can create a copy directly to your desktop for quick access).

** Note: in the case of re-installation of a new version, delete the previous version by clicking on it from your Windows Explorer and by directly "Del. ". Keep your projects ".tir" because they remain compatible.*

If your PC is not equipped with a CD-rom drive, or if it is not the latest version of the program (and the user manual), Oxydium suite is also available for download on our website www. genetec.fr (Oxydium page).

1/ CREATE A NEW ACCESS CODE TO THE FIRING MODE :

First you must replace the original factory code (0000) by a new code.
Connect your PC to the Oxydium console with the USB cord provided.
Start Oxydium Suite software, click on « Connexion », then « Firing password ».
Enter twice a new personnal code of your choice, then click on « Valid ».
The message « Transfert succefully » inform you the end of operation.
Switch off and switch on the Oxydium console to activate the new code.

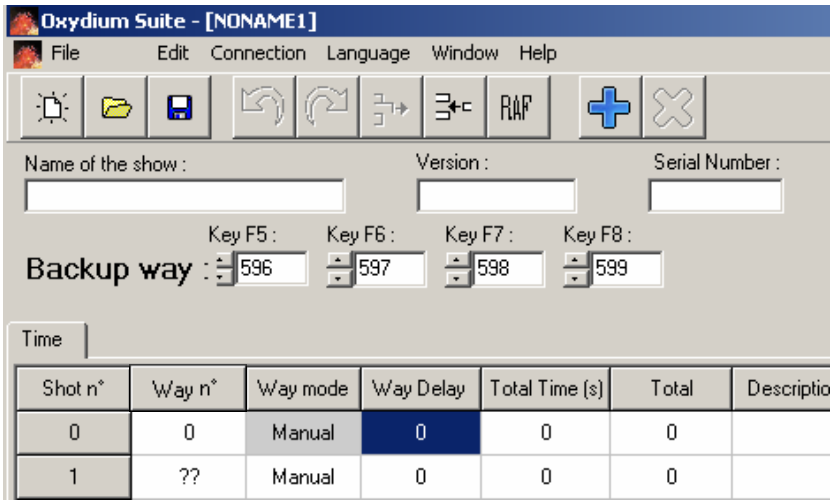
Observations : It is not necessary to know the old code to enter a new one. Any update of the Oxydium may reset the code 0000.

- For more information about the USB communication refer to nota on page 8*

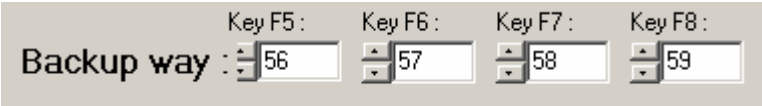
2/ CREATE A PROJECT :

- **Programmation screen :**

Click on the New file icon on the top left of the screen.
Enter the name of the project in the field « name of the show » (no special letter, no punctuation).



- **Backup Ways :**



You must assign the F5 to F8 four backup Ways of your choice.
Those four backup Ways can thus be fired quickly when needed.
Click on the field F5 and enter the number of the backup Way you want. And so on for F6, F7 and F8.
In this example we have entered 56 for F5, 57 for F6, 58 for F7 and 59 for F8.
Nota : - The set backup Ways remain in the Oxydium's memory from one time to the next; their assignments should be checked at each new show and modified if necessary.
- It will not be possible to use in the program a Way that has already been registered as an backup Way.

- **Programmation of firings :**

We must begin with the Way 0, it's the first Way of the show and is inevitably in manual mode, and it's with this manual firing (with the two push buttons "fire") which start immediatly* the sequence program.

** However, it is possible to assign a delay (It will delay the firing after pressing the firing buttons, for example it will be easy to start a synchronized soundtrack on the Oxydium by following the countdown displayed on the lcd screen).*

Shot n°	Way n°	Way mode	Way Delay
0	0	Manual	0
1	??	Manual	0

Then the Way 1 : click on the cell with « ?? » for displaying automatically the number 1.

Then in the "Way mode" column, click on and select Automatic for a triggered automatically, or Manual for it to be triggered manually by pressing the two fire buttons.

Shot n°	Way n°	Way mode	Way Delay
0	0	Manual	0
1	1	Manual	0
2	??	Manual Automatic	0

Way Craeting mode
- (•) Manuel Mode
- ( ) Automatique Mode

In order to not have to be specified for each channel "Manual" or "Automatic", select the Way creating mode (top right of the screen) the mode of addition of the new Ways. So from that moment, all the Ways will be created based on this choice.

Then in the column "Way Delay", click and enter the delay in seconds that must elapse between the firing of the Way 0 and of the Way 1. The firing time is expressed in seconds and tenths of seconds. The minimum time is 0.1 second.
If you prefer to program the time since the previous manual Way, and not the intermediate time, then enter the time directly in the column "Total Time (s)".
In this example five seconds, the two columns "Total time (s)" and "Total" are automatically filled (they indicate respectively the cumulative total time from the previous Way set in manual mode, first to seconds format and 1 / 10th of a second, and for the 2nd in hours: minutes: seconds, 1 / 10th of a second).
The optional right hand column is for the description (product, effect ...).

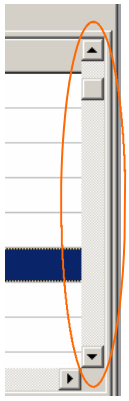
Fill the cells of the Ways chronologically . For example :

Shot n°	Way n°	Way mode	Way Delay	Total Time (s)	Total	Descri
0	0	Manual	0	0	0	
1	1	Automatic	5	5	5	
2	2	Automatic	2	7	7	
3	3	Automatic	32,5	39,5	39,5	
4	4	Automatic	20	59,5	59,5	
5	5	Automatic	23	82,5	1:22,5	
6	6	Automatic	2	84,5	1:24,5	
7	7	Automatic	5	89,5	1:29,5	
8	8	Automatic	10	99,5	1:39,5	
9	9	Automatic	2,5	102	1:42	
10	10	Manual	0	0	0	
11	??	Manual Automatic	0	0	0	

You can let Ways in manual mode (with a Way delay at 0 for an instantaneous firing as soon as you press. If you indicate a Way delay for a manual firing, there will be a delay between pressing the buttons and firing) :

8	8	Automatic	10
9	9	Automatic	2,5
10	10	Manual	0
11	11	Manual	0
12	12	Automatic	3
13	13	Manual	0
14	14	Automatic	6

Note: To move in the table preferably use the scroll bar on the right of the table. You can optionally use the arrow keys, or the rotative wheel, but only the scroll bar will allow you to completely to go to the firing number 0 (green line).



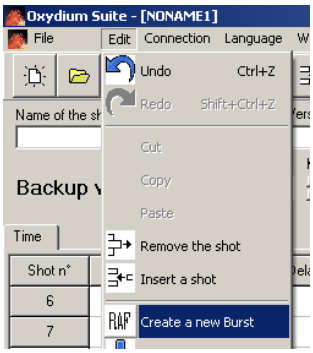
You can change the order of the Ways on entering directly the No. of the desired Way. This is useful if you have multiple satellites MAF60 set to different groups of sixty and you do not want to use the personalized addressing of satellites. It will then be a difference between the shot number and the Way number. In this example the Ways 60 and 61 of a 2nd satellite are fired alternating with the Ways of the first satellite.

15	15	Automatic	1
16	16	Automatic	8
17	60	Automatic	1
18	17	Automatic	1
19	61	Automatic	1
20	18	Automatic	1

Important note : If you opt for the use of personalized addressing of satellites (explanation page 10), it is best to avoid any risk of error to let the Ways in the order of the shots (The Shot number = The Way number).

Nota :
- It is not possible to use a Way that has already been registered as a backup Way.
- It is not possible to fire several different Ways in the same time.
- It is possible to use several times the same Way (useful for triggering sequencers in step to step mode). A message warns of this repetition, but not forbid it.
- It is advisable to save the original show program before you make changes and work on a copy (example: Test1 then Test1bis) so you can still easily find the initial program if the changes are not appropriate.
- It is possible to undo the last action in "Edit" then "Undo" (and vice versa with "Redo"), or more directly with blue arrows :

- **Create a burst :**

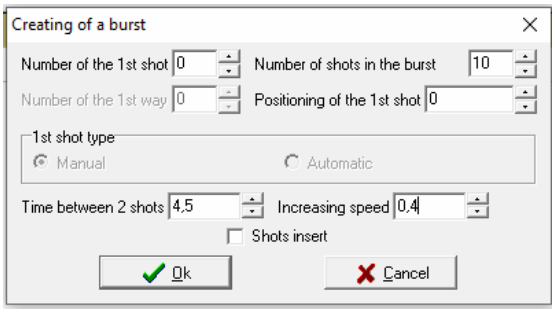


It is possible to automatically create sequences of successive shots without having to enter them one by one. Click Edit, then "Create a new burst," or directly on the icon « RAF ». The burst generation Table opens.

In this table you need to enter several parameters:

- The **Number of the 1st shot**. Number of the first shot of the burst in the general chronology of shots.
- The **Number of the 1st Way**. If the Ways are in the normal order, also matches to the shot number.
- The **Number of the shots in the burst**
-The **Positioning of the 1st shot** (it's its temporal place, the choice of this parameter does not appear if the 1st shot of the burst is in Automatic mode) : It's the delay of the 1st shot of the burst if the burst has his 1st shot in manual mode (let 0 if the burst starts as soon as than push on the push buttons), or in Total time in seconds since the last previous manual shot if Automatic mode is selected (ex. : if a burst should start automatically 5 seconds after the previous shot which took place in 100 sec listed on the "Way delay" column, enter 105 "Positioning of the 1st shot").
- The **Type of the 1st shot** : trigger of the burst (Manual or Automatic).
- The **Time between 2** successive shots *(can not be less than 0.1 seconds).*
- The **Increasing speed** : time to be deducted or added to the shooting accelerate or slow down.
- **Shot insert** of a burst : function without effect in creation of a new burst, but useful in the case of addition of a burst within an existing program. See page 7.

In the example below of creation a burst, the sequence begins without delay at the 1st shot (if the lines are in the order it is also the way n°00), it is composed by 10 shots.
The initial time between the 1st and the 2nd shot is 4.5 seconds. We have entered 0.4 second in «Increasing speed », so the time between each shot is reduced each time of 0.4 sec (to slow enter a negative number). Once the table filled, click « OK ». Your sequence will be automatically inserted in your main program screen.



Shot n°	Way n°	Way mode	Way Delay	Total Time (s)	Total
0	0	Manual	0	0	0
1	1	Automatic	4,5	4,5	4,5
2	2	Automatic	4,1	8,6	8,6
3	3	Automatic	3,7	12,3	12,3
4	4	Automatic	3,3	15,6	15,6
5	5	Automatic	2,9	18,5	18,5
6	6	Automatic	2,5	21	21
7	7	Automatic	2,1	23,1	23,1
8	8	Automatic	1,7	24,8	24,8
9	9	Automatic	1,3	26,1	26,1

Example 1 of a program: 35 shots with only one satellite MAF60 serie II, with an intermediate Way (the n°12) in manual mode making a standby in the program. Once the Way n°12 manually fired, the program starts again.

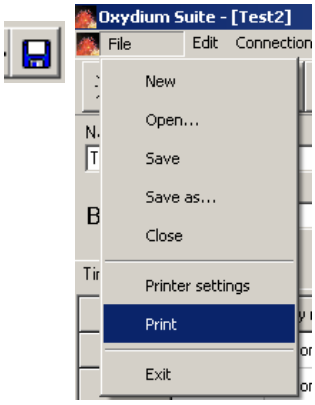
Shot n°	Way n°	Way mode	Way Delay	Total Time (s)	Total
0	0	Manual	0	0	0
1	1	Automatic	1	1	1
2	2	Automatic	5	6	6
3	3	Automatic	1	7	7
4	4	Automatic	2,3	9,3	9,3
5	5	Automatic	1	10,3	10,3
6	6	Automatic	21	31,3	31,3
7	7	Automatic	14,5	45,8	45,8
8	8	Automatic	17	62,8	1:02,8
9	9	Automatic	38	100,8	1:40,8
10	10	Automatic	25	125,8	2:05,8
11	11	Automatic	1	126,8	2:06,8
12	12	Manual	0	0	0
13	13	Automatic	13	13	13
14	14	Automatic	36,5	49,5	49,5
15	15	Automatic	24	73,5	1:13,5
16	16	Automatic	3	76,5	1:16,5
17	17	Automatic	18	94,5	1:34,5
18	18	Automatic	20	114,5	1:54,5
19	19	Automatic	5	119,5	1:59,5
20	20	Automatic	4	123,5	2:03,5
21	21	Automatic	3	126,5	2:06,5
22	22	Automatic	2	128,5	2:08,5
23	23	Automatic	1	129,5	2:09,5
24	24	Automatic	22,2	151,7	2:31,7
25	25	Automatic	5	156,7	2:36,7
26	26	Automatic	1	157,7	2:37,7
27	27	Automatic	3	160,7	2:40,7
28	28	Automatic	4	164,7	2:44,7
29	29	Automatic	7	171,7	2:51,7
30	30	Automatic	2	173,7	2:53,7
31	31	Automatic	2	175,7	2:55,7
32	32	Automatic	2	177,7	2:57,7
33	33	Automatic	2	179,7	2:59,7
34	34	Automatic	1	180,7	3:00,7
35	??	Manual	0	0	0

Example 2 of a program : 40 shots with two satellites MAF60 serie II set on different groups of sixty (one from 0 to 59, and the other from 59 to 119).

Shot n°	Way n°	Way mode	Way Delay	Total Time (s)	Total
0	0	Manual	0	0	0
1	60	Automatic	0,2	0,2	0,2
2	1	Automatic	5	5,2	5,2
3	2	Automatic	1	6,2	6,2
4	3	Automatic	2,5	8,7	8,7
5	4	Automatic	10	18,7	18,7
6	61	Automatic	1	19,7	19,7
7	62	Automatic	0,2	19,9	19,9
8	63	Automatic	5	24,9	24,9
9	5	Automatic	10	34,9	34,9
10	6	Automatic	3,3	38,2	38,2
11	64	Automatic	12	50,2	50,2
12	65	Automatic	29	79,2	1:19,2
13	66	Automatic	17,2	96,4	1:36,4
14	7	Automatic	14,8	111,2	1:51,2
15	67	Automatic	0,2	111,4	1:51,4
16	8	Automatic	0,2	111,6	1:51,6
17	68	Automatic	0,2	111,8	1:51,8
18	9	Automatic	0,2	112	1:52
19	69	Automatic	0,2	112,2	1:52,2
20	10	Automatic	0,2	112,4	1:52,4
21	70	Automatic	0,2	112,6	1:52,6
22	11	Automatic	5	117,6	1:57,6
23	12	Automatic	23,6	141,2	2:21,2
24	13	Automatic	20	161,2	2:41,2
25	14	Automatic	15,5	176,7	2:56,7
26	15	Automatic	24,8	201,5	3:21,5
27	71	Automatic	41	242,5	4:02,5
28	72	Automatic	28	270,5	4:30,5
29	16	Automatic	41	311,5	5:11,5
30	17	Automatic	28	339,5	5:39,5
31	73	Automatic	4	343,5	5:43,5
32	74	Automatic	5,8	349,3	5:49,3
33	18	Automatic	3,6	352,9	5:52,9
34	75	Automatic	0,2	353,1	5:53,1
35	76	Automatic	6,3	359,4	5:59,4
36	77	Automatic	2,1	361,5	6:01,5
37	78	Automatic	0,2	361,7	6:01,7
38	19	Automatic	1	362,7	6:02,7
39	39	Automatic	0,2	362,9	6:02,9
40	??	Manual	0	0	0

- **Save a project :**

Create a specific folder in your PC and save your project by clicking on File, then Save as. Give it a name. Then, throughout the creation of your project, you can save it by clicking on Save (or directly on the icon).



- **Print a project :**

Click « File », then « Print ».

3/ MODIFICATION OF AN EXISTING PROJECT :

- **Insert or delete a shot :**

To insert a shot :
The inserted shot will be placed below the selected Way in blue, and the number will be assigned automatically is the next shot number (even if already assigned*). If number(s) of Way(s) after insertion doesn't correspond or no longer your need you can manually correct. Correct the timing downstream of the inserted shot if necessary.

Insert a shot

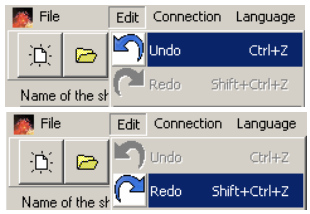
* Nota : It is not possible to insert a shot if it is assigned by default at a Way number already assigned to a backup line.

Delete a shot

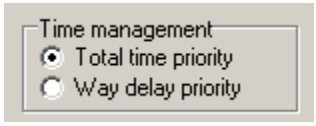
To delete a shot :
The deleted shot will be the one selected in blue.

- **Delete and restore the last operation :**

It is possible to undo the last action in "Edit" then "Undo" (and vice versa with "Redo"), or more directly with blue arrows :



- **Time management :**



This automatic time compensation function is not active on this version of the software.

- **Add a burst in an existing project :**

If the burst is to be added at the end of an existing project, this means creating a burst ordinary, see page 4.

If the burst must be inserted between the shots of an existing project, click on icon « RAF » and the burst creating table appears. You must fill :

-The **Number of the 1st shot**. Number of the first shot of the burst in the general chronology of shots.

- The **Number of the 1st Way**. This number must be different from the number of the 1st shot for that the burst does not overwrite the ways already created downstream. Indeed, in case of last-minute addition of a burst in an already installed and wired show, it is interesting to add a burst without having to remove the physical wiring of the installed lines.
*Example : if your existing show includes 45 lines and you want chronologically integrate a burst of 10 ways after the shot No. 20, in the burst creation table you will fill : number of the 1st shot **21**, number of shots in the burst **10**, number of first way **50**, "**Shots insert**" selected (and you physically wire the 10 lines of the burst on the outputs 50-59 of the satellite without remove the existing lines after 21). The burst thus created will replace the old shot n°21 (remember to reinsert it after the burst so that Way 21 is not skipped). The order of the fired Ways will be from 0, 1, 2, 3, 4, ... 19, 20, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 21, 22, 23 ..... .44. * See note below.*

- The **Number of the shots in the burst**

- The **Positioning of the 1st shot** (it's its temporal place, the choice of this parameter does not appear if the 1st shot of the burst is in Automatic mode). It's the delay of the 1st shot of the burst if the burts has his 1st shot in manual mode (let 0 if the burst starts as soon as than push on the push buttons), or in Total time in seconds since the last previous manual shot if Automatic mode is selected
(ex. : if a burst should start automatically 5 seconds after the previous shot which took place in 100 sec listed on the "Way delay" column, enter 105 "Positioning of the 1st shot").

- The **Type of the 1st shot** : trigger of the burst (Manual or Automatic).

- The **Time between 2** successive shots *(can not be less than 0.1 seconds).*

- The **Increasing speed** : time to be deducted or added to the shooting accelerate or slow down.

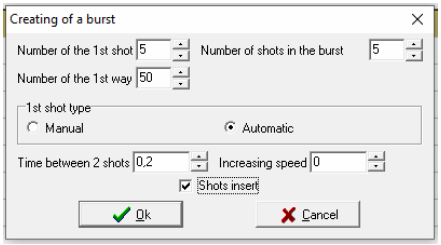
- **Shots insert** of a burst (see *nota* below)* : in the case of addition of a burst in an existing timeline.
Must be selected whether the Ways of the burst must be inserted between two existing Ways of the project, otherwise the burst of « n » Ways will replace the « n » existing Ways following.

** Nota : In the case of insertion of a burst (without replacement) between already created shots, if the first Way number has not been entered, the n° of the Ways of that inserted burst will follow the n° of the previous Way before the burst without renumber the Way numbers after the burst.*
If the numbers of the Ways after insertion doesn't correspond or no longer your need, you can manually correct.

Example : create a small burst of five quick shots, 20 seconds after firing n°4 in an existing project . The new order of the Ways will be at the end : 0, 1, 2, 3, 4, 50, 51, 52, 53, 54, 5, 6, 7, 8, 9, etc.....

Project before the creation of the burst

Shot n°	Way n°	Way mode	Way Delay	Total Time (s)
0	0	Manual	0	0
1	1	Automatic	20	20
2	2	Automatic	20	40
3	3	Automatic	20	60
4	4	Automatic	20	80
5	5	Automatic	20	100
6	6	Automatic	20	120
7	7	Automatic	20	140
8	8	Automatic	20	160
9	9	Automatic	20	180



Project after the creation of the burst

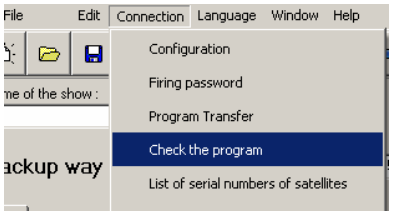
Shot n°	Way n°	Way mode	Way Delay	Total Time (s)
0	0	Manual	0	0
1	1	Automatic	20	20
2	2	Automatic	20	40
3	3	Automatic	20	60
4	4	Automatic	20	80
5	50	Automatic	0,2	80,2
6	51	Automatic	0,2	80,4
7	52	Automatic	0,2	80,6
8	53	Automatic	0,2	80,8
9	54	Automatic	0,2	81
10	6	Automatic	20	101
11	7	Automatic	20	121
12	8	Automatic	20	141
13	9	Automatic	20	161

Project after the creation of the burst and add of the Way 5

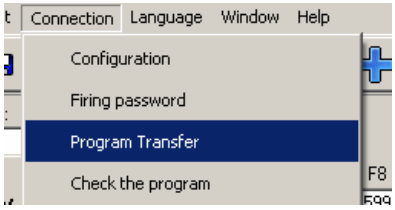
Shot n°	Way n°	Way mode	Way Delay	Total Time (s)
0	0	Manual	0	0
1	1	Automatic	20	20
2	2	Automatic	20	40
3	3	Automatic	20	60
4	4	Automatic	20	80
5	50	Automatic	0,2	80,2
6	51	Automatic	0,2	80,4
7	52	Automatic	0,2	80,6
8	53	Automatic	0,2	80,8
9	54	Automatic	0,2	81
10	5	Automatic	20	101
11	6	Automatic	20	121
12	7	Automatic	20	141
13	8	Automatic	20	161
14	9	Automatic	20	181

4/ CHECK A PROJECT :

Once the project is complete, always do a self-check. Click "Check the Program". If an information window opens, there are things to correct possibly :
- An error indicates something that must be corrected *(in the example the forgetting the project name).*
- A warning indicates an unusual thing, but does not require a correction *(in the example a repetition of a Way, but that may be desired).*



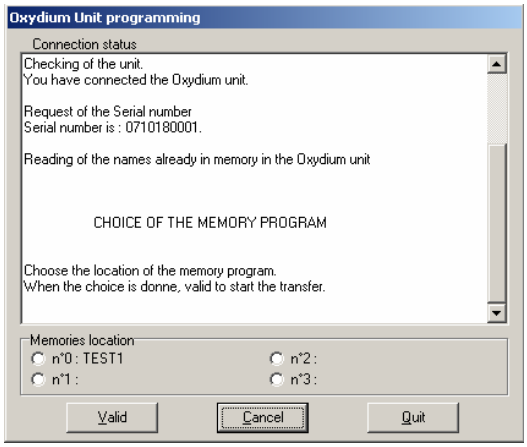
5/ TRANSFERT A PROJECT TO THE OXYDIUM CONSOLE :



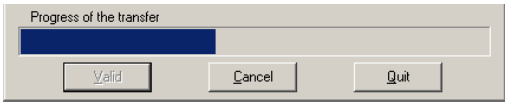
Once verified your show program, it is necessary to transfer it from PC to Oxydium. Click "Connection" and then "Program Transfer".

Follow the steps given by successive screens :
To do this, connect the PC to Oxydium with the USB cord provided.
Switch-on the Oxydium console.
Click « Connect ».
Note: it is not possible to perform transfer if the firing mode of Oxydium console is enabled.

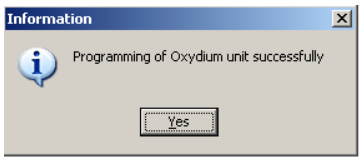
**Nota : If an error message at the "Com Port" appears notifying that the transfer is not possible, you should assign a different COM port to the USB controller of the Oxydium: it must be assigned to a port between 1 and 9. With the Oxydium still connected to the PC, go to the Windows ports settings.*



In the "Memories Locations" area select the destination of the show program (0 to 3).
Warning: be sure to transfer it to a free memory location, if not the existing program in the Oxydium console will be replaced by the new program. Click « Valid ».
The message "Programming of Oxydium unit successfully » indicates the end of the operation. Click « Yes ».
You can unplug the USB cord.
Make sure your program has been saved in Oxydium. Finally, it is advisable to do a final test by running a simulation program directly on the console.



Note: It is strictly necessary to reach the stage clearly indicating that programming was successful. Otherwise the transfer of the program may have been disrupted or be incomplete and even though the name of your program appears well on the screen of the Oxydium (the name of a program is not the program itself).

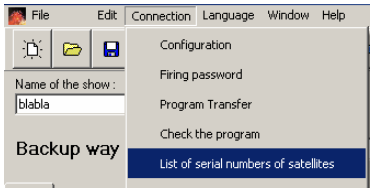


Warning : Always verify that the program has been correctly saved to the Oxydium's memory by performing a final test: launch the program directly on the Oxydium and ensure it runs properly to completion. Alternatively more faster, recall the program using the F3 "Prog" key and review the entire program Way after Way—checking the Way number, firing number, timings, and mode—by scrolling with the rotary dial (see page 9 of the previous chapter).

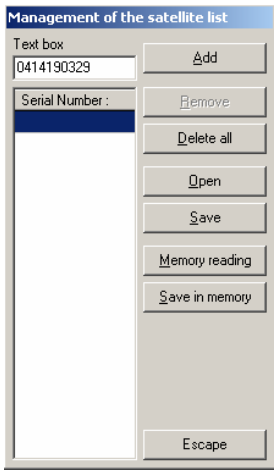
To remove an old program stored in the Oxydium console, there are two methods:
- Either overwrite it with a new program (even if it is empty),
- Either press F3 (Prog), select with the wheel the program, press F1 (Supp), and validate with F3 (Valid).

6/ MEMORIZATION OF SATELLITES IN THE OXYDIUM :

To perform the checks, an Oxydium can find only the satellites he knows. In order to do this, you must first enter in Oxydium the serial number of your(s) satellite(s) and accessories. This operation is to be performed only once, the Oxydium console saves these numbers in memory, even if it's off.



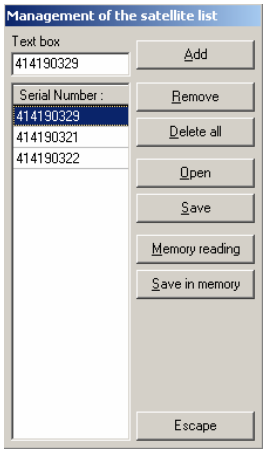
Connect the PC to the l'Oxydium with the USB cord. Start Oxydium Suite software, click on « Connection » and «List of serial numbers... ».



In the Text box, enter the serial number of your satellite. Then click « Add ». The serial number then appears in the frame under the Text box « Serial Number ». Repeat if you have other satellites. Once all the serial numbers of yours satellites appear within the framework, click "Save in memory".
The window below appears and the transfer of serial numbers to the memory of Oxydium begins. Wait the complete achievement : "Transfer successfully".

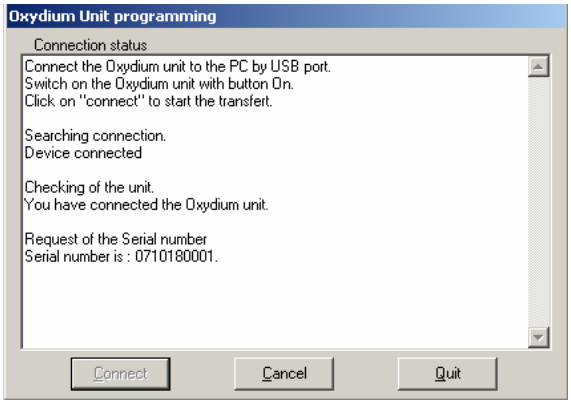
During checks from Oxydium console, the satellites will be displayed in their chronological order of memorization.

Note: If you wish to add a satellite to the existing list already stored in the Oxydium, while keeping the already stored satellites, do first a "Read Memory" so that the frame automatically fills with devices already stored, then enter the new serial number in the Text box and click "Add" (indeed, only that which is present in the frame is stored and overwrites the previous memory, so if there is that the only new satellite within this frame there will be only one satellite in the memory the Oxydium).



The Oxydium can store up to 100 serial numbers, and manage tests up to 10 satellites on each different Sixty (and up to 20 on the addressed sixty).

In order not to complicate the satellite control procedures, we advise you to leave in the memory of the Oxydium only the satellites actually used during your services. Indeed when a satellite is not found by the Oxydium (because for example not used on the fireworks), the Oxydium will still search for it for almost 5 seconds before declaring it absent (so for example if you you only have one satellite on a show, but your entire fleet of 25 satellites is stored in the Oxydium, the initial network learning procedure could then last nearly 2 minutes).



In addition, the software offers additional functions:

- « Delete all » : empties the frame serial number, and if you do again "Save in memory" removes satellites of the Oxydium memory.
- « Open » to access a file from your PC in which there is a serial numbers list
- « Save » to create a file in your PC in which is a list of serial numbers (we recommend also to create this file in order to easily recover your satellite lists)

7/ Special function : ADDRESSING OF THE OUTPUTS OF SATELLITES

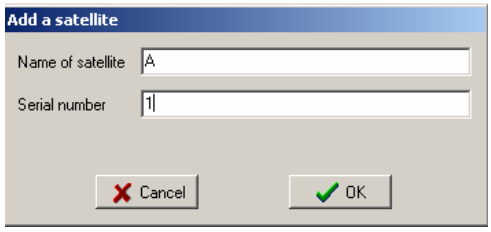
This function allows you to create new associations between the 60 physical outputs of a satellite and the Ways of your choice. An output can be assigned :

- For use with the remote control of the MAF 60, the ways 0 to179.
- For use with the Oxydium console, the ways 0 to 598.

To do this, and after your firing program (see page 3), it will require for each satellite take the following steps :

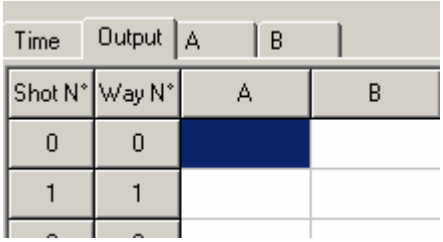
1. Addition of the satellite(s) MAF60.
2. Addressing of each outputs.
3. Programming of the satellite(s).

1 Addition of a satellite



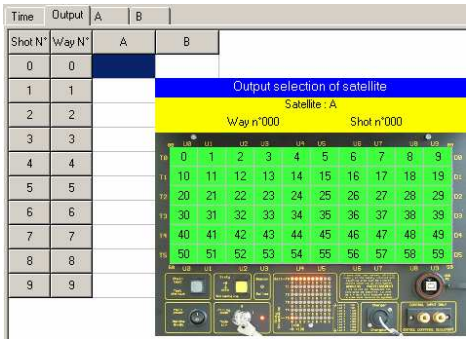
- Click on the icon + blue
- Fill the name and the serial number of the satellite.
- Click « Ok » to valid.
- To delete a satellite, click the icon x red

2 Adressing of the outputs



The principle is to choose a physical output and assign it to a Way.
On the table :

- Click on Output tab (near the Time tab)
- Select by clicking the output of the satellite to associate with the Way number. The cell displays in blue.
- Click again on the selected cell to display the view of satellite addressing.
- On this view, click the output to be associated with this Way.
  - The free outputs appear in green
  - The outputs already associated appear in red.
- If you do not want to address an output to a Way of a satellite, let this cell empty of the corresponding satellite.
- Repeat for each output to be addressed.



Nota : It is not possible to address the same Way several times on the same satellite.

For deleting the addressing of an output :

- Click on the associated cell in order to call the view of satellite. The selected output is displayed in blue.
- Click with the right mouse button to bring up the context menu.
- Select « No Output ».
- The addressing of the output disappears into the corresponding box of table.

3 Physical programming of satellite

Once the addressing for satellites ready, you must transfer them to each satellite. For that :

- Connect the satellite to address on your PC with the cable (as if you wanted to make him an update).
- Switch on the satellite (Main power 1, Firing mode key 0).
- Click on « Connection », then « Program satellite »
- Select the right port in « Serial port settings », then valid.
- Select the satellite with « Choice of satellite » menu, then click on « Writing lines ».
- Wait for the message of complete end of the transfer, then unplug the USB cord, switch off and switch on the satellite.
- Repeat for each satellite.

Nota: Reprogramming the addressing of a satellite only concerns the Ways assignments of the satellite. The timing of the shots is managed by the Oxydium.

Printing of the addressing table :

The Oxydium suite software offers several choices of impressions, depending on your method of work, corresponding to the various addressing tables.

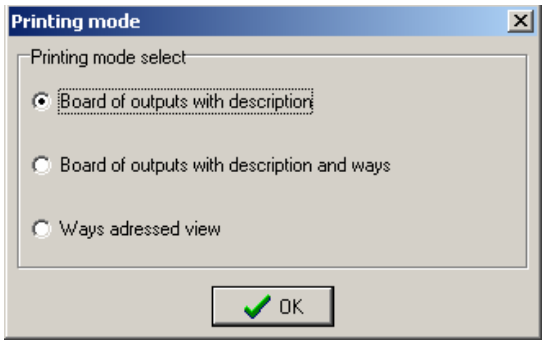
By selecting the "Outputs" tab, then click "File" and "Print", it is possible to print the general view of the outputs of all satellites based on shooting numbers, Ways of the Oxydium (or of the remote control).

Outputs of satellites according shots

Version :

Shot N°	Way N°	A	B
0	0	0	0
1	1	1	
2	2		1
3	3	2	
4	4		2
5	5	3	3
6	6	4	4
7	7	5	
8	8		5
9	9	6	6

By selecting the tab for each satellite (A and B in the example), and then still "File" and "Print", you can choose between 3 options :



Printing option 1 «Board of outputs with description» :

Outputs of the satellite "A"

Version :

Name of Satellite : A

Serial Number : 1

Device Model : Satellite de la MAF60 SII

Output n°	Description
1	Chandelle romaine cal 14 x 2
2	Chandelle romaine cal 20 x 2
3	Bombe cal 100
4	Bombe cal 150
5	Chandelle bombette ref 1228
6	Compact 19 coup cal 30
7	

This impression is especially intended to the installer. No notion of addressing appears : only the description of the line and of the physical output of the satellite on which connect it.

Printing option 2 « Board of outputs with description and Ways » :

Outputs of the satellite "A"

Version :

Name of Satellite : A

Serial Number : 1

Device Model : Satellite de la MAF60 SII

Output n°	Way n°	Description
0	0	Marron d'air
1	1	Chandelle romaine cal 14 x
2	3	Chandelle romaine cal 20 x
3	5	Bombe cal 100
4	6	Bombe cal 150
5	7	Chandelle bombette ref 122
6	9	Compact 19 coup cal 30

In addition to the description of the line and of the physical output of the satellite on which connect it, appears the correspondence between physical outputs / Ways.

Printing option 3 « Ways addressed view » :

To optimize this printing, select the print setting "landscape" format.

Outputs adressed of satellite "A"

Version :

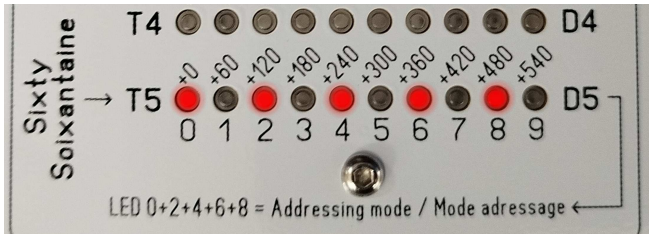
	U0	U1	U2	U3	U4	U5	U6	U7	U8	U9	
T0	0	1	3	5	6	7	9				D0
T1											D1
T2											D2
T3											D3
T4											D4
T5											D5
	U0	U1	U2	U3	U4	U5	U6	U7	U8	U9	

It is the top view of the satellite : 60 physical outputs are schematically showed, with the identification units / tens of the satellite. Within 60 cells corresponding to 60 physical outputs, appears the new assignment of each of them (the satellite A in our example above). The empty boxes are the outputs that have not been addressed (they will therefore not be activated in addressing mode because not correspond to any Way).

Selection of "Addressed" mode on satellite :

Even the satellites reprogrammed, they continue to operate normally on the first ten groups of sixty (LEDs 0 up to 9).
But after the tenth bloc of sixty, one more push on the button select of sixty is to active the mode "addressing" personalized, on your own renumbering of outputs.

The selection of this addressing mode on the satellite is visible by the display on the bottom LEDs line will light alternative one LED on two.



Additional information :

- It is not necessary to create a program for Oxydium to address the satellites outputs. In fact you can address the satellites with the aim of a show that 100% of the shots are in manual mode (or with the totally manual basic MAF60 remote). Just simply enter the number of shots of the show (up to 180 for the basic remote, or up to 600 for the Oxydium).

- By "Outputs" is still heard as "physical outputs', it means 60 pairs of two output terminals (red and black) present on a satellite, their geographical position obviously does not change, only their correspondence to the Ways of the Oxydium (or the MAF60 remote) are changed.

Conclusion :

As you can see, this new feature allows you to change the numbering of the 60 outputs of satellites, is very convenient from several satellites because it allows a recombination of the outputs allowing both simultaneous and alternate firing between different satellites. It also allows the reorganization of outputs within the case of the use of SAT2SAT mini sub-satellites.

It makes it totally useless the possibility of placing the Ways in the disorder when creating a program for Oxydium. Therefore if you opt for the use of personalized addressing of satellites, to avoid any risk of error, it's better to let the Ways in the chronological order of shots ("Time Management" tab, Shot number = Way number).

Example :

Suppose for a series of 10 shots we want to renumber the exits of two satellites : one satellite placed on the left of a field called A, and another satellite placed on the right of the field called B. We want to have that :

The Way 000 activate the outputs 000 on the both satellites in the same time
The Way 001 activate only the output 001 of the left satellite A
The Way 002 activate only the output 001 of the right satellite B
The Way 003 activate only the output 002 of the left satellite A
The Way 004 activate only the output 002 of the right satellite B
The Way 005 activate the outputs 003 on the both satellites in the same time
The Way 006 activate the outputs 004 on the both satellites in the same time
The Way 007 activate only the output 005 of the left satellite A
The Way 008 activate only the output 005 of the right satellite B
The Way 009 activate the outputs 006 on the both satellites in the same time

This corresponds to the table below :

WAYS (displayed on the Oxydium screen or on the remote MAF60)	PHYSICAL OUTPUTS SATELLITE A	PHYSICAL OUTPUTS SATELLITE B	DESCRIPTIONS OF THE CORRESPONDENCE OF THE PHYSICAL OUTPUTS
000	000	000	The outputs 000 of the satellites correspond to the Way 000
001	001	NONE	The output 001 of the satellite A corresponds to the Way 001
002	NONE	001	The output 001 of the satellite B corresponds to the Way 002
003	002	NONE	The output 002 of the satellite A corresponds to the Way 003
004	NONE	002	The output 002 of the satellite B corresponds to the Way 004
005	003	003	The outputs 003 of the satellites correspond to the Way 005
006	004	004	The outputs 004 of the satellites correspond to the Way 006
007	005	NONE	The output 005 of the satellite A corresponds to the Way 007
008	NONE	005	The output 005 of the satellite B corresponds to the Way 008
009	006	006	The outputs 006 of the satellites correspond to the Way 009

Launch the programme Oxydium suite (version 3.5 minimum) and create a simply serial of 10 manual shots by example (see page 3).

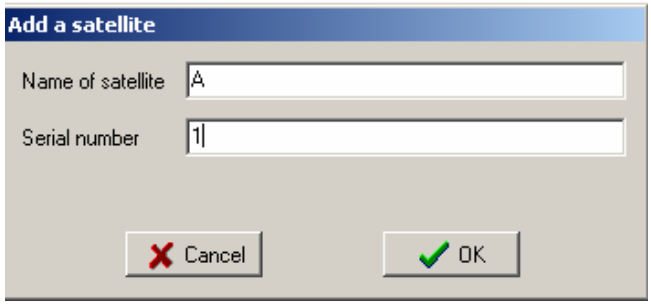
As explained above, it is not necessarily required to have established a program for Oxydium for addressing the satellites outputs. Just simply enter the number of shots of the show.

The Oxydium console (or the MAF60 remote) provides orders to the control of the Ways, regardless of the eventual addressing of the satellite that has been made because the addressing only affects satellites and only them.

Then add the two satellites A and B, for this click on the « + » blue :

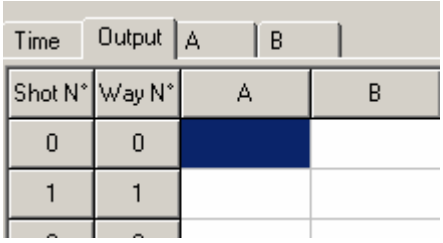
The box of satellite creation dialog it's opened. Enter the name of the first satellite (here A),
Then below its serial number* (here 1. To find the real serial number of your satellite, see page 16. It is of the type : 0412220241).
Click OK. The satellite A is now created.
Repeat for the second satellite : B.

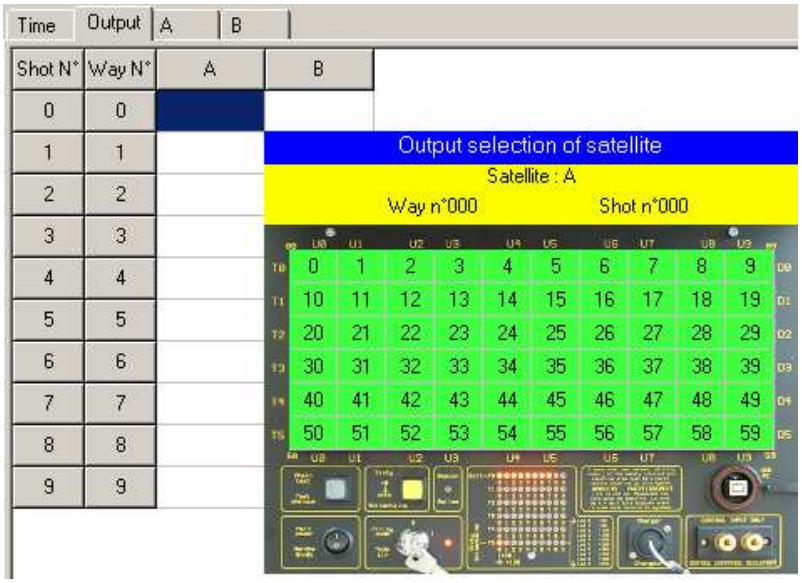
**Nota : the entering of the serial number is optional*



Now, we assign to each satellite the new numbering of its outputs.

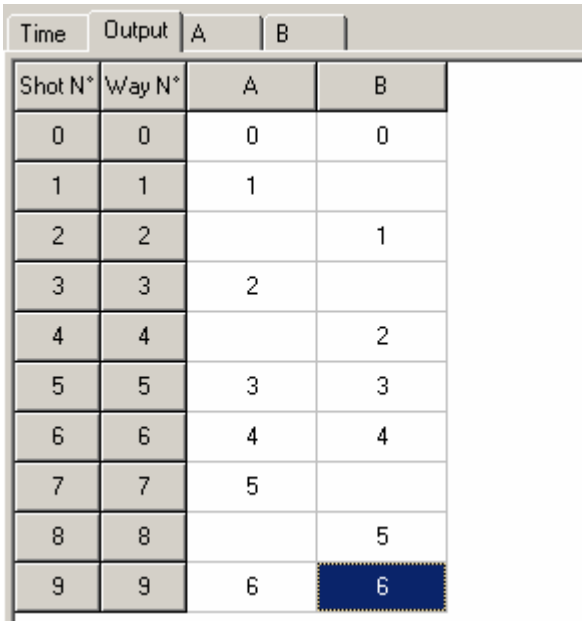
Click on the tab « Output » (near Time). This table appears :





We must tell which Ways will correspond to the outputs of the satellites A and B.
Click on the first blue cell of the column of the satellite A, the view of satellite is displayed. Click on the green cell of the output « 0 ». The blue cell is automatically filled with « 0 ». Repeat for the satellite B.

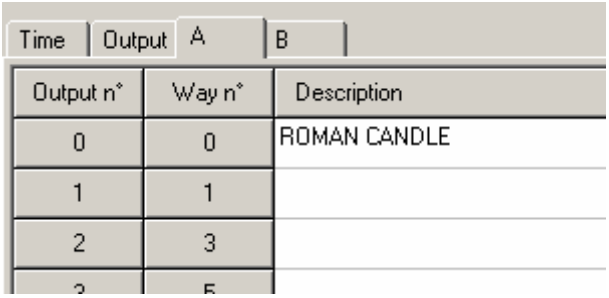
Finally to be the same with our example, the table must be filled as below :



Shot N°	Way N°	A	B
0	0	0	0
1	1	1	
2	2		1
3	3	2	
4	4		2
5	5	3	3
6	6	4	4
7	7	5	
8	8		5
9	9	6	6

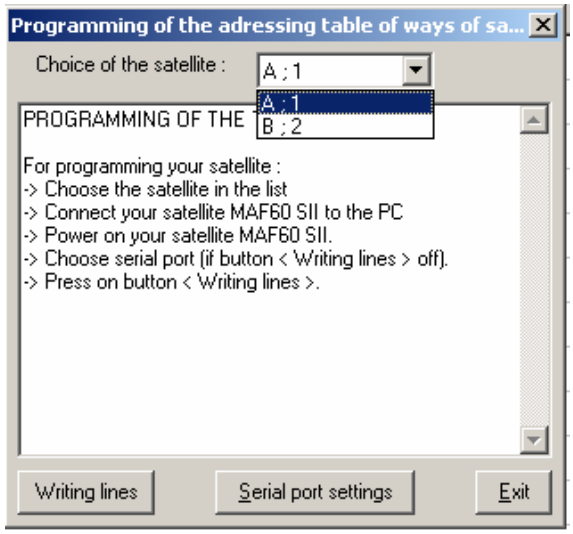
During the addressing, the outputs already addressed appear in red in the views of the satellites.

By clicking on the tabs of the satellites, you can view the new assignments of physical outputs of each of them, and also fill at this occasion the corresponding descriptions (parts list, sizes, colors ...).



You can save your personalized addressing by clicking "File" then "Save As."

Transfert of the addressing to the satellites



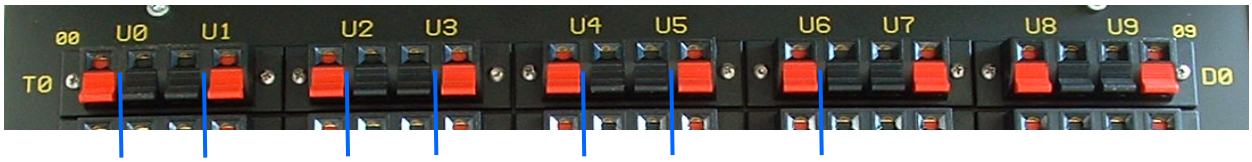
Once the addressing for satellites prepared, you must transfer them to each satellite. For that :
Connect the satellite to address on your PC with the cable (as if you wanted to make an update). Switch on the satellite (Main power 1, Firing mode key 0). Click on « Connection », then « Program satellite ». Select the right port in « Serial port settings », then valid.
Select the satellite with « Choice of satellite » menu *(in our example A)*, then click on « Writing lines ».
The first satellite download this new configuration. Wait for the message of complete end of the transfer. Switch off and switch on the satellite.

Repeat for the other(s) satellite(s), *(in our example B).*
Now, the outputs of your satellites are addressed.

Nota : you can perform tests to check your addressing by using output indicator lights ref. Visulamp.

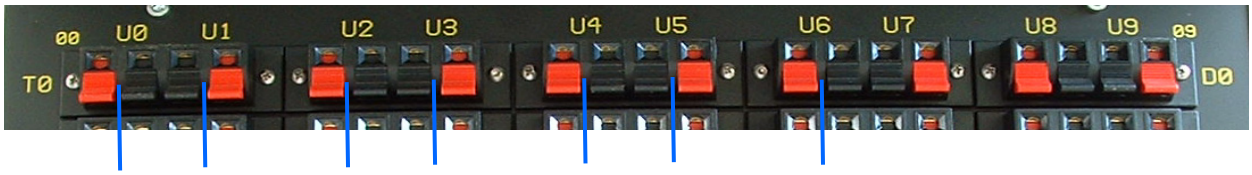
And once reprogrammed, the satellite outputs will correspond to the Ways :

Satellite A :



00 01 03 05 06 07 09

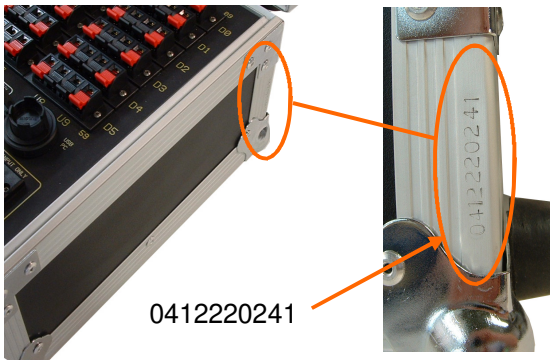
Satellite B :



00 02 04 05 06 08 09

Where to find the serial number of satellites ?
Serial numbers of satellites are engraved on the vertical angle for the bottom right side for the flight-case version, and for IP65 version case with a label in the lid.
This number of 10 digits always begins with "04" for a satellite (and "06" for a radio transmitter). If you can not read the number, it is possible to find it with a computer by several ways :

- by updating the device's firmware (even if it has already been made), at the time the update screen gives you the serial number.
- or in the utility file, available on the CD-ROM "Oxydium suite» (or our website), with small programs "LectureInfo ...". There is a program for each device that gives you the serial number.



Satellite version « Flight case » (2007 up to 2014)

Satellite version plastic case IP65 (since 2014)