



**smsvaga**

Optical d.o.o.

2<sup>nd</sup> place for best technological innovation of Serbia '14.  
3<sup>rd</sup> place on 6<sup>th</sup> national beekeeping day '14.

The SMS Scale is registered as petty patent at Republic of Serbia Intellectual Right Office under the number 1456 UI



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## 1. WHAT IS SMS SCALE INDICATOR?

SMS Scale Indicator (hereinafter referred to as SMS Scale) is a specialized electronic device for measuring mass, used especially in beekeeping. With its functions, the SMS Scale represents the best device that allows a beekeeper to, at any time, read honey yield through Bluetooth or text messages. Besides weighing, the SMS Scale can convey other parameters, such as position, humidity and temperature or warnings about apiaries security, and all this from the comfort of your home.

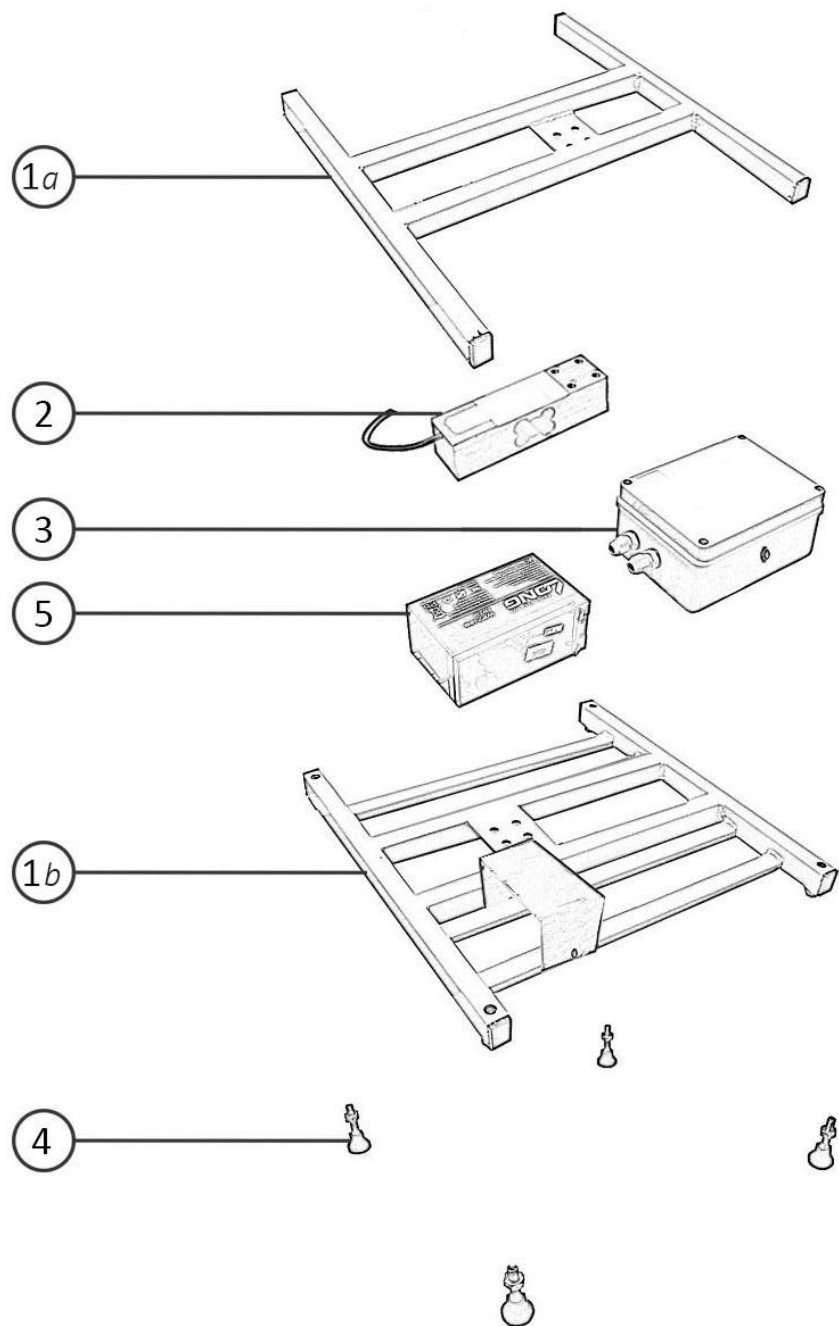


Picture No 1: SMS Scale with the battery

## 2. PARTS OF THE SMS SCALE

The main parts of the SMS Scale are (Picture No 2):

1. The metal construction
2. Measuring cell
3. Electronic circuit board with GSM module, placed in waterproof plastic box (box with electronics)
4. Adjustable leveling mounts
5. Power supply



Picture No 2: Main parts of the SMS Scale

The construction consists of two metal consoles (1a and 1b) H-shaped connected with the measuring cell (2) in the middle. Console 1b contains box with electronics (3) and metal holder for the battery (5). Top of console 1a is the actual place for the bee hive. Bee hive can be placed directly on the console 1a or on the protective pan (optional).

Measuring cell allows accurate measurement of yield of honey. Depending on the customer`s needs, it can measure up to 120, 250 or 360 kg of mass.

Along with the electronic, an electronic circuit board with GSM module is included that allows sending and receiving messages about honey yield. Plastic box is waterproof and it is connected directly to the measuring cell by cable.

Adjustable leveling mounts (4) are at the bottom of the console 1b and their purpose is to level and stabilize the scale.

In order to get the scale to work, the power supply is necessary (5).

Battery is sold separately. The SMS Scale construction is designed to fit the small Gel batteries between the grids, but beekeeper can use any type of batteries up to 30V voltage.

Beside the main parts, the SMS Scale can use some additional equipment. This equipment isn`t necessary but it allows the beekeeper to make the most of his scale. These parts are:

1. Pan
2. GPS module with antenna
3. External GSM antenna
4. Solar panel
5. Different types of sensors for:
  - measuring external temperature
  - measuring humidity
  - measuring temperature inside the hive
  - securing the apiary

The pan also has a protective role shielding the other parts from weather conditions and dust. It can be made of **(1) thin tin** with a small door at the back which enables easier access to electronics and the battery. On the lower side of the pan there are specially designed sockets which fit the construction of the scale and the rubber in the socket that prevents pan from sliding; or **(2) wooden pan** with same dimensions and made from the same wood like the hive. Like the tin pan, this one also has small door at the back.

GPS module is a small electronic circuit that is mounted on an electronic board and with the GPS antenna, it is used to precisely locate the SMS Scale.

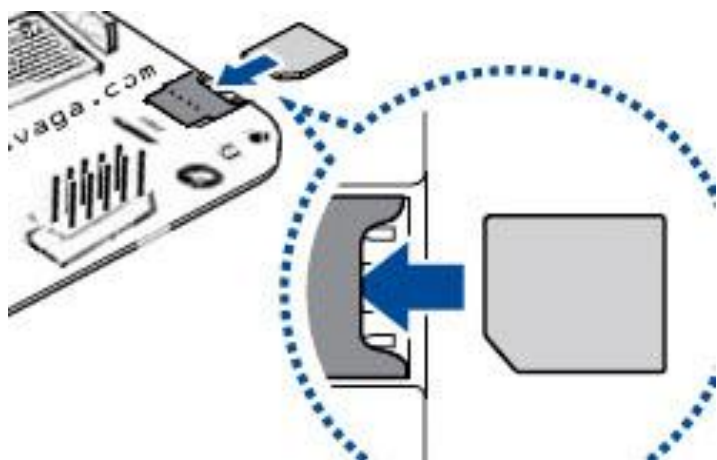
External antenna tends to amplify the signal of mobile telephony. It is used only on locations where GSM signal is weak. The solar panel provides continuous power supply through solar energy. For connecting the solar panel, battery is required.

It is possible to connect various types of sensors for measuring temperature, humidity, temperature inside hive and sensors which protect apiary against theft.

### 3. PREPARATION OF SCALE FOR USE

1. Unpack the SMS Scale
2. Insert the SIM card
3. Attach additional equipment
4. Attach fully charged battery
5. Visual indications

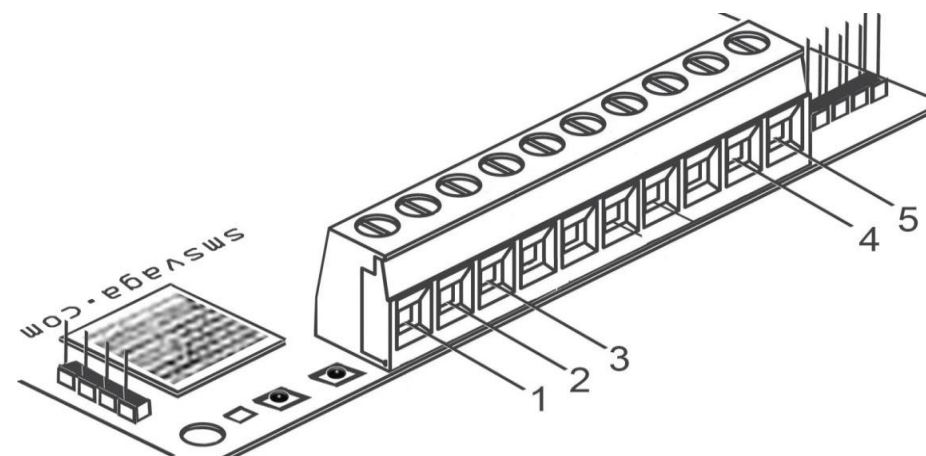
The SMS Scale is delivered in closed cardboard box. After unpacking the device, it is necessary to unscrew the top of the box with electronics, in order to insert the SIM card. SIM card can be used from any mobile service provider. It must be active but PIN protection deactivated (deactivation of PIN code needs to be done according to the service provider instruction). Insertion of the SIM card must be done in provided slot on the electronic circuit board (Picture No 3). From 2017, SMS Scale uses only microSIM cards.



Picture No 3. Inserting microSIM card into electronic circuit board

**All additional equipment (sensors, GPS modul, solar panel etc.) must be attached before connecting the scale to battery!**

Theft prevention sensors have 2 wires which must be connected on places 1 and 2 of block-connector on electronic board. The order of wires is not important. Temperature and humidity sensors have 3 wires which must be connected on places 3 (data wire, usually yellow or green) and places 4 (+, red wire) and 5 (-, black wire) (Picture No 4).



Picture No 4: Attaching the sensors

When SIM card is inserted into electronic circuit board, it is safe to attach the previously charged battery ensuring that the red clamp is attached on + and black on -. When the power is on, LED light on electronics flashes every second, which means that the scale is searching for a GSM network. After approximately 30 seconds, the scale is connected to a mobile network and LED light flashes slowly (once every 3 seconds). This means that the SMS Scale is ready to be used and the plastic box can be closed.

Using the mobile phone call the number of SIM card previously inserted and the scale will memorise this number under the name User. The SMS Scale will replay with: „Successfully created User“. With the other numbers the SMS Scale will not communicate. To the phonebook of SIM card it is possible to add as many as Users as needed by sending a text message, which will be discussed later.

For accurate measuring it is necessary that SMS Scale is on hard surface and its position needs to be flat. This is achieved with the leveling mounts on the bottom of the construction, adjusted as desired, leveling scale and tightening the mounts nuts. The scale is now ready to be used.

When all the procedures are performed and scale is in the apiary, beekeeper sends a message TARA.

### 4. SMS COMANDS FOR ADJUSTING THE SCALE

**NOTE: SMS commands need to be written in all capital letters, from the beginning of SMS message. All the messages that do not meet the prescribed format will be automatically rejected, and the client will receive SMS with the content: UNKNOWN COMMAND. List of all commands is given in following table:**

No.	Command	Explanation
1.	<b>ISO</b> [space] [two letter abbreviation]	Language selection
2.	<b>ADD</b> [space] <b>NUMBER</b> [space] [mobile phone number 06xxxxxxx]	Adding new User by SMS
3.	<b>ADD</b> [space] <b>NUMBER1</b> [space] [mobile phone number 06xxxxxxx]	Adding or re-writing the first number (User) on the SIM card
4.	<b>DELETE</b> [space] <b>NUMBER</b> [space] [mobile phone number 06xxxxxxx]	Deleting one particular User
5.	<b>DELETE</b> [space] <b>NUMBER1</b> [space] [mobile phone numberof first user]	Deleting first User from the SIM card
6.	<b>DELETE</b> [space] <b>ALL</b>	Deleting all the users
7.	<b>USERS</b>	Shows all User numbers from SIM card
8.	<b>SCALE</b> [space] [scale name up to 14 characters]	Defining the name of the Scale
9.	<b>TARA</b>	Defining TARE
10.	<b>MEASURE</b>	Measuring the honey yield
11.	<b>NOTIFICATION</b> [space] <b>0</b>	Turning off the reply on command
12.	<b>NOTIFICATION</b> [space] <b>1</b>	Turning on the replay on command
13.	<b>BT</b> [space] <b>0</b>	Turning off Bluetooth
14.	<b>BT</b> [space] <b>1</b>	Turning on Bluetooth
15.	<b>MOD1</b>	Measuring by call several times per day
16.	<b>MOD2</b>	Measuring by SMS once per day
17.	<b>TIME</b> [space] <b>MEASUREMENTS</b> [space] [time measurements in hours xx,yy]	Defining two yield measurements intervals when scale is in MOD2.
18.	<b>DAILY</b> [space] <b>0</b>	When scale is in MOD2, report is sent only to the first User
19.	<b>DAILY</b> [space] <b>1</b>	When scale is in MOD2, report is sent to all Users on SIM card
20.	<b>LEVER</b> [space] <b>0</b>	Turning off „Lever“
21.	<b>LEVER</b> [space] <b>1</b>	Turning on „Lever“

No.	Command	Explanation
22.	<b>TARA1</b>	Starts the process of adding new weight
23.	<b>TARA2</b>	Ends the process of adding new weight
24.	<b>TDI</b> [space] [time of measurements in hours xx]	Defines starting time for daily yield income
25.	<b>NET</b> [space] <b>INFO</b> [space] [number xxx]	Notification when the yield reaches certain weight
26.	<b>NET</b> [space] <b>INFO</b> [space] <b>OFF</b>	This command is for canceling NET INFO
27.	<b>ALARM</b> [space] <b>START</b>	Activating the alarm
28.	<b>ALARM</b> [space] <b>STOP</b>	Deactivating the alarm
29.	<b>TIME</b> [space] <b>SET</b> [space] <b>HHMMSS</b>	Manual time set
30.	<b>TIME</b> [space] <b>ZONE</b> [space] [±x]	Manual time zone set
31.	<b>CREDIT</b>	Sending SMS with the balance statement
32.	<b>WEIGHT</b> [space] <b>LOSS</b> [space] <b>0</b>	Deactivating notification for the weight loss
33.	<b>WEIGHT</b> [space] <b>LOSS</b> [space] <b>1</b>	Activating notification for the weight loss
34.	<b>APN</b> [space] [setting mobile operator for APN]	Defining an APN for mobile operator
35.	<b>POSITION</b>	Scale reporting back position where the SMS Scale is
36.	<b>EMAIL</b> [space] <b>SET</b> [space] [e-mail in which you want to receive e-mail]	Defining User`s e-mail for receiving reports
37.	<b>EMAIL</b> [space] <b>SET</b> [space] <b>SERVER</b>	Defining User`s e-mail server for receiving reports (if User don`t want to use the SMS Scale server)
38.	<b>FTP</b> [space] <b>SET</b> [space] <b>[SERVER] [space] [PORT] [space] [USER] [space] [PASS] [space] [/DIRECTORY]</b>	Defining User`s FTP parameters for receiving reports

No.	Command	Explanation
39.	<b>REPORT [space] SMS</b>	User wants to get just SMS reports
40.	<b>REPORT [space] EMAIL</b>	User wants to get just EMAIL reports
41.	<b>REPORT [space] SMS-EMAIL</b>	User wants to get SMS and EMAIL reports
42.	<b>REPORT [space] OFF</b>	User wants to turn off SMS and EMAIL, and get reports on FTP server
43.	<b>CREDIT [space] SET [space] [USSD code mobile operator]</b>	Checking the balance using USSD code
44.	<b>CREDIT [space] SET [space] SMS [space] [SMS command of mobile operator]</b>	Checking the balance using SMS commands
45.	<b>RESET</b>	Turning off and on the scale
46.	<b>CONF</b>	Reading scale configuration. Works only via Bluetooth!

#### **ISO [space] [two letter abbreviation]**

Command is used to choose the language. Available languages are: Serbian - **sr**, English - **en**, German – **de**, French - **fr** and Italian – **it**.

Example:

**ISO en** – scale is operating in English

#### **ADD [space] NUMBER [space] [telephone number 06xxxxxxx]**

Command is used when the main User wants to add new ones.

Example:

**ADD NUMBER 0601231231** – number 0601231231 is added as a new User

#### **ADD [space] NUMBER1 [space] [telephone number 06xxxxxxx]**

Command is used to define the first User or to re-write the first User. This command is set by the already existing user.

Example:

**ADD NUMBER1 0601231231** – number 0601231231 is now placed as the first User

#### **DELETE [space] NUMBER [space] [telephone number 06xxxxxxx]**

Command is used to delete an existing User.

Example:

**DELETE NUMBER 0601231231** – number 0601231231 is deleted from Users

#### **DELETE [space] NUMBER1 [space] [telephone number 06xxxxxxx]**

Command is used to delete the first User.

Example:

**DELETE NUMBER1 0601231231** – number of first User 0601231231 is deleted

#### **DELETE [space] ALL**

Command is used to delete all Users.

Command:

#### **DELETE ALL**

#### **USERS**

This command lists all Users from SIM card.

#### **SCALE [space] [scale name up to 14 characters]**

Command is used to name the scale. Name can consist of letters and numbers, with spaces, up to 14 characters.

Example:

**SCALE Bees Mountain 1**

#### **TARA**

Command is used when the scale is in the apiary and it is ready to be used. After sending the command TARA, beekeeper gets SMS with information about TARE value (NET is 0).

**SMS Scale sends back text message with the measurements.**

#### **MEASUREMENT**

Measurements can be done by free call or by sending the command MEASUREMENT.

**The SMS Scale sends back text message with the measurements.**

#### **NOTIFICATION [space] 0**

#### **NOTIFICATION [space] 1**

Command is used when user wants to get reply „OK“ or „UNKNOWN COMMAND“. These notifications are sent back for commands that which are not executed immediately.

**NOTE:** Sending the warning causes scale to use the money from SIM card balance.

Commands:

**NOTIFICATION 0** - for turning off notifications

**NOTIFICATION 1** - for turning on notifications

**BT [space] 0**

**BT [space] 1**

These commands turn on and off Bluetooth, which is already integrated into the scale. Bluetooth can be used for scale settings and also for reading the data.

Commands:

**BT 0** - this function is turned off

**BT 1** - this function is turned on

**MOD1**

**MOD2**

These commands define scale working mode. MOD1 in which the SMS Scale is always available for measuring and MOD2 when then the SMS Scale is in sleep mode, and sends one SMS per day (with 2 measurements during that day). Beekeeper can set these modes by sending SMS MODE1 or MODE2.

Commands:

**MOD1** - measurement by calling

**MOD2** - sleep mode with one daily report

**TIME [space] MEASUREMENTS [space] [time measurements in hours xx,yy]**

Command which sets time when scale does its measuring in MOD2.

Example:

**TIME MEASUREMENTS 08,20** – scale will do the measuring at 08 in the morning and at 08h in the evening.

**DNEVNI [space] 0**

**DNEVNI [space] 1**

These commands define whether MOD2 daily report is received by all Users or just by the first User

Command:

**DAILY 0** – just the first User gets the reports

**DAILY 1** – all Users get the reports

**LEVER [space] 0**

**LEVER [space] 1**

These commands turn on and off the lever function.

Command:

**LEVER 0** – this function is turned off

**LEVER 1** – this function is turned on

**TARA1**

**TARA2**

These two commands are used when extensions and semi-extensions are added on the bee hive. More about this functions will be discussed later.  
Command:

**TARA1** – command is sent before adding an extension

**TARA2** – command is sent after adding an extension

**TDI [space] [time of measurement in hours xx]**

During the measuring, daily income appears in a message. If the TDI is 06 then the DI in the MOD1 message will be yield from that day from 06 in the morning until the time of measurement. In MOD2 TDI will be daily yield from 06 am to second measurement.

Example:

**TDI 07** – section starts at 07 a.m.

**NET [space] INFO [space] [number xxx]**

With this command, beekeeper sets scale to send him a notification when the yield reaches a certain weight.

Example:

**NET INFO 102** – Scale will send a notification when the yield reaches 102 kg

**NET [space] INFO [space] OFF**

This command shuts down previous command.

Command:

**NET INFO OFF**

**ALARM [space] START** - alarm is activated

**ALARM [space] STOP** - alarm is deactivated

These commands turn on and off the alarm. After finishing his work in the apiary, beekeeper is advised to start the alarm function. The next time he comes back in apiary, he needs to deactivate the alarm.

Command:

**ALARM START**

**ALARM STOP**

**In the case of compromised safety the beekeeper receives warning SMS.**

### **TIME [space] SET [space] HHMMSS**

This command is for manual time setting in case when time, which the SMS scale receives from network base station, is incorrect

Example:

**TIME SET 152100** – setting on 15 hours, 21 minute and 0 seconds

### **TIME [space] ZONE [space] [±x]**

This command is for manual time zone setting. Time zone is marked with +/- number of time zone.

Example:

**TIME ZONE +1** - Central European Time Zone

### **TIME**

Command after which scale returns message with the time it uses.

### **WEIGHT [space] LOSS [space] 1**

### **WEIGHT [space] LOSS [space] 0**

Commands which activate and deactivate notifications about sudden weight loss.

Command:

**WEIGHT LOSS 1** - turns on report

**WEIGHT LOSS 0** - turns off report

**In case of a sudden weight loss, beekeeper receives warning message.**

### **APN [space] [setting mobile operator for APN]**

Defining APN for mobile operator. This option must be activated for Web services that scale provides.

Example:

**APN gprswap** – for Telekom

**APN internet** – for Telenor

**APN vipmobile** – for VIP

If APN isn't set correctly, the SMS Scale replays with: „Wrong APN!“

### **POSITION**

This command sends back text message with coordinates and link for visual view on *Google maps* or *Google Earth*. In base model of the SMS Scale, this option works through base station for mobile telephony. Due to imperfections of this technology, there are possible deviations up to several hundred meters. If the beekeeper needs precise satellite locating, he can buy additional GPS module with the antenna.

### **EMAIL [space] SET [space] [e-mail in which beekeeper wants to receive reports]**

This commands set an e-mail for delivering reports.

Example:

**EMAIL SET myname@gmail.com**

### **EMAIL [space] SET [space] SERVER [space] [server address] [space] [port] [space] [username] [space] [password]**

In previous report commands are sent to e-mail users through the SMS Scale server. If the beekeeper has its own e-mail server, it will be set by this command

Example:

**EMAIL SET SERVER mail.optical.rs 25 smsscale 12345** – where mail.optical.rs is server, 25 port, smsscale user and 12345 password

### **FTP [space] SET [space] [server address] [space] [port] [space] [user] [space] [password] [space] [/folder]**

This command sets a FTP server for delivering reports.

Example:

**FTP SET ftp.optical.rs 25 smsscale 12345 /reports** – where ftp.optical.rs is FTP server, 25 port, smsscale user, 12345 password and /reports is folder for data in FTP

### **REPORT [space] SMS**

Command is used when beekeeper wants to receive only SMS reports.

Command:

**REPORT SMS**

### **REPORT [space] EMAIL**

Command is used when beekeeper wants to receive only e-mail reports.

Command:

**REPORT EMAIL**

### **REPORT [space] SMS-EMAIL**

Command is used when beekeeper wants to receive SMS and e-mail.

Command:

**REPORT SMS-EMAIL**

### **REPORT [space] OFF**

Command which shuts down SMS and e-mail, and beekeeper gets his reports on FTP.

Command:

**REPORT OFF**



**CREDIT [space] SET [space] [USSD code of mobile operator]**

**CREDIT [space] SET [space] SMS [space] [SMS command of mobile operator]**

These commands are being used for checking the balance using USSD code or SMS command.

Example:

**CREDIT SET \*123#** - balance check for VIP Serbia prepaid

**CREDIT SET SMS ? 1260** – balance check for VIP Serbia postpaid

**CREDIT**

This command will check the remaining credit in the balance after setting the previous command.

**RESET**

This command will reset (turn off and on again) the SMS Scale.

**CONF**

This command is sent via Bluetooth and it reads configuration of the scale.

**5. WEIGHTING WITH SMS OR FREE CALL**

Place the weight on the SMS Scale, with or without pan, which must be first aligned, centered and tarred. Weighing can be performed by sending SMS message: **MEASURE**. Another way is calling the inserted SIM card to which it will respond with a text message. After dialing the SMS Scale number, it will "ring" 2 times, then reject the call. Because this call has just an activation purpose, it will be free of charge. After a few seconds, beekeeper gets a return SMS message, which hereinafter is referred as **SMS-measurement**, with the following information:

Scale: Bees Mountain 1	Scale name
NETO: 17.82 kg	NET honey yield
TARA: 35.86 kg	TARE weight
DI: 3.76kg	Daily yield
GSM Signal: 21 (7 do 31)	GSM signal strength in increments
Sys.Temp: 16C (-30C do 80C)	System temperature
Battery status: 5/5	Battery status in increments 1-5/5

For doing measurements in **MOD2**, it is necessary first to set up times when the SMS Scale will do the measurements. It can be done by sending command **TIME MEASUREMENTS xx,yy**. After that, it is needed to send the command **MOD2**. Then beekeeper receives text message with the following information:

Scale: Bees Mountain 1	Scale name
08h: 10.02kg 20C	NET honey yield at 8 am, sys temp
20h: 13.75kg 19C	NET honey yield at 8 pm, sys temp
TARA: 35.86 kg	TARE weight
DI: 3.90kg	Daily yield
GSM Signal: 21 (7 do 31)	GSM signal strength in increments
Battery status: 5/5	Battery status in increments 1-5/5
2016-05-04 20:00:30	Date and time

**6. ADDING NEW EXTENSION ON THE HIVE**

Using this function, beekeeper knows, at any time, how much yield is in the hive, without having to do subtraction of NET and TARE value each time by hand, after adding new extension. This option is available only in MOD1.

**TARA1** – starts the process of adding new weight. By sending a message with the text TARA1, beekeeper is preserving the current TARE and NET values on the scale. When new extension is inserted and the hive is closed, beekeeper sends a SMS message with the text TARA2. At this point, the scale measures the entire hive and the difference in weight originated from new extension, it is converted into TARA. New TARA then, is a sum of old TARA (before adding extension) and weight of the new extension. This process of adding new extension is very simple, it is only needed to follow the next three steps:

1. Before adding extension it is required to send TARA1 (from that moment scale memorizes current weight and stops weighing until it gets message TARA2). The SMS Scale replays with: "You have 10 minutes to complete the procedure of adding extensions and send SMS with content TARA2!"
2. For adding the extension, the time limit is 10 minutes. If beekeeper doesn't finish adding the extension during that time, command TARA1 will be canceled, and measurement will be like it was before (the SMS Scale cancels text message TARA1 and proceeds with usual operations).
3. When extension or semi-extension is placed, beekeeper needs to send text message TARA2, which concludes this process. From the moment the SMS Scale receives **TARA2**, measuring continues regularly, the only difference being that weight of the new extension is now contained in TARA, but the NET continues from the value before texting **TARA1**. After sending message TARA2, the SMS Scale will make a control measurement and it will reply to beekeeper with message which now shows the new TARE and NET without changes.

**Note: Adding a new extension to the hive needs to be done no later than 10 minutes from sending the first message with text TARA1. Otherwise, the SMS Scale will not remember weighing NET and TARE measured before posting TARA1. This function is available via SMS messages or Bluetooth.**

## 7. LEVER

This function provides better insight in morning foraging for a beekeeper. In the evening of the previous day at 21h, yield is weighed and in the morning at 06h, the scale does the controlling measurement. During the morning, scale will do the control measuring several times and it will save time when the weight reaches the lowest value (this can be caused by evaporation i.e.). That lowest point is called **the lever**. As the time passes and bees harvest more and more honey, weight in the hive increases. Scale will send notification to beekeeper when honey yield reaches again the value from 21h of the previous day. This SMS contains following information:

Scale: Bees Mountain 1  
NET at 21h was 87.45kg, in 06h 87.02kg. Lever was 86.56kg in 06:46h. The scale is leveled at 08:57h.

## 8. WARNING MESSAGES

If there is unauthorized access to a protected territory (only if function **ALARM START** is active) beekeeper gets SMS warning:

Scale: Bees Mountain 1  
WARNING: Compromised safety!!!

In case of sudden weight loss (only if function **WEIGHT LOSS 1** is active) beekeeper gets SMS warning:

Scale: Bees Mountain 1  
WARNING: Weight loss has been detected!!!

If the weight on scale gets to some previously defined specific value (only if function **NET INFO xxx** is active) beekeeper gets SMS warning:

Scale: Bees Mountain 1  
NET value of: xxkg has been reached!

When the GROSS weight (beehive, extensions and honey weight) gets close to maximum load of load cell, beekeeper receives SMS warning:

Scale: Bees Mountain 1  
The scale will be overloaded soon. Please, reduce the weight of the beehive!!!

There is an option that sends SMS warning to the beekeeper when the battery capacity is 1/5. The beekeeper has enough time to change battery or reload it.:

Scale: Bees mountain 1  
Battery capacity is 1/5. Please, replace battery.

**NOTE: All warning messages are active in both working modes of SMS Scale!**

## 9. BALANCE CHECK

There are two ways of checking the balance:

1. USSD codes
2. SMS commands

Settings are done by following commands:

**CREDIT [space] SET [space] [operators USSD]**

**CREDIT [space] SET [space] SMS [space] [SMS command of mobile operator]**

After setting the commands, check the balance simply by sending **CREDIT**

There is a shortcut to check the balance, which doesn't require previous settings and it is done by following commands:

**CREDIT [space] [USSD code of mobile operator]**

**CREDIT [space] [SMS command of mobile operator]**

## 10. FREQUENTLY ASKED QUESTIONS

- **The SMS Scale sends message: "Bad command!"**

Make sure you've typed correct command from the beginning in all capital letters.

- **The SMS Scale sends messages: "Time is not synchronized because the APN is not set!" or "Command is not executed because the APN is not set!"**

Set the APN parameters according to the instructions.

- **The SMS Scale sends message: "Command is not executed because it was not realized communication with GPS satellites and APN is not set!"**

Make sure GPS antenna is properly connected, step out on the open area in order to connect GPS module with satellites, then set the APN according to the instructions.

- **The SMS Scale sends message: "Command is not executed because e-mail parameters are not set!"**

Set the e-mail parameters according to the instructions.

- **The measurement is incorrect**

Make sure the scale is properly leveled and check the value of the parameter TARE

- **The SMS Scale does not send an SMS (SMS-measurement)**

1. Make sure that your mobile phone number and contact name are added to the SIM card correctly (must be the User)
2. Check the status of the pre-paid cards credit

- **SMS measurements arrive later than the usual time**

This problem is mainly caused by the state of the mobile network operator, but be sure to check the signal strength of GSM in the SMS message you receive (the value must be between 7 and 31 for it to work smoothly).

- **SMS measurements arrive later than the usual time**

The problem is caused by the condition of the network of mobile operator. The GSM signal strength in text message you receive must be between 7 and 31.

- **Sometimes the SMS Scale, on the first "ring" reject the call and don't send the SMS message (SMS-measurement)**

The problem may be caused by bad conditions of the mobile operator network. Wait for a while and call again.

- **When you call the SMS Scale occasionally you hear the message that "mobile subscriber is not available at the moment"**

1. The problem is caused by the condition of the network of mobile operator.
2. Check the GSM signal (must be a value between 7 and 31 for it to work smoothly).

- **When you call the SMS Scale occasionally you hear the message that "mobile subscriber is not available at the moment"**

1. If the frequency of blinking of the yellow indicator light on the SMS scale electronics is once per second - Area is not covered by the GSM signal

2. There was a power outage due to a discharged battery. It is necessary to recharge the battery.