



Reference Guide

The JETLOG 24x7 PowerNapping Module

The **JETLOG 24x7 PowerNapping Module** for your Handspring™ Visor™ is a **Power Napping Enabler** suitable for anybody-anytime-everywhere

Maximum Fatigue Recovery in Minimum Time™



Product Compatibility:

- Visor
- Visor Deluxe
- Visor Neo
- Visor Platinum
- Visor Pro
- Visor Edge

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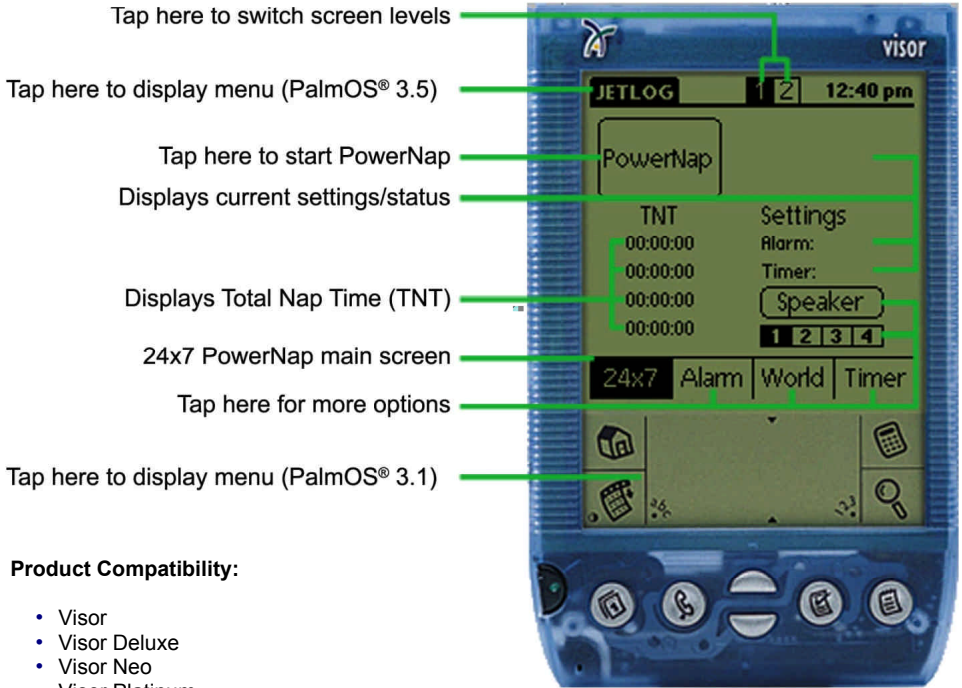
FC (C) compliant according to FCC Part 15 Sec. 109 • DIN EN 50081-1: March 1993 • DIN EN 50082-1 Nov. 1997 24x7 PowerNap is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

WARNING

- Read ENTIRE Reference Guide BEFORE use and check disclaimers
- This is an alarm for Power Napping NOT an alertness monitoring device
- ONLY use for resting
- If resting in operational settings, ENFORCE any PRECAUTIONS and procedures as instructed per respective guidelines
- NEVER operate the module when Visor™ is docked on cradle and connected with external power supply – potential electric shock hazard

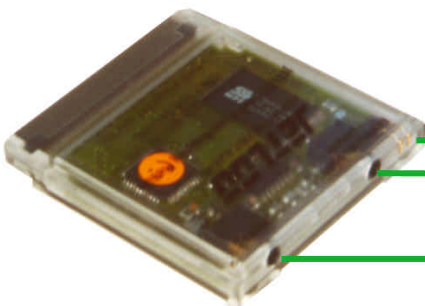
Content	<i>page</i>
1. Screen and Module Overview _____	1
2. Instant Power Nap _____	2
3. Screen and Main Functions _____	3
4. Default Settings and Operations _____	4
5. Options _____	5
6. Time Settings _____	5
7. Panels _____	6
8. Menu “Settings” _____	8
9. Menu “Options” _____	10
10. Napping Policy Background _____	12
11. FAQ _____	13
12. Warranty and Disclaimers _____	14

1. Screen and Module Overview



Product Compatibility:

- Visor
- Visor Deluxe
- Visor Neo
- Visor Platinum
- Visor Pro
- Visor Edge



Onboard touch sensor

External sensor (optional)

Headset

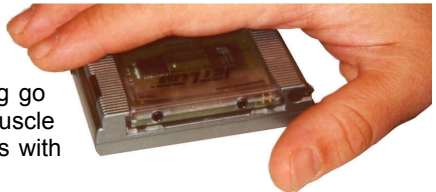
2. Instant Power Nap

1. Remove the Springboard™ slot protector from the back of your Visor™ and insert *The JETLOG 24x7 PowerNapping Module*
2. Application is ready if you read “JETLOG” in the upper left corner of your Visor™ screen
3. **Tap** “PowerNap” once to enter standby mode
4. Turn your Visor™ in a screen-down position, which enables you to repose your hand on its back while being able to touch the sensor with your right thumb
5. Touch sensor for the complete napping cycle – a loud beep confirms JETLOG® sequence initiation
6. Once you release thumb from sensor, alarm sounds off eight times for wakeup (volume increases reaching maximum in forth loop)
7. If you did not transit into deep sleep within 40-min. after sequence initiation, default timer will sound off after 40-min. (NASA nap)
8. You may reinitiate as many Power Nap cycles as you wish by just touching the sensor again – you will reenter the JETLOG® sequence at step 5. any time you touch sensor



Sensor Functionality

The sensor measures electric resistance. Our skin provides appropriate electric resistance to determine whether a skin contact with the sensor is established or not. As deep sleep and dreaming go along with a significant drop in our body's muscle tension, the sensor is able to prevent these events with the following setting:



- a body's extremity touches the sensor
- the touching extremity is in a position to slide off once muscle tension drops

The JETLOG 24x7 PowerNapping Module comes with an onboard touch sensor (the two gold stripes) designed to be touched with the right thumb while the respective hand reposes on the screen-down Visor™. NOTE: keep sensor clean, thumb dry, and do not polish sensor – dirt, humidity, and electrostatic charge affect sensor functionality!



Make sure to place your Visor™ in a relaxing position. We approved all operational environments where the Visor™ was placed on desks, sofas, and beds. If used in other settings, e.g., on the upper legs, your Visor™ may drop on the floor while napping. Although this is a very unlikely event we **STRONGLY RECOMMEND TO ALWAYS KEEP MINIMUM PROTECTION BY USING ALL VISOR™ REGULAR PLASTIC COVERS.** Power Nap operations will not be affected. NOTE: *JETLOG Corporation* is not liable for any damage resulting from Power Napping, including but not limited to dropping your Visor™ (see section 12.).

Event though minimal concentration is required to touch the sensor while going for a nap, this initial focus will make a neuronal transition from *cortex* into your *subconscious*, hence it will not stay in your focus for long – you will experience interesting nod-offs!!!

3. Screen and Main Functions

Default screen



The default screen enables you to set the module for a Power Nap by tapping on the “PowerNap” button.

You have a permanent overview of “TNT” (Total Nap Time), “Settings”, which include “Speaker”/“Headset”, “1234” sound control, as well as full menu control:

Screen levels “1” and “2” (top/center of screen)

“Alarm”

“World” (world times)

“Timer”

Standby screen



Once you activate the Power Nap cycle by tapping on “PowerNap” the message “Standby... first sensor touch initiates JETLOG sequence...” will be displayed.

It indicates that the module is in standby mode until you initiate the JETLOG® Power Nap sequence by touching the sensor.

You may now turn your Visor™ on its screen side and activate the JETLOG® sequence by touching the sensor.

Initiation screen



Once you touched the sensor to initiate the JETLOG® sequence the message “JETLOG sequence initiated...” will be displayed.

As you may not see this message while reposing your right hand on the backside of your Visor™, there will always sound off either an acoustic beep to confirm sequence initiation or, if headset is used (see section 5.), the voice message “JETLOG sequence initiated...” for confirmation. NOTE: if no confirmation sounds off check settings – check “Speaker/Headset” button first!

Termination screen



Upon JETLOG® cycle termination (no more touch with sensor) “JETLOG sequence terminated!” will be displayed.

An acoustic alarm will sound off with volume increasing until maximum is reached in fourth loop.

If “Speaker” is set (as in example) a loud “Emergency” sound is set as default. If “Headset” is set (see section 5.), a sound file will be played.

“TNT” displays your Total Nap Time in bold any time you nap in sensor mode – in our example, 32 minutes and 3 seconds.

As long as you reinitiate a JETLOG® sequence by touching the sensor another time, your TNT will be displayed in bold. Not more than four subsequent JETLOG® cycles will be displayed at once – first TNT will move out of display. TNTs will be reset to 00:00:00 upon tapping “Cut off” and reinitiating “PowerNap”.

4. Default Settings and Operations



To restore default settings simply **tap** menu “Options”, “Reset all Data” and confirm with “Yes”. Default settings:

- screens: always starts on 24x7, level 1, default layout
- sounds ascend, all alarms off, system alarm sound off ignored
- speaker set – default alarm, all world times set to local time
- Timer 1 set to 40-min (NASA Nap) countdown – if Power Nap is initiated, always starts upon sensor touch with auto reset to NASA Nap and restart upon every subsequent sensor touch

Wakeup Priority

The JETLOG 24x7 PowerNapping Module operates in the “whatever comes first mode” for the sensor and any alarm(s) or timer(s) set. Example: Suppose Timer 1 and Timer 2 are set to 40-min. (both counting down and started at same time) while JETLOG® sequence is activated (sensor mode). Under the circumstance that the JETLOG® sequence was reinitiated by touching the sensor again, Timer 1 will reset to 40-min. and restart while Timer 2 continues countdown independently of sensor functionality. In this case, Timer 2 will sound off BEFORE Timer 1. The same applies for Alarm settings. NOTE: any interfering system alarm on PalmOS® level will terminate a running JETLOG® sequence. Acknowledge the alarm event by tapping “Ok” and reinitiate sequence! Disable Alarm and Timer events by tapping anywhere on full screen “ALARM” message.

Default NASA Nap

If you don't wish to have a timer set as backup in sensor mode, disable Timer 1 by tapping “Clear” or set to zero manually (see section 6.). Only backup settings resulting in an alarm sound will be displayed in the 24x7 screen as “Settings”. For enhanced wakeup security, only PalmOS® independent sounds are available in 24x7 PowerNap. NOTE: as backup procedure in operational settings we strongly recommend keeping the 40-min. NASA Nap as an upper limit!

Changing Times

To change time of Alarm, Timer or World (time) **tap** directly on the upper half of a number to increase the value and on the lower to decrease. To change local time use the menu “Options” “Set Times” or preferences of your Visor™.

Speaker/Headset

Make sure to plug headset in its dedicated jack as indicated on label and in section 1. Wrong connection with external sensor jack will cause nonfunctional onboard touch sensor. NOTE: keep headset wire away from Visor™ screen while in use with 24x7 PowerNap – EMI may disturb headset speakers, i.e., smooth nod-off!

Low Battery Condition



In case of low battery “No safe PowerNap possible due to low battery condition” will be displayed. Even if your Visor™ may remain operational, 24x7 PowerNap cannot be activated for your own safety - please load/change batteries.

5. Options

Headset



Tap “Speaker” button to enable headsets. Internal speaker sounds will automatically be disabled while an appropriate sound file will be enabled. Plug headset in left jack labeled “Headset” located at the top of the inserted module (see section 1.).

If you initiate a napping sequence with headset settings, sensor touch will be confirmed via voice announcement “JETLOG sequence initiated...).

Switching back from “Headset” to “Speaker” (tap “Headset”) sets back internal speaker sound automatically.

Sounds



Selection (also see section 8.)

Define up to four sounds listed in “Sounds” of the “Settings” menu. Tap one of the 1234 buttons and pre-select sound out of drop down list for each of the 1234.

Your pre-selection is now available in all 1234 boxes of the 24x7 PowerNap screens. Uncheck default setting “Ascend” for maximum volume at first sound off.



Record

Select “Record” out of the drop down list. Once you tap “Rec” in the lower right corner of the Visor™ screen recording sequence of four seconds starts - tapping “Stop” ends recording before auto-stop after four seconds.

“Test” let’s you listen to actual recording - each recording deletes previous recording.

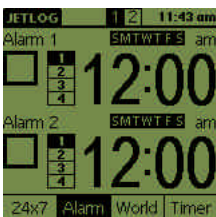


Modification

“Custom” enables you to set frequencies manually – play around as you like – “Test” let’s you listen to any sound you selected/created. Also refer to section 8.

6. Time Settings

Alarm



Tap

- directly on the numbers to change the time of alarm
 - box on the left to activate the alarm (checked if active)
 - on the 1234 to select sound
 - on inverted SMTWTFS to disable alarm on selected weekdays
 - on label "Alarm 1" to modify name of alarm
- NOTE: if an alarm is checked time settings cannot be changed – please uncheck first before setting alarm(s).

World



Tap directly on numbers to set world times

Use menu “Settings” “Worldtimes” to configure name, lock, etc...

Timer



Tap

- numbers to set timer
- up/down arrow to select direction (countdown/up)
- “Start” to start timer, “Stop” to stop timer
- “Reset” to reset to previously set time
- “Clear” to restore zero setting
- on label to change respective name

NOTE: disable Timer 1 by tapping “Clear” or set to zero manually -

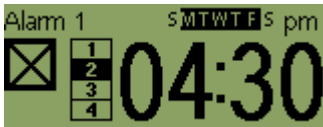
“NASA Nap” displays automatically whenever 40-min. countdown is set for Timer 1 – for an absolute Power Nap limitation via timing use Timer 2 with appropriate time setting.

Use menu “Settings” “Timers” to configure timers (mode, snooze, etc...)

7. Panels

The following panels are available in 24x7 PowerNap and can be set to be displayed on any page (except the 24x7 screen) in the “Layout” options:

Alarm



Display and set an alarm

Tap

- numbers to change time
- 1234 to select sound
- checkbox to activate/deactivate alarm
- inverted SMTWTFS to disable alarm on selected days
- label to change respective name

See “Alarms” settings for more information.

Timer



Display and set a timer

Tap

- numbers to change time
- label to change respective name
- mode to switch to Timer+ panel (default is “alarm”)

See “Timers” settings for more information.

Times less than 24 hrs are displayed hh:mm:ss - one day plus is displayed dd/hh:mm.

TimerC



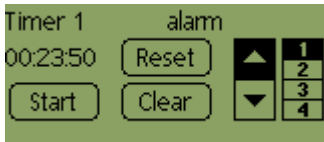
Display controls for a timer

See “Timers” settings for more information.

Tap

- “Reset” to restore previously set time
- “Clear” to set the timer to zero
- up/down arrow to select direction
- 1234 to select the sound
- “Start” to start the timer

Timer+



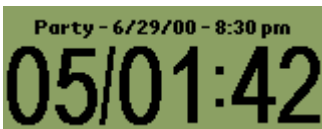
Display a timer with controls

See “Timers” settings for more information.

Tap

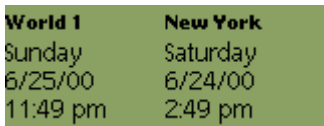
- label to change respective name
- current mode (right of label) to switch to Timer panel
- “Reset” to restore previously set time
- “Clear” to set timer to zero
- up/down arrow to select direction
- 1234 to select the sound
- “Start” to start the timer

TimerV



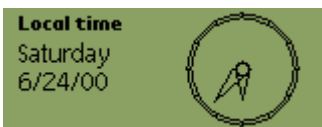
Display a timer with caption in bold - no user interaction - useful for date relative timers

2World



Display two world times with date - uses the format selected in the preferences

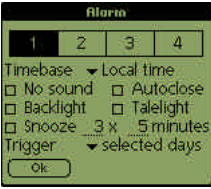
Analog



Display date information and an analog clock

8. Menu “Settings”

Alarms



Use 1234 buttons at the top to select the alarm you want to change. Each of the four alarms has several options:



Timebase

select a time-base for the alarm. If you select one of the world times, the name is displayed below the alarm checkbox

No sound

disable the alarm sound. You can turn off all sounds in 24x7 PowerNap using the alarm sound setting of the preferences application

Autoclose

closes the alarm screen without user interaction. Activate this if you want snooze alarms without tapping the screen

Backlight

flashes the backlight with the alarm sound and keeps it on

Talelight

activates a talelight device

Snooze

if Snooze is enabled the alarm will resound after the selected time. To stop snoozing close the screen by tapping on "Tap here to turn off snooze" as shown above or disable it in the application

Trigger

every day

alarm is triggered every day

selected days

alarm is triggered on the days selected with the letters above the time

once

the alarm is triggered only once and then disabled

chime

triggers alarm every x minutes (x = the time selected for alarm). If you set it to 01:00 you will have an alarm every full hour

World times



Use the L1234 buttons at the top to select the world time you want to change. Select L for the local time. Each of the five time zones has several options:

Name

change respective name of time zone

Lock

locks label and time on the time panel against accidental changes

Timezone

enter time zone of world time relative to local (system) time of your Visor™

Timers



Use the 1234 buttons at the top to select the timer you want to change. Each of the four timers has several options:

Mode

Simple

count up or down and stop when reaching zero

reset

like "Simple" but reset automatically

loop

when reaching zero autoreset and continue

alarm

when reaching zero trigger alarm

alarm & loop

trigger alarm, autoreset and continue "alarm & loop"

Should be considered experimental! 24x7 PowerNap has to be the active application while running in this mode. Snooze disables the alarm so you only get a loop mode.

go on

when reaching zero continue counting up

alarm & go on

trigger alarm and continue counting up

Date

if enabled the timer displays the time relative to the selected date and time. The direction is automatically set

No Sound

disable the alarm sound. You can turn off all sounds in 24x7 PowerNap using the alarm sound setting of the preferences application

Autoclose

closes the alarm screen without user interaction. Activate this if you want snooze alarms without tapping the screen

Backlight

flashes the backlight with the alarm sound and keeps it on

Talelight

activates a talelight device

Snooze

if Snooze is enabled the alarm will resound after the selected time. To stop snoozing close the screen by tapping on "Tap here to turn off snooze" or disable it in the application

Stay on

disables the auto off of the Visor™ while the timer is displayed. With regard to battery life, use this feature with care

Alternate

activates alternating timers "Chessclock". Timer 1+2 and 3+4 can work together. You have to activate it for both. Starting Timer 1 stops Timer 2 and starting Timer 2 stops Timer 1. Same for Timer 3 + 4. Best use with two Timer+ panels on one page

Multiply with

Money/Distance timer. Set the value to the amount per hour multiplied by 100. Examples:

\$1.00/hour = 100

\$35.30/hour = 3530

70 miles/hour = 7000

Sounds



Configure up to four sounds selectable by the alarms and timers (1234 buttons)

Select one of the 1234 and then select type out of the sound drop down. NOTE: selection depends on sound output mode – Speaker mode exclusively assigns “Emergency”, “Zirp”, and “Custom”. Headset mode exclusively assigns “Cock”, “Fifth”, “Halleluja”, “Title”, “Water”, and “Record”.



Options in custom:

Freq frequency to use
Time time to play the note
Ampli amplitude to play the note
Pause time to wait after playing the note

These four notes are repeated as selected. Use “Test” button to listen to selected sound.

9. Menu “Options”

Preferences



Change global settings of 24x7 PowerNap

Ignore system alarm sound off

per default, 24x7 PowerNap overrides the Visor™ setting “alarm sound off”. Uncheck this option to disable the alarm sound if alarm sound of the system preferences of the Visor™ is set off disables quick toggle between Timer and Timer+ panels

Lock timer layout

Always start on first page

per default, 24x7 PowerNap is set to be always first page (24x7) after start. Uncheck this option to disable 24x7 to be the first screen at startup

Layout



Change the layout of 24x7 PowerNap (except 24x7 screen)

Each page has an edit field for the name and two rows of controls. One for the upper panel and one for the lower:

Tap the first popup and select the panel type to display

Tap the second popup to select the number of time/alarm/timer

There are five times (Local and Worldtime 1-4), four alarms as well as four timers.

For some panels there is an additional "Sec." and/or "24h" checkbox. The "Sec." checkbox enables or disables the seconds display for the Time and Analog panel. The "24h" checkbox switches between 24h and 12h (am/pm) for the Time and Alarm panel.

Theme & Color



Change the color settings and theme

Only displayed on devices running PalmOS® 3.5 or later. **Tap** on the colored squares to change the color of text and background. "Theme" box displays all installed themes. Select one by tapping on it. A theme may contain background images or a font. Check out www.gacel.de/bigclock/theme for more details and downloads.

Set time



Change the system time of your Visor™

Change time by tapping on the numbers. Acknowledge the new time by tapping "Ok". This might take some time (depending on how many installed applications).

If "Update world times" is checked, world time zones are updated so that they still display the same time as before the time change.

This option allows you to change the local time without affecting other times. If you are changing local time (minutes/seconds) keep this option off. Nevertheless, check it if you are changing the time zone of your Visor™.

10. Napping Policy Background

Fatigue

The term "fatigue" defines the decreased capability of doing physical or mental work, or the subjective state in which one can no longer perform a task effectively. If fatigue increases, performance becomes more variable and decisions less reliable:

- Reduced speed of physical reaction time and speed of thought processes
- Increased tendency to make mental errors and flawed judgments
- Increased false responding, or responding when a stimulus isn't present
- Increased memory errors and lapses
- Reduced vigilance and motivation

NASA Nap

These significant damaging effects of fatigue prompted the US Congress in 1980 to request NASA's Ames Research Center to study fatigue thus leading to the creation of "The NASA Ames Fatigue/Jet Lag Program". In 1991, the name of the program was changed to the "Fatigue Countermeasures Program" in order to provide a greater emphasis on the development and evaluation of fatigue in general.

As a result of NASA Ames' Fatigue Countermeasure Program, during which pilots were provided with a 40-min., preplanned, in-flight nap opportunity during cruise, the resting pilots maintained almost consistent performance night and day, at the end of flights, and after multiple flight legs.

In addition to minimize the potential negative effects of napping the limitation to 40-min. was designed for transparent implementation into operational environments.

Negative Effects of Naps

The most significant negative effect of napping is *Sleep Inertia*. In a generic sense, it includes the grogginess, disorientation, sleepiness, headaches, and bad mood that accompany awakening out of SWS (Slow Wave Sleep - deep sleep) as well as the sweating and visual hallucinations from awakening out of intense dreaming (REM - Rapid Eye Movement). *Sleep Inertia* is associated with an initial performance decrement immediately upon awakening out of SWS or REM.

The severity of these effects is mainly related to the duration of SWS, intensity of REM and circadian time (internal body clock) of the sleep.

The occurrence of SWS and REM is related to the circadian rhythm. Any circadian disruption, which is caused by e.g., multiple time-zone crossing or irregular duty hours, results in an uncertainty when SWS and REM will occur, and therefore increases the risk of experiencing *Sleep Inertia*.

Since the "NASA-nap" is only a timed nap, NASA's operational validations resulted in peaks of up to 22% of pilots experiencing SWS.

Another negative consequence of a Power Nap is the effect on subsequent sleep episodes: While a nap will improve waking alertness and performance, it might increase subsequent sleep loss by disrupting later sleep periods if it is not properly timed to exclude SWS.

Please visit www.jetlog24x7.com for more information!!!

11. FAQ

1) What is the onboard touch sensor for?

The sensor prevents deep sleep (SWS) and dreaming (REM) to occur.

2) What is the onboard touch sensor's accuracy?

If properly applied as set out in this Reference Guide, accuracy is extremely high due to JETLOG[®]'s patented analog method converted into a simple logic of two notions "true"/"false", i.e., "yes"/"no", "zero"/"one". As of today, no pathologic circumstance prevents our body's muscle tension to drop when SWS or REM occur.

3) Is there a way to provide a permanent surface sensor such as a skin electrode?

Yes. However, principal problems are faced: (1) a digital detection algorithm is needed for continuous analysis of relevant parameters. Accuracy of detecting and providing real time alarm is about 70% only. A simply timed NASA Nap of 40-min. duration is already 8% better than any of the current digital sleep staging algorithms for SWS prevention. (2) clinical standards rely on up to 36 channels to monitor physiological functions with the sleeping individual connected to 36+ electric wires...

4) What happens if I release the sensor before falling asleep?

Touch it again - JETLOG[®] sequence will be reinitiated as upon first sensor touch.

5) What if I don't get any sleep at all?

Most likely, you were not really exhausted - however, even a couple relaxed minutes with closed eyes gets you going again pretty well – after all, it's more about *driving* than *surviving*!!!

6) How can I be sure to wake up?

We drove our efforts to the ultimate extend to assure awakening. In addition to extra loud internal speaker sounds, we provide you with headsets to be used as direct interface with your ears, hence, minimizing external noise interference.

7) Alarm sound not loud enough...

Three ways for troubleshooting: Firstly, try headsets with respective sounds. Secondly, uncheck "Ascend" in Menu "Settings" "Sound". Thirdly, try playing with the custom sound configuration.

8) Can I use PalmOS[®] sounds with the headsets?

No!!! 24x7 PowerNap uses its own speaker/headset sounds.

9) What is Total Napping Time (TNT) for?

TNT provides you with a feedback about your Power Napping times. It has no functionality beyond this purpose.

10) Do I have to use headsets?

No!!! Per default, you may use the internal speaker sounds without headsets.

11) What is the external sensor? When and where can I get it?

The external sensor is designed to follow up with an option to the current onboard sensor. We will announce the release as appropriate.

12) Does the module use my Visor[™] batteries?

Yes!!! In standby mode ca. 0.03mA and operational ca. 20mA.

13) Why is the Timer 1 preset to 40-min.? Why is it labeled "NASA Nap"?

Timer 1 incorporates the NASA Napping Policy which provides a solid backup to the sensor mode as well as a reasonable upper limit for operational settings. However, feel free to disable Timer 1 or to set any other desired upper limit for backup.

14) When I get an alarm the screen "flashes" short after the sound. Is this a bug?

No!!! It is required for the "Always sound alarm" feature. The alarm is displayed two times. First with sound before any other displayed alarm. After that it disappears and is displayed again if there is nothing else preventing it.

15) What is this "talelight" option and the Chime feature?

A talelight is a little peace of hardware that attaches to the serial port of Palm[™]s and has a small light. There are other types that vibrate or have a very loud sound. Check www.members.aol.com/talestuff for more info and Visor[™] compatibility. If the chime feature is used the Visor[™] stays on for the "auto-off" duration. It is not good for the batteries.

12. Warranty and Disclaimers

LIMITED WARRANTY: JETLOG Corporation ("JETLOG") warrants to the original end user ("Customer") that under normal and intended use *this JETLOG 24x7 PowerNapping Module* will be free from defects in workmanship and materials for a period of one (1) year after the date of original purchase.

JETLOG's sole obligation under this Limited Warranty shall be, at JETLOG's discretion, to replace the defective product with a comparable product, repair the product, or if neither repair nor replacement is reasonably available, to refund to Customer the purchase price paid for the product. JETLOG warrants any replaced or repaired product for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer. All products that are replaced become the property of JETLOG.

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