



Advanced Manual

for new generation of
BaseStation b5
and
GPS-ACC-
Logger-Tags



*Photo of the new
basestation*

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Advanced Manual

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1 Advanced Basestation Menu

If you are interested in the advanced basestation menu and submenus, you should already have a good theoretical and practical knowledge of the system. The *Advanced Basestation Menu* can be accessed over the normal *basestation menu* and offers following options:

```
ADVANCED BASEST.MENU
a.EXIT
b.RECV LRANGE BCAST
c.LIST IDS OF RUNNING TAGS WITHIN RANGE
d.MENU ON ANIMAL
e.SETUP BASE STATION
f.special (protected)
g.special2 (protected)
```

The options “special” and “special2” are for factory testing and not intended for customers. For this reason they are protected by an access code. The other options are explained in following sections.

1.1 RECV LRANGE BCAST

This option is experimental and is probably useless for most customers. This option is intended for the reception of longrange broadcast messages. A longrange broadcast message is a small text message (typicall with GPS coordinates of last GPS fix), transmitted with low data rate. The data rate is low, because the intention is to improve maximum range. It is difficult to estimate the improvement and up to now we don't have practical experience with this option. If you want to test this feature you have to enable longrange broadcast messages on the animal datalogger tag.

1.2 LIST IDS OF RUNNING TAGS WITHIN RANGE

Imagine if you see one of your animals with an e-obs tag and that you don't know which individual animal it is, maybe because the identification mark is hidden behind a branch. But you want to find it out. For this case you can use this option. Connect the antenna, arrange the antenna (point it to the animal if it is a directional Yagi antenna) and choose this option and wait several minutes until you received the e-obs tag id numbers of all animals within range in that direction. The ids are printed on the display or in your terminal program on your computer. Additionally the access keys of the found e-obs tags are printed.

This option will only find running e-obs tags. Further if you could just complete a data download, the corresponding e-obs tag will not send any radio packets during the time defined with option `radio_longdelay` in the tag setup menu, so that during that time you cannot find out the e-obs tag id. But probably you noticed the id already during the data download.

You still have the problem, that you don't know which id belongs to which animal.

1.3 MENU ON ANIMAL

This option can be used to make changings of the settings when the e-obs data logger tag is already on the animal and when you cannot get physical access to it. Normally it would be necessary to swipe a magnet over the e-obs tag if you want to get access to the menu of the e-obs tag. For example you can see your bird sitting on a tree, but you cannot catch the bird or you don't want to catch the bird. In this case you can use this option “MENU ON ANIMAL”.

Warning: Don't try to make changes of the settings in hurry. Otherwise the probability is high that you make something wrong. It is really important, that you are well prepared and that you make changes quickly (before the animal flees), but without hurry. You also should have enough time to check the changes. Only when you are sure, you should exit & save the tag setup menu.

If the animal flees out of radio link range before you can exit & save the new settings, the e-obs tag will NOT be screwed up and it will reliably continue with the old settings.

You need a computer (typically a notebook, because you probably are in the field) connected over USB with the basestation if you want to access “MENU ON ANIMAL”. Further you must know the e-obs tag id of the animal. If you don't know the id, please read “1.2 LIST IDS OF RUNNING TAGS WITHIN RANGE“ on page 4 how to find out the id.

Follow the following steps:

1. Switch off basestation if it is turned on.
2. Connect basestation to your computer by USB.
3. Start your terminal-program (like Hyperterminal)
4. Go to “BASESTATION MENU”
5. Go to “ADVANCED BASEST.MENU”
6. Choose option “MENU ON ANIMAL”
7. Enter the id of the e-obs tag belonging to the corresponding animal.
8. Wait until the e-obs tag connects to the basestation.
9. Then you arrive in a small version of the tag menu: You only have two options: “START AUTOMODE” or “SETUP TAG”. You cannot turn off the tag. You want to choose “SETUP TAG”.
10. Then quickly, but without hurry, make your changes in the tag setup menu.
11. Don't forget to exit & save the setup menu.
12. Finally choose “START AUTOMODE”. Then the e-obs tag disconnects and continuous operation according to the new settings.

Don't worry if the animal goes or flies out of range before you can choose “START AUTOMODE”, because this will have the same effect as “START AUTOMODE”.

1.4 SETUP BASE STATION

Most customers don't need this option. Only experienced customers should use it. If you choose this option, you will arrive in the setup menu of the basestation. Don't mix this up with the setup menu of the e-obs animal tags. With the setup menu of the animal tags, you can change settings of the animal tags. Here instead, you can change settings of the basestation. The basestation setup menu looks like the following (depending on the version, your menu may look a little different):

```

BASESTATION SETUP MENU:
a.EXIT & SAVE NEW BASESTATION SETUP
1.DISPLAY LIGHT:NO
2.DOWNLOAD BEEPER:NO
3.ON-OFF BEEPER:YES
EXPERT SETTINGS: DON'T CHANGE FOLLOWING OPTIONS
UNLESS YOU REALLY UNDERSTAND WHAT YOU DO!
4.SECRET KEY 13474
5.ACCESS KEY 12
6.DISPLAY TIME FOR DOWNLOAD COMPLETE MESSAGE: 5s
7.AUTO COUNTDOWN:NO
8.DISABLE TURN-ON-QUESTION:NO

```

DISPLAY LIGHT

You can switch on the display light, if you want to operate the basestation in the dark. But you should know, that the display light needs a lot of battery power: up to 45 Milliampere current. This means that without the display light, the basestation needs only 69mA (when it is waiting for a data download), and with display light the current consumption rises to 114mA. This again can mean that the lifetime of the batteries can be reduced by 40%. Choose this option and answer the question with 'y' if you want to enable the display light.

DOWNLOAD BEEPER

If you want to get an acoustical signal (a short beep) if a download starts, you can enable this here by choosing this option and answering the question with 'y'. By default, this option is disabled, because the acoustical signal could alarm the animals.

ON-OFF BEEPER

If you want to get an acoustical signal (a short beep) if you switch the basestation on or off, you can enable this here by choosing this option and answering the question with 'y'. By default, this option is already enabled. This signal is important, because if you put the basestation in your bag or rucksack, it can happen that other contents of your bag trigger the on-off button so that the basestation is unintentionally switched on or off. With the beeper, you can hear this and then you can check your bag and the basestation.

SECRET KEY and ACCESS KEY

These two options have a more complicated function than the others. You really shouldn't change them unless you really have a complete understanding. There are two keys, which are important for the radio link between the animal tags and the basestation: The secret key and the access key. These keys are needed to prevent unauthorized access to your animal tags by other people who also have an e-obs basestation. Imagine an island with two different researchers who both purchased e-obs equipment. Or imagine a bird who can fly a long distance and finally arrives at the basestation of a different e-obs customer. You don't want that other e-obs customers download data from your animal tags or that they can change the settings of your animal tags. For these reasons we implemented these keys. Every customer gets different keys. The secret key is protected, so that nobody can find it out. This secret key should be different for every competing group of scientists and should be kept secret. The access key instead is not secret within a group of scientists having the same secret key. This means that everybody who knows the secret key can find out the access key by using option LIST IDS OF TAGS RUNNING WITHIN RANGE. The intention of the access key is to have a means of separating different projects of a group of scientists who work together, so that everybody can download data independent from the others. In other words: With the access key you can avoid mixing the data from different projects in a single logger.bin file, but you still have the possibility to collaborate by sharing basestations (by reprogramming the access key) etc. As you can find out the access key, it's not a big problem if you forgot it. For this reason it is recommended to only change the access key. NEVER change the secret key. We take care of the secret key for you. Every different customer gets a different secret key. Please ask e-obs for more information, if required.

DISPLAY TIME FOR DOWNLOAD COMPLETE MESSAGE

You know that, after a complete or after an incomplete download, the basestation tells you about this download on its display. This message is shown for a certain amount of time on the display. During this period of time, the basestation cannot do anything else (like a new download). With this option you can change this period of time. By default, it is 5 seconds.

AUTO COUNTDOWN

If you set this to 'y', then the basestation will start a countdown after it is switched on. If this countdown isn't interrupted by pressing a button, the basestation will start the BASESTATION DOWNLOADMODE (if a correctly formatted SDCard is inserted in the memory slot). This means that in this case it is not necessary anymore to manually choose option BASESTATION DOWNLOADMODE. This is only interesting for customers who use an automatically operating basestation with external power connection with external power supply in remote areas, without human interaction. Then the basestation can start the download mode by itself when power becomes available¹.

DISABLE TURN-ON-QUESTION

This option is only interesting for customers who use an automatically operating basestation with external power connection with external power supply in remote areas, without human interaction. If you set this to 'y', then the basestation can start without human interaction when power becomes available². This means that it is not necessary to confirm this with the '+'-key and the 'RETURN'-key. By default, this option is set to 'n'.

¹Warning: You know, that the power never should be interrupted in the middle of a data download. Otherwise you would loose data.

²Warning: You know, that the power never should be interrupted in the middle of a data download. Otherwise you would loose data.

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