BATmode 2S / 2S+

QUICKSTART GUIDE
Set Up and First Start Up

Version: 03/21

SAFETY INSTRUCTIONS

Please read these safety instructions carefully before startup your BATmode system!

- Only use power supplies authorized by bat bioacousticcechnology.

- Avoid excessive mechanic strain on the BATmode system, especially on plugs and connectors if cables are connected to the BATmode or the antenna and microphone disc. Strong vibrations, shaking or dropping may damage system parts.

- Ensure a safe and stable mounting of the BATmode and the corresponding discs. *Dropping can harm persons, property or the BATmode system.*

- Ensure that nobody can stumble on installed and connected wires. *Stumbling can harm persons and damage system parts.*

- Only use accessories supplied or authorized by bat bioacousticcechnology. *The use of unauthorized accessories may damage the device.*

- Please contact our support if the BATmode system shows any damage or does not work properly. Do not open system parts and try to repair damage by yourself or through unauthorized personnel. This will cause the loss of warranty.

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18. HDMI Port
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- Front View BATmode 2S/2S+ -
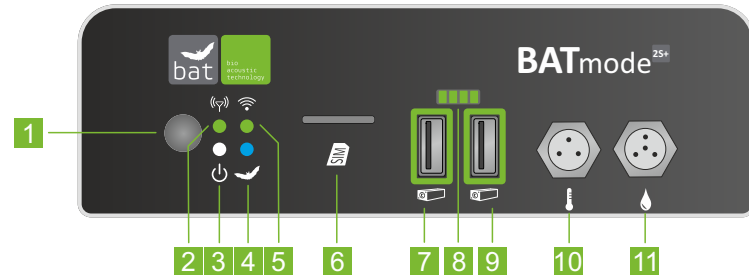
- Back View BATmode 2S/2S+ -
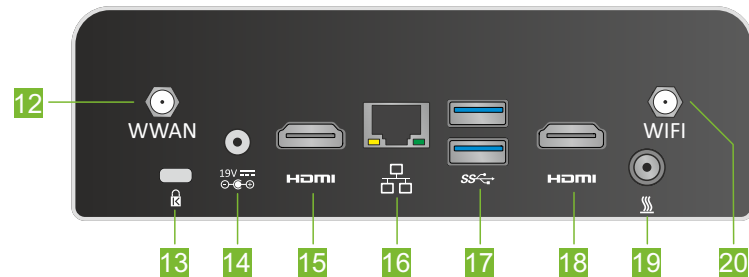
LED Status Indicators

How to interpret the LED status indicators of your BATmode 2S/2S+ correctly:

Power LED (white)

On	Device on
Off	Device off

Status LED (blue-red)

Off	BATcontrol not started
Blue	Monitoring stopped, BATcontrol on
Blue blinking	Monitoring started
Blue-red blinking	Monitoring Start not possible - Please control calibration and UltraSoundGates

WIFI Hotspot LED (green-red)

Green	WIFI-Hotspot on
Off	WIFI-Hotspot off
Red	Error - Please, check WIFI settings in Windows

Mobile Service LED (green)

On	Mobile connection connected
Single blinking	Registered to mobile network
Double blinking	SIM locked, SIM not recognized, no mobile service connection

## UltraSoundGates Status LEDs (green)

Number of illuminated LEDs = Number of available microphone channels

Antenna Disc and Magnetic Base Antenna

1   WIFI Antenna Connector
2   Temperature Sensor Connector
3   Cellular Antenna Connector

The Antenna Disc contains a directional WIFI antenna. Since the direction of the strongest signal is directed into the paper plane, the disc has to be installed with the illustrated connector side turned away from a potential connection partner.

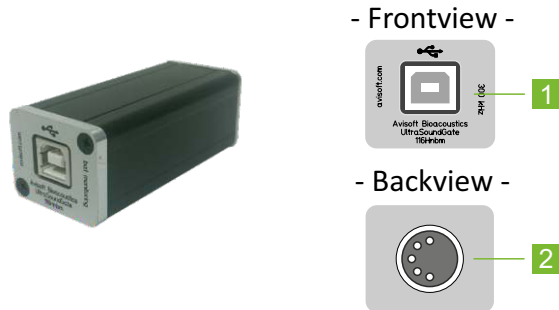- Antenna Disc (only BATmode 2S+) -
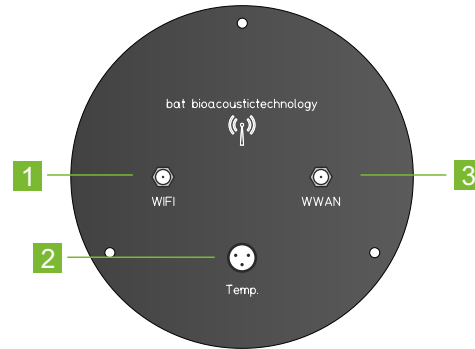
4   Cellular Antenna Connector

- Magnetic Base Antenna (only BATmode 2S) -
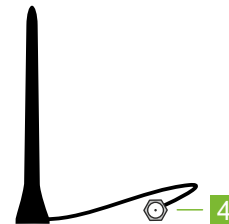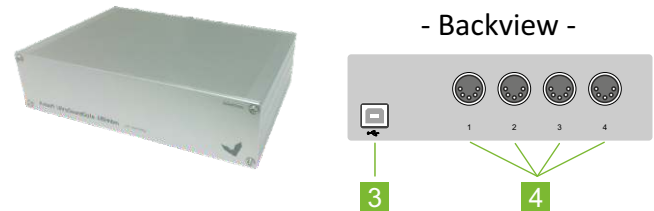
UltraSoundGates 116Hnbm and 416Hnbm

UltraSoundGate 116Hnbm

- Frontview -

- Backview -

UltraSoundGate 416Hnbm

- Backview -

1 + 3   USB-2.0 Interface

2 + 4   Microphone XLR Connector

BATmode 2S/2S+ Systems can use up to four microphones simultaneously.

You can use an UltraSoundGate 116Hnbm for each microphone or one UltraSoundGate 416Hnbm for up to four microphones.

Microphones

Microphone Disc GM50

- Front View -
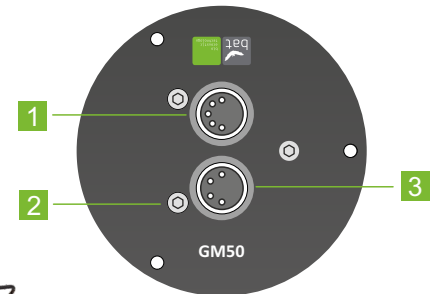
1 Microphone XLR Connector (UltraSoundGate)

2 Screws for removing the mounting plate

3 Reference Signal Speaker Connector (UltraSoundGate)

4 Microphone Capsule

5 Reference Signal Speaker

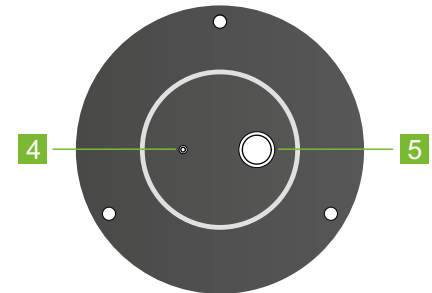The Microphone Disc GM50 can either be used with the enclosed mounting plate or with an optional tripod.

To connect the microphone and the reference signal speaker of the GM50 please use the Y-XLR microphone cable.

- Back View -

Be careful not to touch the microphone capsule and to protect it from moisture!

Microphone Disc GM90

1. Microphone XLR Connector (UltraSoundGate)
2. Heating Connector
3. Windscreen made of foam
4. Microphone Capsule
5. Reference Signal Speaker

Do not remove the windscreen foam,
as this has an essential influence on the
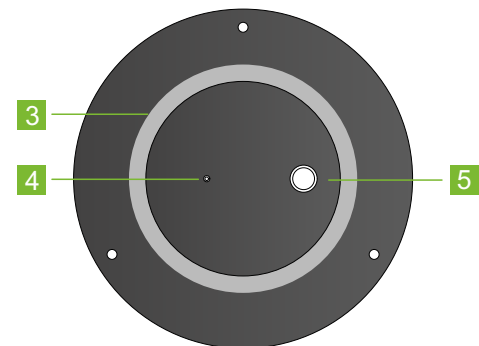calibration of your microphone disc!

To mount the GM90 in the floor of the nacelle a hole with
a diameter of 100 - 105mm is required.

Be careful not to touch the microphone capsule and to
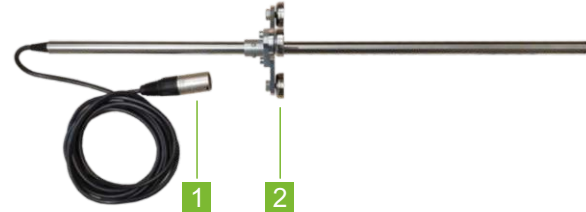protect it from moisture!

- Front View -

- Back View -

Microphones

Tower Microphone TM10

1 Microphone XLR Connector (UltraSoundGate)
2 Optionally available movable tripod for tower wall mounting
3 Microphone Capsule

For mounting in non-magnetic walls,
please stick the enclosed adhesive pads on the
feet of the tripod.

- Frontview -

The mounting hole for the TM10 must have a
minimum diameter of 14mm, as well as a maximum
depth of 460mm.

Be careful not to touch the microphone capsule and to
protect it from moisture!

Tower Microphone TM20

1   Optionally available mounting rod

2   Microphone XLR Connector (UltraSoundGate)

3   Optionally available movable tripod for tower wall mounting

4   Reference Signal Speaker

5   Microphone Capsule

For mounting in non-magnetic walls, please stick the enclosed adhesive pads on the feet of the tripod.

- Frontview -

The mounting hole for the TM20 must have a minimum diameter of 22mm, as well as a maximum depth of 450mm.

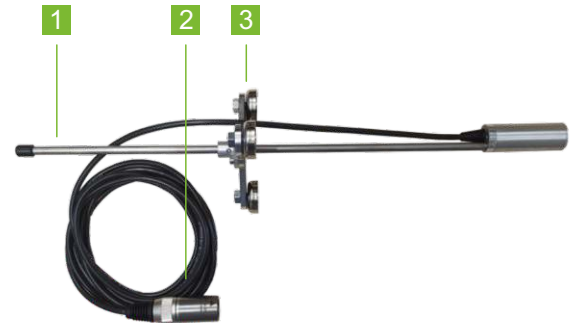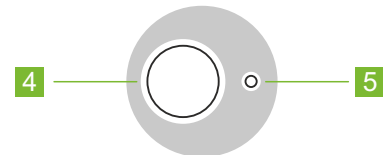Be careful not to touch the microphone capsule and to protect it from moisture!
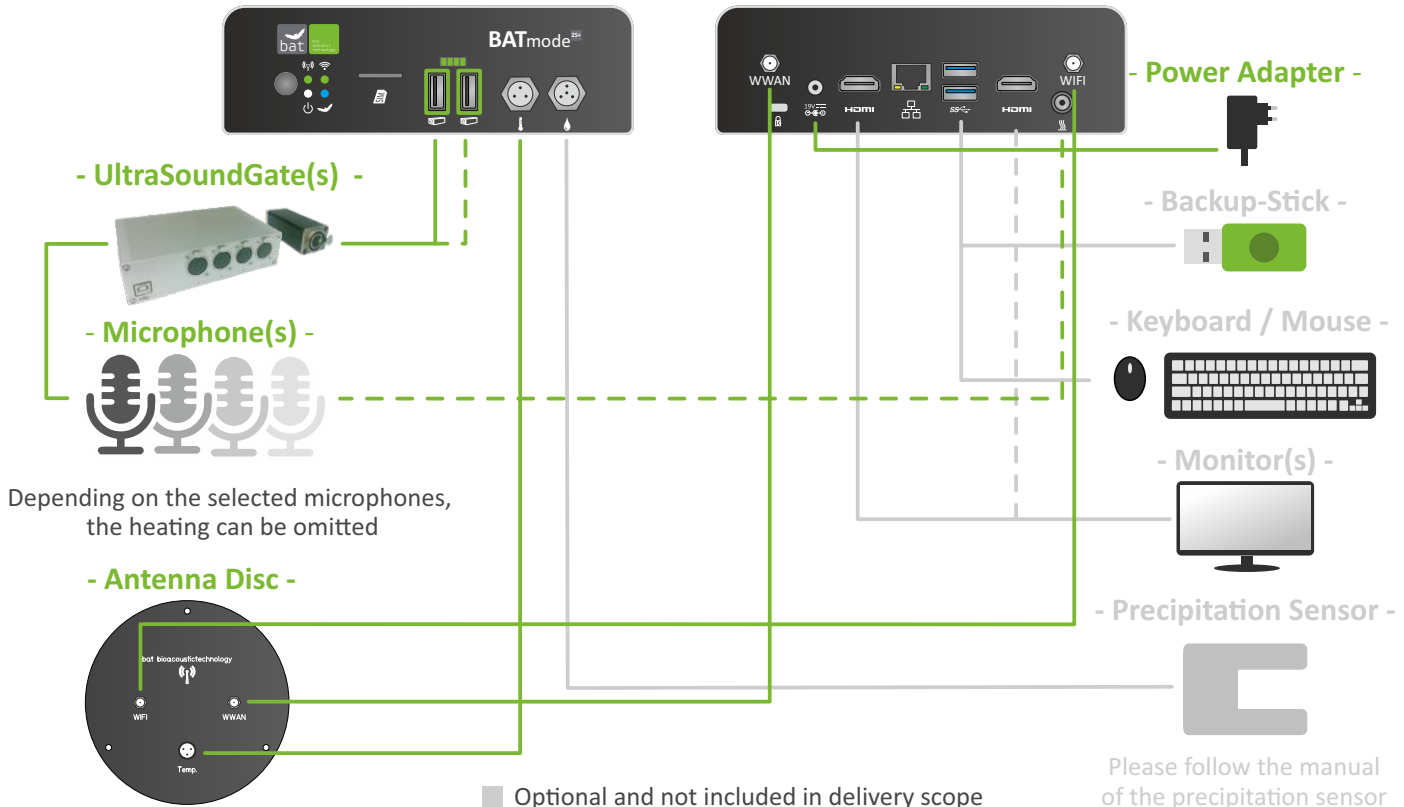
Connect

How to connect all components of your BATmode 2S+ System correctly:

- BATmode 2S+ -

- Power Adapter -

- UltraSoundGate(s) -

- Backup-Stick -

- Microphone(s) -

- Keyboard / Mouse -

Depending on the selected microphones, the heating can be omitted

- Monitor(s) -

- Antenna Disc -

- Precipitation Sensor -

Please follow the manual of the precipitation sensor

Optional and not included in delivery scope

How to connect all components of your BATmode 2S System correctly:

- BATmode 2S -

- UltraSoundGate(s) -

- Microphone(s) -

Depending on the selected microphones, the heating can be omitted

- Magnetic Base Antenna -

- Power Adapter -

- Backup-Stick -

- Keyboard / Mouse -

- Monitor(s) -
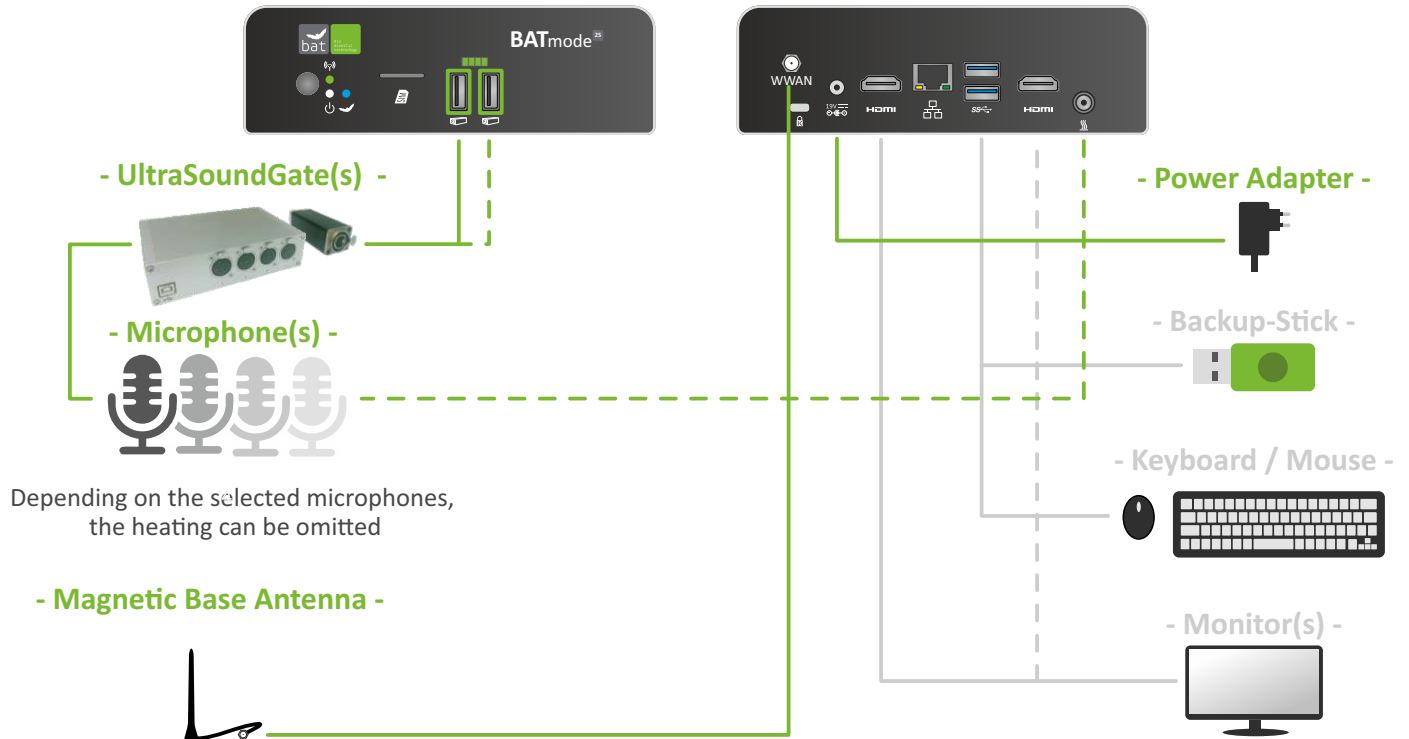
Optional and not included in delivery scope
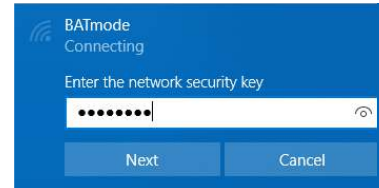
Remote Access via WIFI

How to access your BATmode with your Windows running laptop via WIFI:

Step 1

Connect the WIFI of your Windows running laptop
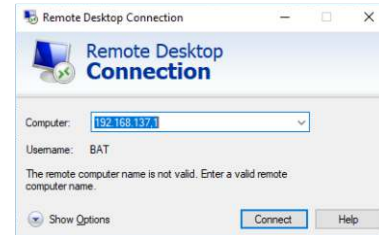with the WIFI-Hotspot of the BATmode.

Default SSID: „BATmode"
Default Password: „12345678"

Step 2

Open the Windows program
Remote Desktop Connection,
insert the WIFI IP of your BATmode
in Computer and press Connect.

Default WIFI IP: „192.168.137.1"

Step 3

Insert the Username „BAT" and the
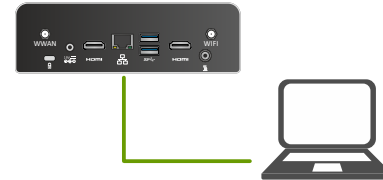Windows Password and press OK.

Default Windows Password: „12345"

WIFI connection is only available for BATmode 2S+.

Remote Access via LAN

How to access your BATmode with your Windows running laptop via LAN:

Step 1

Use an Ethernet cable to connect the LAN port
of your Windows running laptop (RJ45)
with the one of the BATmode (RJ45).

Step 2

Open the Windows program
Remote Desktop Connection,
insert „batmode" in Computer
and press Connect.

Step 3

Insert the Username „BAT" and the
Windows Password and press OK.

Default Windows Password: „12345"

First Start Up

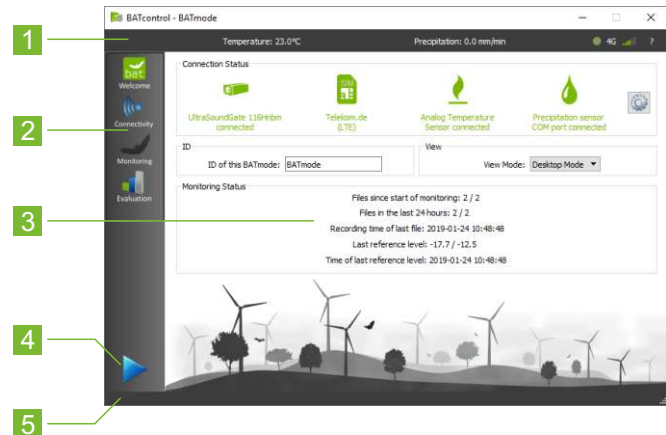Starting of the BATmode System and the BATcontrol control software:

Step 1

Start the BATmode System.

Step 2

Use mouse, keyboard and monitor or connect your laptop via WIFI or LAN as described on page 12 and 13.

The control software BATcontrol starts automatically.

1   Status Bar

2   Task Bar for page choosing

3   Selected Page

4   Monitoring Start-/Stop-Button

5   Message Bar

Starting of the Avisoft-RECORDER USGH recording software and the start of the acoustic monitoring and data acquisition of the external sensors:

Step 1

After selecting your settings on the different pages of BATcontrol, start the monitoring with a click on the Start-/Stop-Button.

Step 2

The recording software will open and the acoustic monitoring as well as the simultaneous data acquistion of temperature and precipitation begin.

Step 3

To stop data acquisition click on the Start-/Stop-Button or close the recording software.
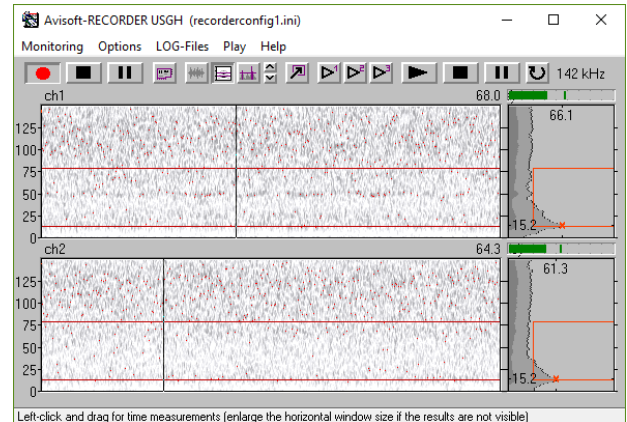
The external sensors for temperature and precipitation acquisition are only available for BATmode 2S+.
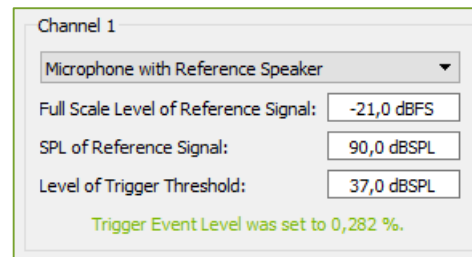
Microphone Calibration and Daily Testsignal

In order to generate comparable bat activity data independent of the individual microphone sensitivity, a calibration of the BATmode System to the used microphone is necessary.

Enter Microphone Calibration Values

Open the Change Calibration dialogue and enter the calibration values of the sticker on your microphone.

As TM10 microphones do not have a reference speaker, select Microphone without Reference Speaker for these microphones.

To account for changes in microphone sensitivity due to aging of the microphones, we recommend sending them in annually for recalibration.
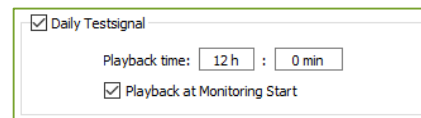
With the help of a built-in reference signal speaker the sensitivity of most microphones can be monitored during a ongoing long-term bat monitoring. By this sensitivity changes due to aging or weather influences can be detected at an early stage.

Configure Daily Testsignal

Activate the Daily Testsignal check box and enter the desired time in Playback time.

Mobile Set Up

How to set up your BATmode for SMS and mobile Internet connection:

Step 1

Insert the Mini-SIM card in the SIM card slot
(For this, the BATmode must be turned off).

Step 2

Use the Mobile settings in Windows to remove
a possibly activated PIN from your SIM card.

*An activated PIN will prevent the BATmode
system to restore a mobile connection
after a possible power failures, automatically.*

Step 3

Insert the APN of your provider in the mobile
settings of Windows.

Step 4

Enter in BATcontrol under Advanced SMS/USSD Settings
the number of the SMS center of your provider in
SMSC-Number and in case of prepaid SIM cards the USSD-Code
for the credit query in Credit USSD-Code.
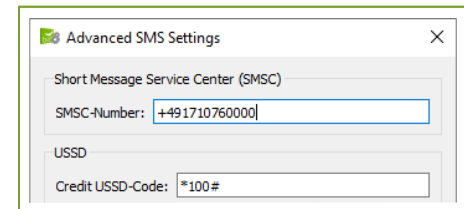
Daily Status SMS

Settings in BATcontrol

- Enable Daily Status SMS and insert the phone number
  of the receiver of the Daily Status SMS in Receiver Number(s).
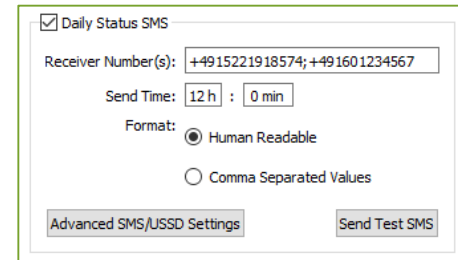
    Use the international format: e.g. +4915221918574.

    Use ; to separate multiple receiver numbers.

- Select the daily transmission time and the desired
  format.

    Human Readable: Values preceded by acronym.
    Comma Separated Values: Values separated by commas.

Meaning of the sent values and acronyms

Acron.	Meaning
ID	ID of the BATmode Systems
MON	Current monitoring status
LRL	Last reference value
LRD	Time of the last reference value
LFD	Time of last recording
F24	Recordings in the last 24 hours
FT	Total number of recordings

Acron.	Meaning
FC	Free space on C: in GB
FD	Free Space on D: in GB
SL	Current mobile signal level in %
WWW	Status of the Internet connection
WIFI	Status of the WIFI-Hotspot
CC	Current Prepaid Credit

Remote SMS

Settings in BATcontrol

- Enable the SMS Remote checkbox.

- Add the mobile number of the command
  sending device to the Security Number(s).

    Use the international format: e.g. +4915221918574.

    Use ; to separate multiple receiver numbers.

Usage of USSD-Codes

With USSD-Codes, you can check the current credit of a
prepaid SIM card and, if necessary, recharge the credit.
To do this, use the USSD command console
in Advanced SMS/USSD Settings.

Android-App

Download from our webpage the free
Android App BATconnect SMS for SMS remote
control and a clearly arranged display of Daily Status
SMS of your BATmode Systems.

SMS Commands

Use these SMS commands to control your BATmode systems via text SMS

Command	System Response
Start monitoring!	Monitoring will start ungated
Start monitoring: 11:00-14:00!	Monitoring will start from 11 am to 2 pm
Start monitoring: 11:00-14:00 and 20:00-02:00!	Monitoring will start from 11 am to 2 pm and 8 pm to 2 am
Start monitoring: -20/10!	Monitoring will start from 20min before sunset to 10min after sunrise
Stop monitoring!	Monitoring will stop
Reboot!	System will reboot
Shutdown!	System will shut down
Send status!	System will send Status SMS
Send Mail!	System will send Status Mail
Send Mail to max(at)moritz.de	Systen will send Status Mail to max@moritz.de
Start WIFI-Hotspot!	WIFI-Hotspot will start
Stop WIFI-Hotspot!	WIFI-Hotspot will stop
Connect WWAN!	Mobile Connection will be connected
Disconnect WWAN!	Mobile Connection will be disconnected
Kill Recorder!	Recording software RECORDER will be killed
Reset USG!	System will reset UltraSoundGate

Send Condition!	System will send current temperatur and precipitation
Send Calibration!	System will send current microphone calibration
Set Calibration 1/0/-20.1/91.2/37.0!	System will set calibration of microphone channel 1 to: Without Reference Speaker/Full Scale Level of Reference Signal -20.1/SPL Level of Reference Signal 91.2/Level of Trigger Threshold 37.0
Add Security Number:+491601234567!	System will add +491601234567 to the Security-Numbers
Set SIM-Card Credit USSD-Code to *100#!	System will set Credit USSD-Code to *100#
Send SIM-Card Credit!	System will send current credit of SIM card
Execute USSD-Code *100#!	System will execute USSD-Code *100#
Send IMEI!	System will send IMEI ID of mobile device
Send MAC!	System will send its MAC adress
Send WIFI-IP!	System will send its WIFI IP
Send LAN-IP!	System will send its LAN IP
Enable Status-Mail!	Daily Status Mail will be enabled
Disable Status-Mail!	Daily Status Mail will be disabled
Enable Status-SMS!	Daily Status SMS will be enabled
Disable Status-SMS!	Daily Status SMS will be disabled

Remote Access and Data Download via Teamviewer

If the BATmode system is connected to the internet (e.g. via LTE), you can use TeamViewer to access your BATmode System from anywhere in the world as if you were sitting in front of it. Teamviewer also allows you to download the recorded data.

Step 1

Download the latest Teamviewer client from www.teamviewer.com and install the client on your BATmode.
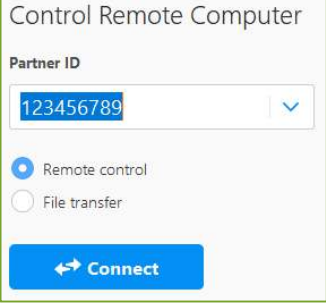
Step 2

During installation select Custom Installation - with Unattended Access and assign a computer name as well as a password and remember the assigned ID.

Step 3

Install the Teamviewer client also on your remote access device.

Step 4

Connect to BATmode by entering the ID under Partner ID.

A licence may be required to use TeamViewer.
A free version is available for testing purposes.

Data Download via Dropbox Cloud

If the BATmode system is connected to the internet, it is possible to continuously synchronise captured data with a cloud storage. This way, you always have full access to the data from anywhere in the world.

Step 1

Download the latest Dropbox client from www.dropbox.com and install the client on your BATmode.

Step 2

During installation, log in with a previously created account and select Save Files locally.

Step 3

In BATcontrol, use Set Monitoring Directory to select the Dropbox folder C:\User\BAT\Dropbox as the storage location for your recordings.

Step 4

Also install the Dropbox client on your remote access PC. The data is now continuously downloaded to the Dropbox folder of this PC.

A licence may be required to use Dropbox. A limited free version is available for trial purposes.
Note possible restrictions on the amount of available cloud storage.

myBAT

Use the mybat cloud service to monitor your BATmode systems from anywhere in the world.

Step 1

Activate myBAT in BATcontrol on your BATmode and choose a myBAT password.

Step 2

Sign Up by using your Purchase-Code on:
https://www.mybat.bioacoustictechnology.de

Step 3

Assign your BATmodes to your account by using the MAC addresses of your BATmode systems and the selected myBAT password.

Default myBAT Password: „12345678"

| Daily myBAT ▼ | Last Update: 2020-03-04 12:05:40 |
| myBAT Password: | 12345678 |

Purchase-Code:

MAC adress of this BATmode:

myBAT requires an active Internet connection via LAN or mobile connection.

Set Up

This checklist will help you to forget nothing, when setting up your BATmode system:

- ☐ Insert SIM Card
- ☐ Change Windows Password in Windows
- ☐ Change Windows Password in ChangeAutoLogonPassword
- ☐ Insert APN
- ☐ Insert SMSC-Number
- ☐ Insert Credit USSD-Code
- ☐ Change WIFI-Hotspot SSID and Password
- ☐ Change ID
- ☐ Configure daily Status SMS
- ☐ Configure daily Status Mail

- ☐ Configure SMS Remote Access
- ☐ Configure myBAT
- ☐ Enter Recording Periods
- ☐ Configure daily Reference Signal
- ☐ Set Microphone Channel Names
- ☐ Set Monitoring Directory
- ☐ Enter Microphone Calibration Values
- ☐ Connect Backup-Stick and configure Backup
- ☐ Install Teamviewer and set up a permanent Password
- ☐ Configure GSM Switch Socket

This checklist refers to a standard configuration of the BATmode system with GSM Switch Socket, which uses SMS, mobile Internet and WIFI as remote access options.

For more detailed explanations of the individual settings, please refere to the manual.

WIFI is only available for BATmode 2S+ systems.

Test all planned remote access paths before installation in the wind turbine.

Installation

The following points should be clarified in advance of the installation:

☐ Power supply

☐ Mobile coverage at the installation site

☐ Internet via turbine network possible

☐ Installation location of the disc(s)

☐ Installation location of the BATmode/BATbox

☐ Cabling/cable length

With this checkliste you only have to climb once in the nacelle of the turbine and have everything necessary with you.

☐ BATmode system (preferably in BATbox S)

☐ Microphone disc(s)

☐ Antenna disc/magnetic base antenna

☐ All cables

☐ Extension cable for power supply

☐ Drill with a drill bit of 102 mm

☐ 2.2 mm metall drill bit for pre-drilling the fastenings of the discs

☐ at least six 3.5 mm SPAX screws with screwdriver to fix the discs

☐ Magnetic feet or screws, pre-drill bit and screwdriver to fix the BATmode or BATbox

☐ Cabinet key

☐ Cable ties

☐ Laptop with Ethernet cable

☐ Smartphone

☐ GSM Switch Socket

☐ Ethernet cable

This checklist refers to a standard configuration of the BATmode system.

BATbox S

Use the optionally available BATbox S for an easy and safe installation of your BATmode 2S/2S+ system.

Your advantages

- Safe protection of your expensive measuring equipment.

- Easy installation of all components of your BATmode 2S/2S+ system.

- Thermal design for use in nacelles of wind turbines.

- The compact size of the BATbox S allows to use the elevator to bring it in the nacelle.

- Optionally available feet allow a drill free installation in the nacelle of most wind turbines.

Not included in the delivery scope of a BATmode system. Please refer to the manual of the BATbox S.

BATscreen

The software tool for an efficient analysis of your recorded bat calls.

Features

- Fast visualization and audio playback of bat calls.

- Easy check of automated call categorization.

- Fast and efficient manual analysis of large
  amounts of data.

- Data export for ProBAT.

- Supports WAV and RAW files.

- Graphical data analysis tools to determine temporal
  activity distribution and correlations with
  environmental parameters.

- and much more.

*You will find the free function-reduced
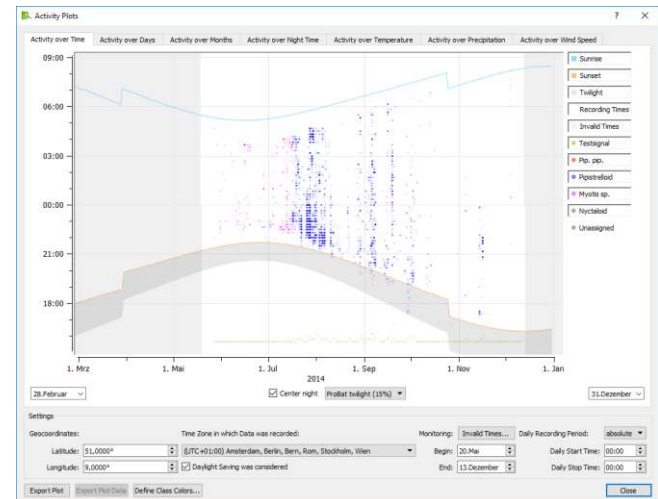trial version BATscreen LITE in the download
area on our homepage:*

www.bioacoustictechnology.de/downloads

Not included in the delivery scope of a BATmode system. Please refer to the manual of BATscreen.
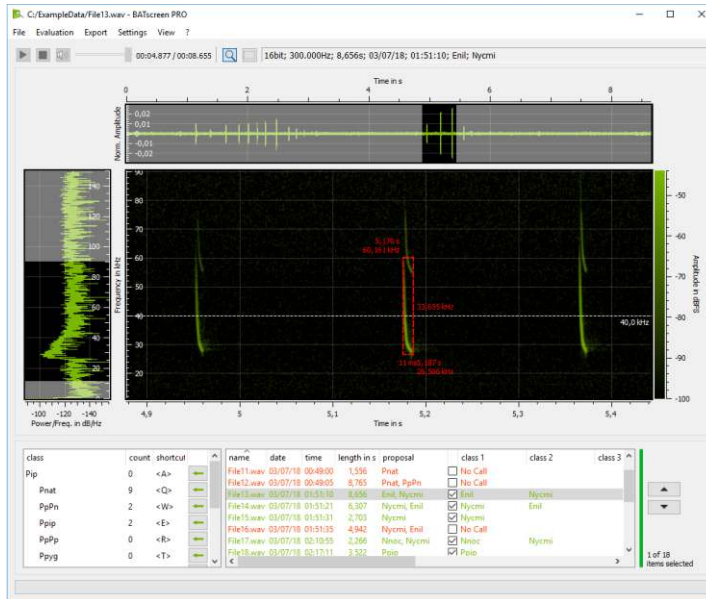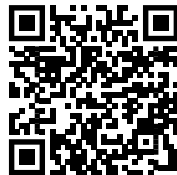
- Call visualization and data categorization -

- Graphical data analysis -

bat

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technology

The detailed manual is always available on the Internet as up to date PDF download

www.bioacoustictechnology.de/downloads

Product illustrations similar. Misprints, errors, innovations and changes reserved.