SAMS Monitoring System
Quick Start Guide

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Abstract

The SAMS Quick Start Guide outlines the steps for getting the SAMS Monitoring System up and running. The guide is split into sections. Each section contains step-by-step instructions. Make sure to follow the steps with the guide to avoid any problems during your first time with SAMS. For a more detailed description, please refer to the Detailed Operating Instructions [here]

Contents

1 System Setup

1.1 System case

3D printed: download the *case.stl* file [here]
download the *case_lit.stl* file [here]
prepare *.gcode flies with Slicer-Software for your 3D-printer and print
we recommend ABS filament

DIY case: instead of the 3d printed case you can also create your own case, make sure your system is protected against environmental influences
we recommend a food storage container

→ Chapter 2.3 You can find detailed information in the main manual in *chapter 2.3 Case and Cables*

1.2 Hardware Construction

soldering: get your PCB *gerber file* [here]
solder the components to the designated slots of the PCB
wire and/or solder the Screw terminal blocks with the power supply plug, the plug for the sensor frame and the scale

assembly: screw the finished system into the housing
assemble the plugs

→ Chapter 2.1, 2.2 You can find detailed information in the main manual in *chapter 2.1 Components* and *2.2 Circuit plan and Printed Circuit Board (PCB)*

2 Sensor Setup

2.1 Sensor frame

3D printed: download the *sensorframe_frontplate.stl* file [here]
download the *sensorframe_middleplate.stl* file [here]
download the *sensorframe_backplate.stl* file [here]
prepare *.gcode files with Slicer-Software for your 3D-printer and print
we recommend ABS filament

DIY frame: instead of the 3d printed frame you can also create your own frame make sure your frame is suitable for your hive
we recommend to pay attention to the beespace

→ Chapter 2.4 You can find detailed information in the main manual in *chapter 2.4 Sensor Placement.*

2.2 Hardware construction

soldering: solder the components (DHT22, DS18B20 and SP0645) to the plug

assembly: assemble the sensors on their designated spots of the printed frame
assemble a fine wire mesh between the frame and sliding cover
screw the sensor frame onto one side- and the backplate onto the other side of a broodcomb

→ Chapter 2.4 You can find detailed information in the main manual in *chapter 2.4 Sensor Placement.*

3 Software Setup

3.1 What you need

Before you start:	Have a 16 GB SD card ready Download SAMS Software Image [here] Install *W32 Diskimager* or similar and write image to SD card [here] install *BerryLan* App on your smartphone [here] provide Wifi login details provide ID and secret: SIGN UP to get credentials here: [here] precisely defined weight (>7kg) Install *PuTTy* or similar SSH client [here]

3.2 Start System

start SAMS System:	Insert SD card into Raspberry Pi of the SAMS system connecting the SAMS system to power (starting) wait $\sim$ 30 sec for booting

3.3 Set up Wifi

BerryLan:	after the boot process, start *BerryLan* on your smartphone switch on Bluetooth, GPS and follow the setup to establish Wifi access Note the IP address

3.4 Calibrate system

Start calibration interface:	start the browser on your PC or Smartphone and enter the IP address followed by port 5000 as follows: e.g. 192.168.1.38:5000. Follow the calibration setup. Reboot.

3.5 Change Settings on RaspberryPi

SSH:	establish SSH connection to Raspberry Pi. To do this, use *PuTTy* or similar on your PC and connect to IP address (e.g. 192.168.1.38). Terminal opens.
Access:	use the following Login to get access to your Raspberry Pi: *Login: pi* *Password: samsrocks*
Extend SD card size:	go to Terminal 'sudo raspi-config' - Advanced settings - Expand Filesystem.
Systemtime:	Set your geographical time (if offline) via Terminal enter 'sudo raspi-config' - Timezone

3.6 Set up Node in Data Warehouse (DW)

create Account:	open the DW page in the browser [here] and set up the user or use existing access. To create Device with ID, click on tab 'Node' and 'Register SAMS Hive'. Then enter ID, description and location. Only one ID for each Device.

3.7 Check Data Stream in DW

click:	on tab 'Devices' – Last event
→ Chapter 4	You can find detailed information in the main manual in *chapter 4 Data Warehouse*.

3.8 Report bugs

Get in touch: Please report bugs and ideas and log them [here] with the relevant parameters so that we can further adapt the software. Find a solution for your Problem [here]. Thanks for your support and stay tuned [here]

3.9 Space for Notes