CityShark II

Short Form User's Manual V808 – 2008 June 24th

1. Adjustment of the recording parameters

To start recording: push the **yellow** button then the **blue** button by keeping the **yellow** button pressed .
To change the current parameter to another: push the **yellow** button. The cursor flicks on the parameter.
To change the parameter's value: push the **blue** button. To have a fast run of the values, keep the **blue** button pressed.

```
    Clock Setting
Month = 07 Day  = 09
Hour  = 14 Minut= 12
 GPS Receiver = On
```

First screen of parameter setting

This screen offers the possibility to set date (month, day) and time (hour, minute) of starting. The parameter « GPS receiver » activates the GPS (ON/OFF).
To validate these parameters, push the **green** button « Start recording ».

```
GPS update      = Yes
Inputs nb (18)  = 18
Batt low level  = 11V
Batt voltage    = 12V
```

Second screen of parameter setting

The parameter « GPS update » allows the update of date and time of the station by GPS, (for better synchronisation, let GPS On and Update Yes even though no GPS reception). The next parameter set the number of inputs used (Inputs nb), The number doesn't be higher than channel number really running; « Batt low level » sets the level of detection for alarm battery; « Batt voltage » allows a forward reading of the battery voltage (Read only). Below 11V the internal battery could fai irreversibly.
In order to validate these parameters, push the **green** button « Start recording ».

```
Gain= 8192 Ovmx= 5%
Lgth= 12mn Rep=  0h
Sample Rate = 100 Hz
File Index = 001
```

Third screen of parameter setting

This screen sets the values of the amplification (Gain), the maximum rate of saturated samples (Ovmx), the recording time (Lgth), the period of automatic repetition of recording sequence (Rep) or continuous mode, the sample rate and the index of the first file (File Index).
In order to validate these parameters, push the **green** button « Start recording ».

*About these parameters, only the gain can be modified with **yellow** or **blue** buttons within each recording without to come back in this screen. The going beyond rate Ovmx is indicated by a beep. Hence, it's in charge of user to decide to stop or not the current recording.*

2. Recording

Set the gain with the **yellow** and blue button, respectively « Gain up» et « Gain down ».

Start recording by pushing the **green** button. « Start recording ». The corresponding light flicks during recording phase. The end of the recording is indicated by three series of three beeps. Hence, the following information is shown on the screen:

1st screen	then ..
Now recording 18 channels at 100 Hz	Gain= 8192 Ovf= 3.01% NextFil=07071424.002 Lgth= 12mn Rep= 0h Amp(18):▲▲▲▲▲▲▲▲

▲

« *Gain* » current gain (1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192).
« *Ovf* » rate of saturated samples from the recording in progress.
« *NextFil* » name of the next file, which is automatically updated with the time.
« *Lgth* » duration of recording.
« *Rep* » rate of repetition of recordings. If zero: no repetition. If CONTINUOUS, continuous mode is activated.
« *Amp(nn)* » level of the signal which is represented by 'black square' on the screen (as a bargraph).
(nn) means the numbers of real channels.

Stop in progress of the recording phase: push the **green** button « Start recording » during approximately 5 seconds. The file in progress of recording can be saved or not by the user only if the duration file is longer than one minute. If the file in progress of recording is erased, its index is saved for the next recording.

3. File encoded ASCII after the loading by ReadCity from the card flash.

```
Original file name: 01301530.011        Name of the original file
Transformed into: 080130_1530.011       Name of the file extracted by ReadCity
ReadCity version: 3.3                   Version of the extracting software
Station serial number: 045              Serial number of the station
Station software version: 0805          Version of the software on the station
Channel number: 18                      Number of recording channels (18 max)
Starting date: 30.01.2008               Starting date of the recording phase
Starting time: 15:30:52.859             Starting time of the recording phase
Ending date: 30.01.2008                 Ending of the recording phase
Ending time: 15:31:52.849               Ending time of the recording phase
Sample rate: 100 Hz                     Sample rate
Sample number: 6000                     Number of samples (duration * sample rate)
Recording duration: 1 mn                Recording duration
Conversion factor: 52428.8              Number of bits by volt with a unit gain
Gain: 16                                Gain
Dynamic range : 5 V                     Dynamic range (5V : +/-2,5V – 10V : +/-5V)
Clipped samples: 2.83%                  Saturating rate
Latitude : 45°14.629'N                  GPS Data
Longitude : 5°49.823'E                  GPS Data
Altitude : 314 m                        GPS Data
No Satellites : 5                       GPS Data
Maximum amplitude: 116997 / 131072      Max level stored / Max dynamic available
-116997  42510  13830                  Data : sample 1 printed in digital points
-114787  41050  11783                  Data : sample 2 printed in digital points
. . . . . .
```

These data are presented in the order ZNE separated with <TAB>. Refer to the using CDRom for the extraction phase of data (ReadCity).
The maximum dynamic is automatically limited following a dynamic reduction table relating to the sample frequency.

The « conversion factor » CF is the result of: CF = $(2^{\text{(max dynamic available)}}/\ \textbf{Dynamic range})$.
Ex. : @ 100 Hz & **5V** of Dynamic ranges, the Conversion Factor CF = $(2^{131072}/5)$ = **52428,8** bits/V. Given at gain = 1.
To get the electric level at the input of CityShark II, Vin = Data/(CF * Gain)
Ex : Data = **-116997** / Gain = **16** / CF = **52428.8**
Vin = -116997/(52428.8*16) = -139,471 mV

4. Wiring of the CityShark II's catchs:

Power Supplies. : **A** : 0 Volt — Base plate : Souriau 851 F : 85102E123S50
B : Charge Battery — Plug : Souriau 851 M : 85106EC123P50
C : Extern Battery 12 Volts

The charge of the battery is protected with a **4 amps** fuse**.** The condition of charge should never exceed **13,8 Volts/500mA.**
The external power supply is protected with a **2 amp** fuse. This voltage should never exceed **13 Volts.**

Sensors : **A** : Z + — **F** : E - — Base plate : Souriau 851 F : 85102E1210S50
B : Z - — **G** : +12 Volts (10mA) — Plug : Souriau 851 M : 85106EC1210P50
C : N + — **H** : Not connected
D : N - — **J** : Shielding (Internally connected to 0 Volt)
E : E + — **K** : 0 Volt