Portable Counseling Device

MSA mini

User's Manual ver.0.95

truesystems

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1. Safety Information

⚠ **Warning**	Indicates a danger that may result in death or serious injury if used improperly.
⚠ **Caution**	Indicates that a danger that may result in injury or properly damage if used improperly.
Note	Indicates that a possibility that may result in reducing the performance of the MSA mini, or disabling some functions or MSA mini itself.

⚠**Warning**
●Should the product have an abnormality such as producing smoke or an unpleasant odor, stop operation. If you continue use, this may cause fire or electric shock. If you find any abnormality, unplug the connector from the power source or switch power off, and contact the supplier/dealer where purchased or our company for repair. NEVER service this product by yourself as this is extremely dangerous and will void the product warranty. ●Should any liquid such as water enter the inside of the MSA mini, unplug the connector from the power source or switch power off, and contact the supplier/dealer where purchased or our company for repair. If you continue using it, this may cause fire or electric shock. ●Do not modify or disassemble the product; otherwise, this may result in a fire or an electric shock and will void the product warranty. ●Do not use a damaged cable. If the cable is damaged, contact the supplier/dealer where purchased or our company. If you continue use, this may cause fire or electric shock ●Do not damage, break, modify, bend forcibly, pull, twist, or bind the cable. Or do not place a heavy object on the cable or heat it; otherwise, the cable may be damaged, resulting in fire or electric shock. ●Do not plug or unplug the cable with wet hands; otherwise, you may suffer an electric shock. ●When the product is transported from a cold location to a warm location, this may cause condensation to occur. If this happens, do not connect the product to the power source until moisture disappears; otherwise, this may result in fire or electric shock.

⚠Caution
●NEVER clean the MSA mini with pure benzene, thinner, or alcohol; otherwise this may cause the discoloration or deformation. If it is heavily smeared, wipe it off with a wrung-out lint-free cloth moistened with a diluted neutral detergent or a very mild water & alcohol solution, and then dry it with a soft lint-free cloth. NEVER wash the MSA mini directly with water. ●Do not allow a strong impact to the MSA mini by dropping or hitting it; otherwise, this may result in a breakage and/or malfunction. ●A stained lens may cause unclear images. In this case, contact the supplier/dealer where purchased or our company for repair

FCC Information to User :
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures: • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and receiver. • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help.
Caution :
Modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
FCC Compliance Information :
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2. Starting MSA mini

2.1 Introduction

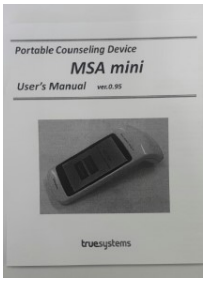
MSA mini is a high quality portable device for skin, hair/scalp measurement and analysis. Equipped with scope and moisture sensor, MSA mini performs image capturing and analyzing to evaluate skin condition on a scale from 0 to 99. Moisture sensor at MSA mini enables user to measure the degree of hydration of skin stratum corneum.

2.2 System Components

- MSA mini Main Device with built-in lens (30x/120x dual lens)
- mini USB cable for charging
- User’s Manual

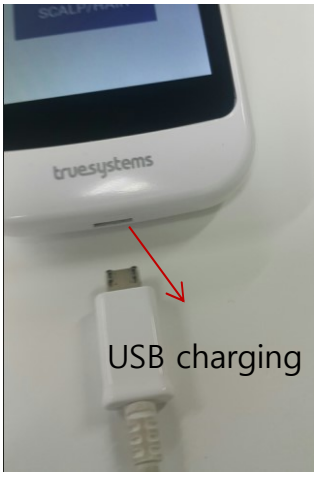
Main Unit

Manual



Mini USB cable

2.3 Parts Name



3. Main Unit Operation

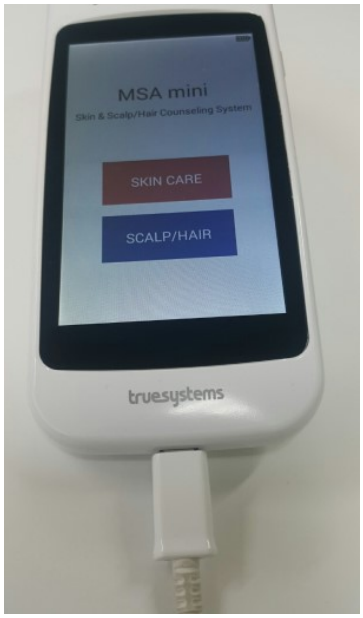
3.1 Power On/Off

Power On/Off of MSA mini is done by a simple button operation. By pressing the power button for about 2~3 seconds, the MSA mini will be turned on with beep sound. It will take about 40 ~50 seconds to boot up the Android OS. To power off the MSA mini, press the power button for about 2~3 seconds until the power off message is shown and select ‘Yes’ button.

3.2 Charging the MSA mini

The MSA mini can be charged by connecting the usb port with external USB power cable. When user plugs USB power cable on MSA mini, the green LED

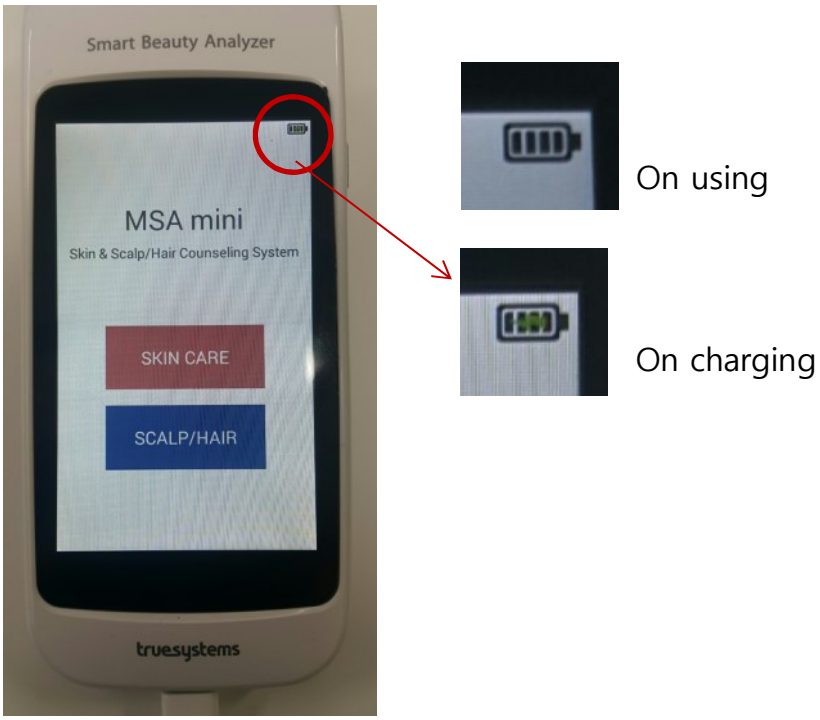
indicator will be turned on left top of LCD, and charging symbol on the battery symbol on screen will be displayed.



Note: The LCD screen of MSA mini will be turned off automatically after 10 minutes without any operation to save the battery consumption. And the LCD will be On if power button is pressed slightly.

※ **Battery charge status icon**

Battery charge status icon is located in the right top of LCD Screen.



3.3 Battery Replacement

If the battery is not charging or discharged too quickly, the battery needs to be replaced. You may contact your supplier for battery replacement or follow these instructions after getting consulting from the provider of MSA mini.

To replace the battery, unscrew the battery cover on the rear side of MSA mini and simply change the battery. The screw may not be seen, because it is taped in white sticker. You should detach the sticker before unscrewing the screw on battery cover.

Unscrewing

3.4 Adjusting lens focus

MSA mini has dual lens with 30x and 120x magnification lens which can be adjusted by rotating knob. To change the magnification 30x or 120x, pull the knob for 30x, push the knob for 120x. To adjust the lens focus, rotate the knob slightly in the direction to see skin image clearly.

4. Program Preparation

4.1 Device Booting

To boot on the device, press the power button for 2~3 seconds until hearing a beep sound. The booting image will be displayed for approximately 40 seconds. Wait until the Main screen will appear.

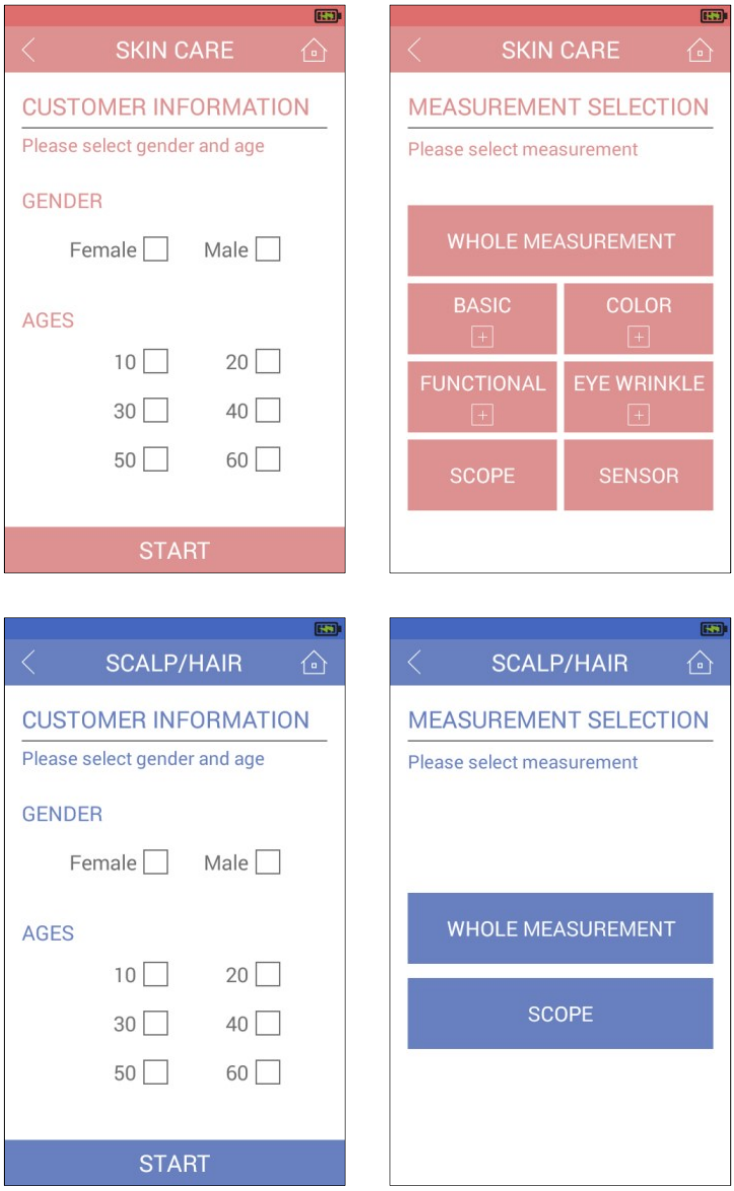
Booting Screen

4.2 Main Screen

The main screen has two modes. One is the SKIN CARE mode and the other is the SCALP/HAIR mode. You can choose SKIN CARE or SCALP/HAIR by selection of the button.

4.3 Start Measurement : Customer Information

By choosing [SKIN CARE] or [SCALP/HAIR] in the Main screen, “CUSTOMER INFORMATION” screen will be displayed as below. User needs to check the gender and age and press ‘START’ to start the measurement.



5. Measurement Procedure

5.1 Measurement Item Selection

User can choose individual measurement item for counseling.

The [SKIN CARE] measurement items include

Whole Measurement : to analyze whole items

Basic : to measure skin texture, sebum and moisture

Color : to measure skin color and pigmentation

Functional : to measure sebum, pore and elasticity

Eye Wrinkle : to compare the eye wrinkle with standard sample image

Scope : to see the image depending on each lighting mode
(Normal, PL, UV mode)

Sensor : to measure moisture on skin

1) Select any measurement menu and put the MSA mini on cheek or eye wrinkle to be measured. And wait for a second or press the 'Analysis' button

2) All measurements will be done by predefined step automatically, so just put the scope on skin for some seconds.

And [SCALP/HAIR] measurement items include

Whole Measurement : to analyze Sebum, Keratin, Sensitivity and Density on scalp

Scope : to see the image depending on each lighting mode
(Normal, PL, UV mode, 120x mode)

1) Select 'Whole Measurement 'to start analysis or 'Scope' menu to see the live image

2) Put the MSA mini on scalp and wait for a second or press the 'Measure' button

3) Measurements will be done by predefined step automatically, so just put the scope on scalp for some seconds.

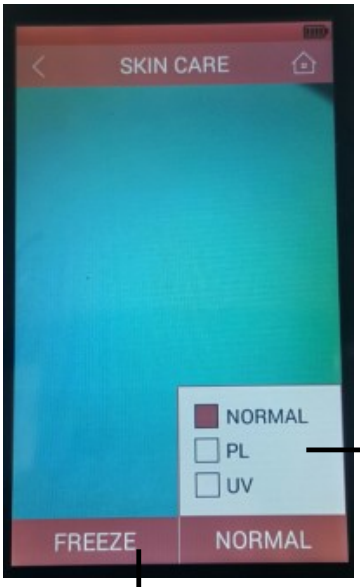
5.2 Scope mode

In the Scope mode of SKIN CARE, lighting mode can be changed, Normal, PL or UV lighting. And in the Scope mode of SCALP/HAIR, lighting mode can be changed to Normal, PL, UV lighting and 120x mode.

[Measurement items and the tools for each measurement]

Parameter	Lighting Mode	Measurement Target
Skin Texture	Normal	Skin
Pigmentation	PL	Skin
Porphyrin on Pore	UV	Skin, Scalp
Hair condition	120x Normal	Hair

Live image can be frozen by [FREEZE] button and released by [LIVE]. Lighting mode can be changed by sliding up menu.



[Lighting mode]
NORMAL : texture mode lighting
PL : pigmentation mode lighting
UV : UV mode lighting

FREEZE : to stop the live image
LIVE : to release the frozen image

Step 1: Position

Place the scope on target. For [Skin texture], [Pigmentation], [Skin Color], [Pore], [Eye Wrinkle], skin should be a direct target for measurement. Meanwhile, for [Sebum], [Keratin], skin indicators (sebum and keratin tapes) should be the target.

To get the best image, press lens slightly to skin and change the pressure until get clean image. If the captured image is blurry, adjust focus of lens by rotating the knob.

※ When captured image is blurry;

- Apply only slight pressure to MSA mini during the lens contacts on skin. Strong pressure will reduce image quality
- Adjust focus of lens by rotating knob
- No make-up is recommended in the clients' skin. Any make-up may cause inaccurate measurements

Step 2: Freeze, Analysis

By pressing "Freeze" button, live images will be changed to frozen image.

5.3 Moisture Measurement

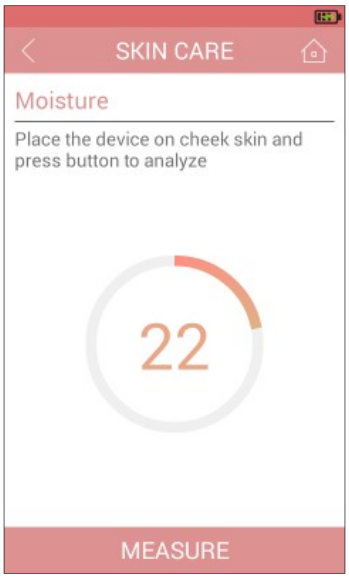
When user selects [SENSOR] in the menu, MSA mini prepares moisture measurement. LCD Screen will look like the picture below.

Step 1: Preparation

Put the MSA mini on skin for the sensor pins to touch the skin equally and press the sensor surface with same pressure and press [MEASURE] button.

Step 2: Moisture Sensor Ready

Press [MEASURE] button to start the moisture measurement. A beep sound should be heard.



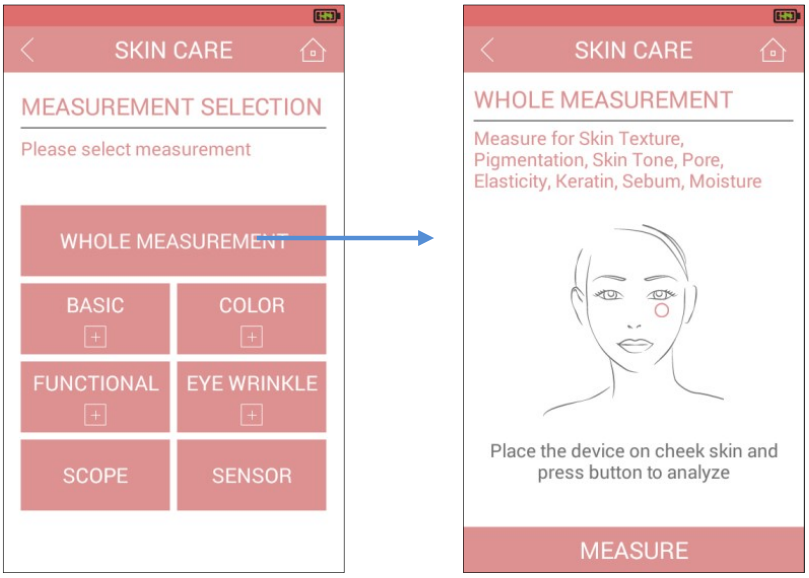
When moisture sensor is ready to measure on skin, press the [MEASURE] button and will show the result with beep sound.

5.4 Counseling Procedure in SKIN CARE

In [SKIN CARE] measurement screen, different measurement course can be selected.

1. WHOLE MEASUREMENT

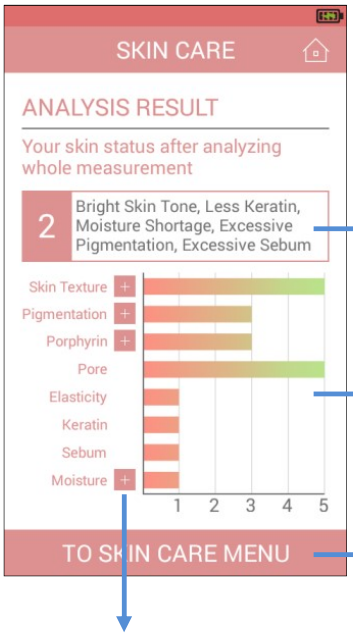
   Select the [WHOLE MEASUREMENT] button and MSA mini will be ready to measure the skin.



   Put the MSA mini on face skin as in the picture and wait for camera mode for some seconds or press [MEASURE] to start the measurement and wait until beep sounds.

   Whole measurement will take images and analyze skin texture, pigmentation, skin tone, pore, elasticity, keratin, sebum and moisture at one time measurement. Elasticity is calculated based on roughness of skin by image. Keratin and sebum are also calculated by image, which are related to color and shining etc. (These may not accurate comparing to use tapes)

   After measurement, the result will be shown as following result screen.



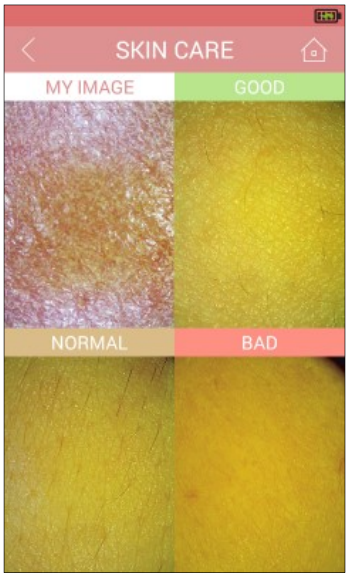
Summary of skin condition with skin level between 1 ~ 5 levels.

Result bar graph. Higher number means better condition.

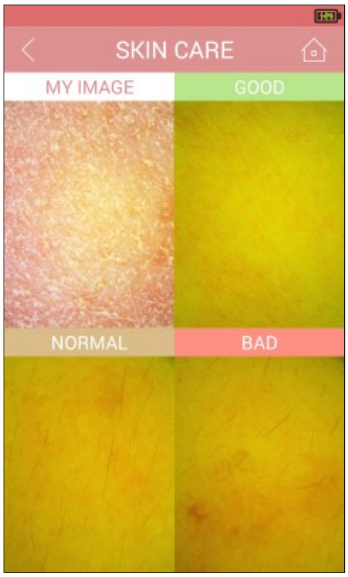
To go to SKIN CARE menu

To see the detail image, press [+] button in each result screen

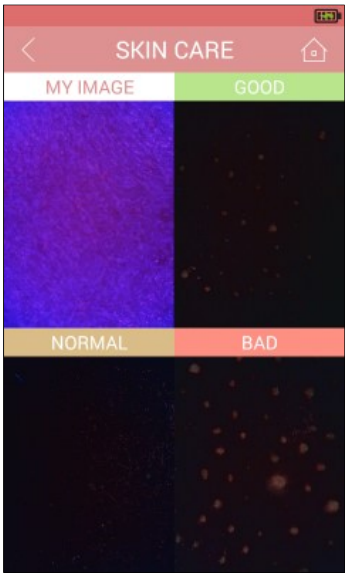
Skin Texture [+]



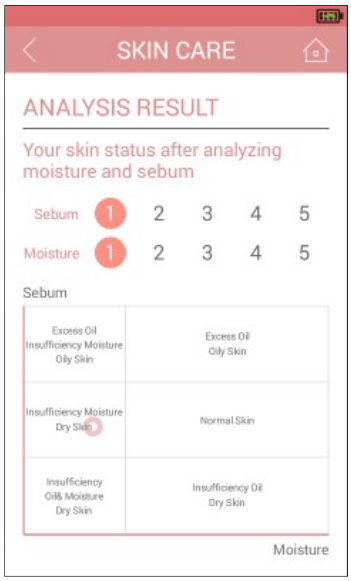
Pigmentation [+]



Porphyrin [+]

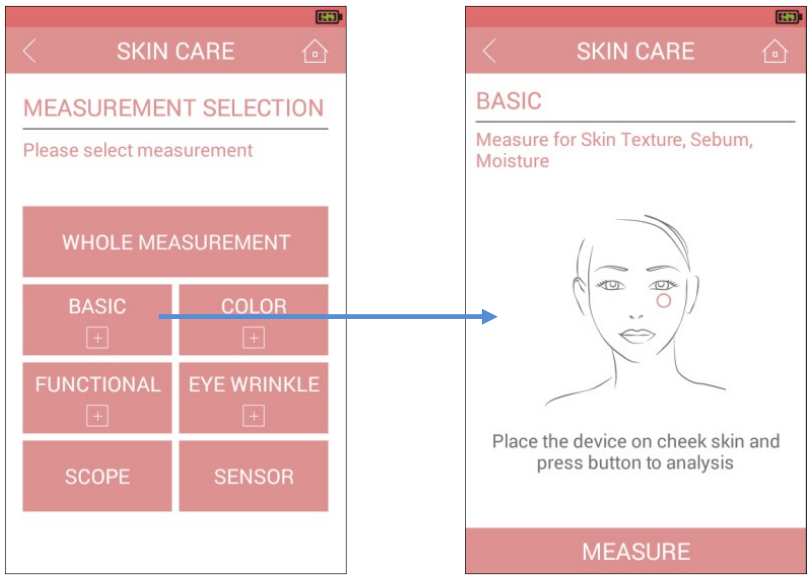


Moisture [+]

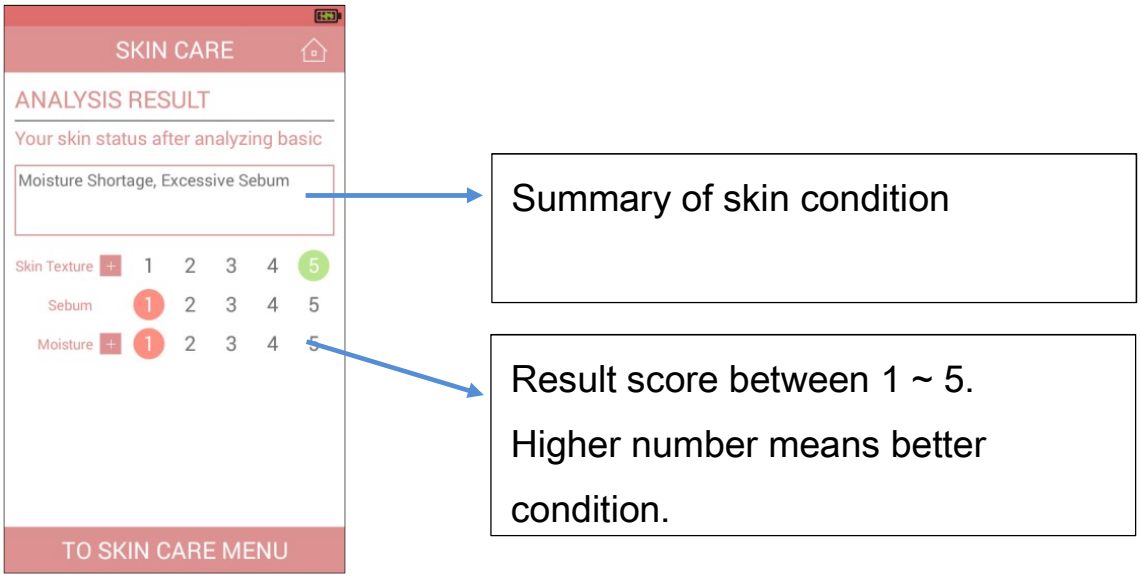


2. BASIC

Select [BASIC] button and MSA mini will be ready to measure skin texture, sebum and moisture. Place the MSA mini on cheek and press the [MEASURE] button to start the imaging and analysis.

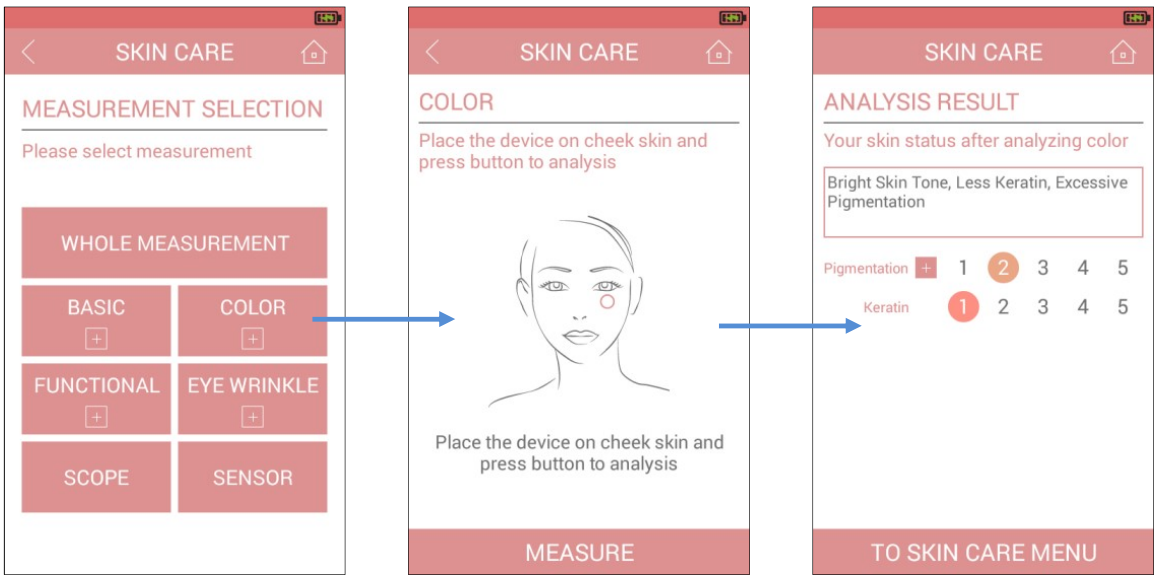


And the result will be shown as



3. COLOR

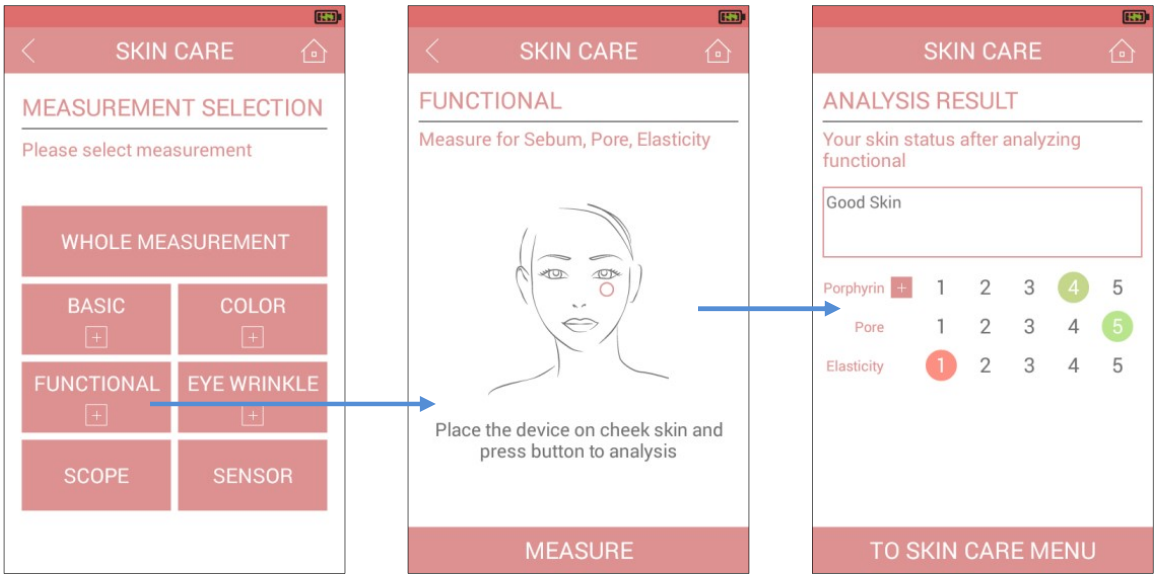
In COLOR measurement, MSA mini will measure skin color and pigmentation.



Place the MSA mini on cheek and press the [MEASURE] button to start the imaging and analysis.

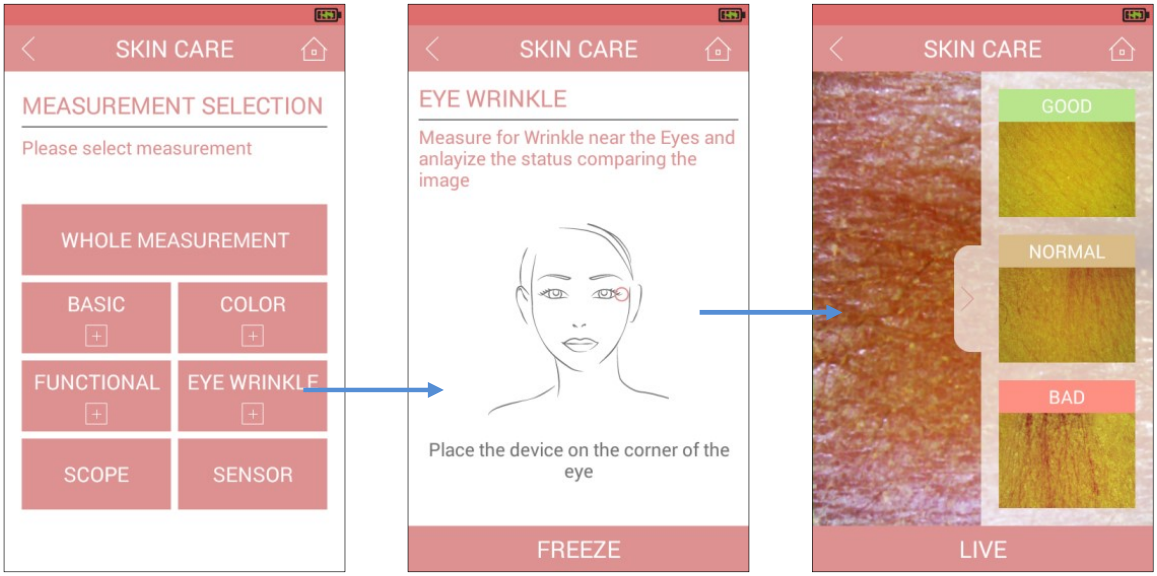
4. FUNCTIONAL

[FUNCTIONAL] will measure the sebum, pore and elasticity.



5. EYE WRINKLE

[EYE WRINKLE] will take image of eye wrinkle and compare the image with standard sample image



Select [EYE WRINKLE] and place the MSA mini on eye rim and wait for

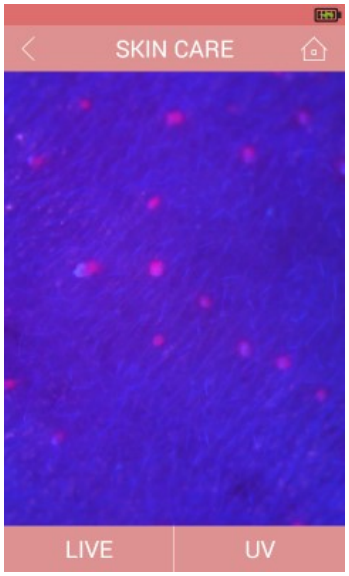
camera be ready. Freeze the eye wrinkle image to be compared and open the standard sample images as in the picture. In case you want to image the eye wrinkle again, press the [LIVE] or [MY SKIN] button.

6. SCOPE

In [SKIN CARE], three different lighting mode can be selected as Normal, PL or UV mode to see the skin texture, pigmentation or porphyrin on pore.

Normal mode

PL mode

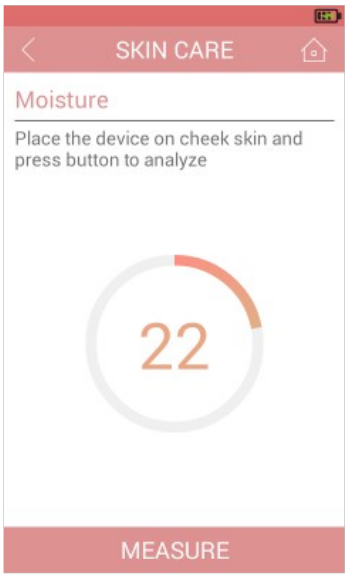


UV mode

7. SENSOR

To measure the moisture on skin, select the [SENSOR] and put the MSA mini on skin to be measured and press the [MEASURE] button to start the sensor measurement.

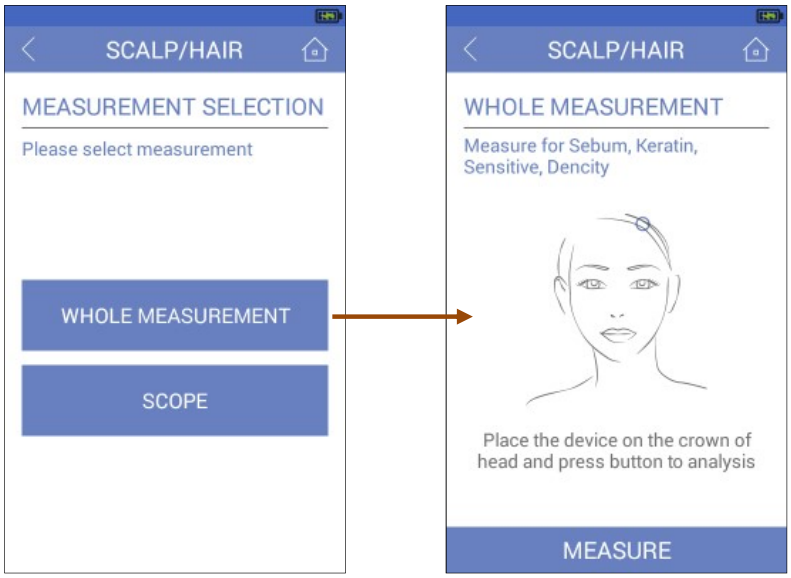
To measure the moisture again, MSA mini should be detached from skin once to get accurate measurement.



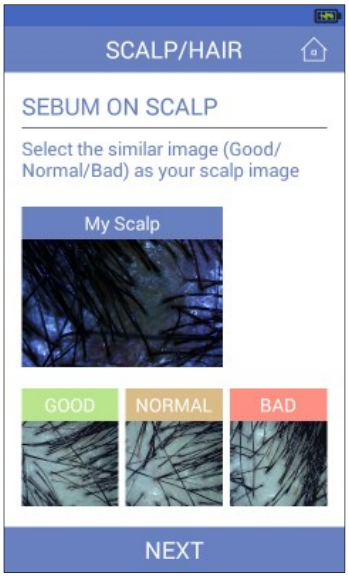
5.5 Counseling Procedure in SCALP/HAIR

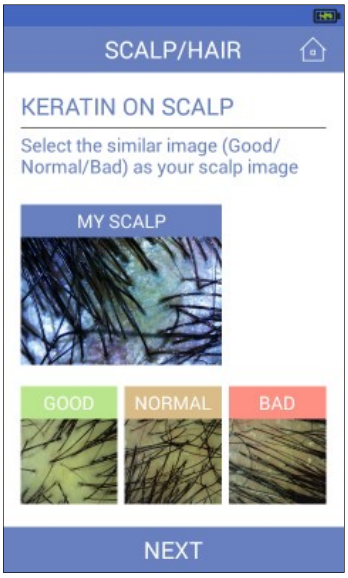
In [SCALP/HAIR] measurement screen, there are two measurement courses.

1. WHOLE MEASUREMENT
   Select the [WHOLE MEASUREMENT] button and MSA mini will be ready to measure the scalp/hair, such as sebum, keratin, sensitivity on scalp and density of hair.

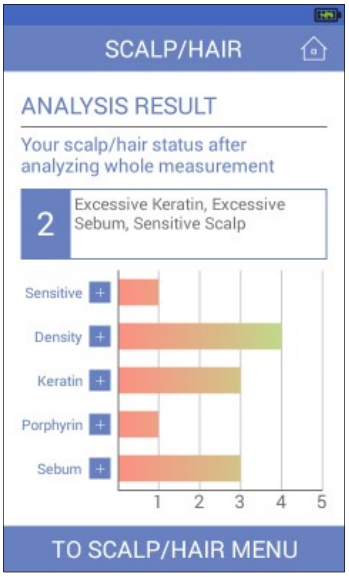


Place the MSA mini on scalp to be measured and press [MEASURE] button to start the measurement. MSA mini will automatically take pictures in different lighting conditions. After a few seconds, your images for sebum and keratin will be show to be compared and selected with reference images.





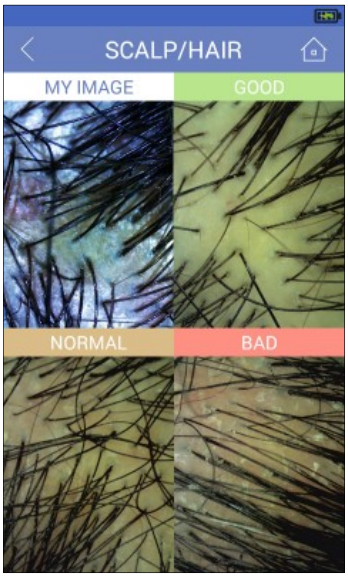
Others such as porphyrin and sensitivity on scalp and hair density will be calculated automatically and shown in result screen. To see the images t aken and compared, press [+] button in each graph.



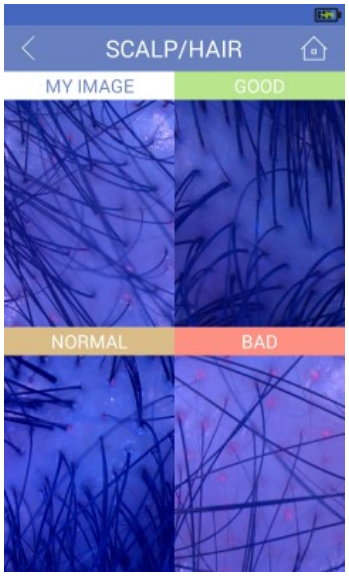
Sensitivity[+]

Density[+]

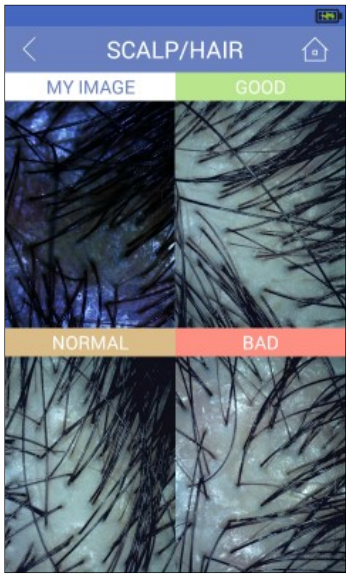
Keratin[+]



Porpyrin[+]



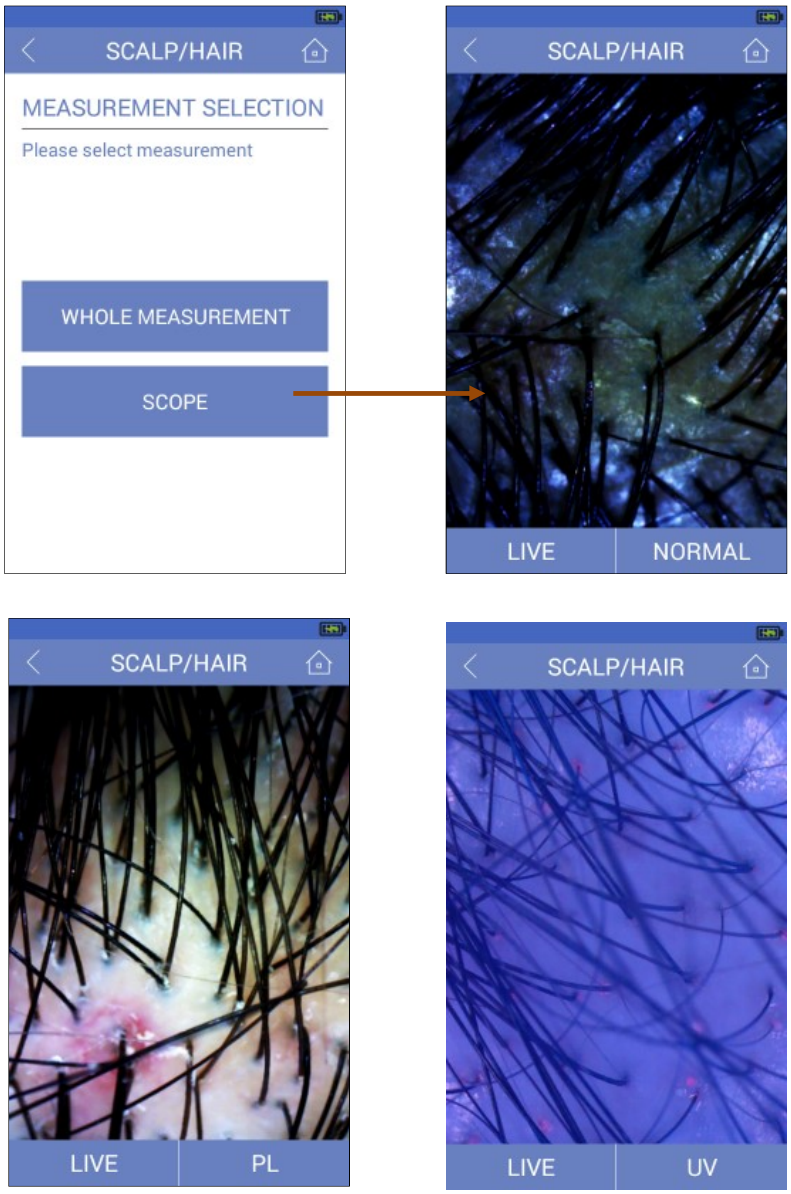
Sebum[+]



2. SCOPE

Same as in Skin, the [SCOPE] function views scalp or hair according to different lighting condition, Normal, PL, UV or 120x magnification.

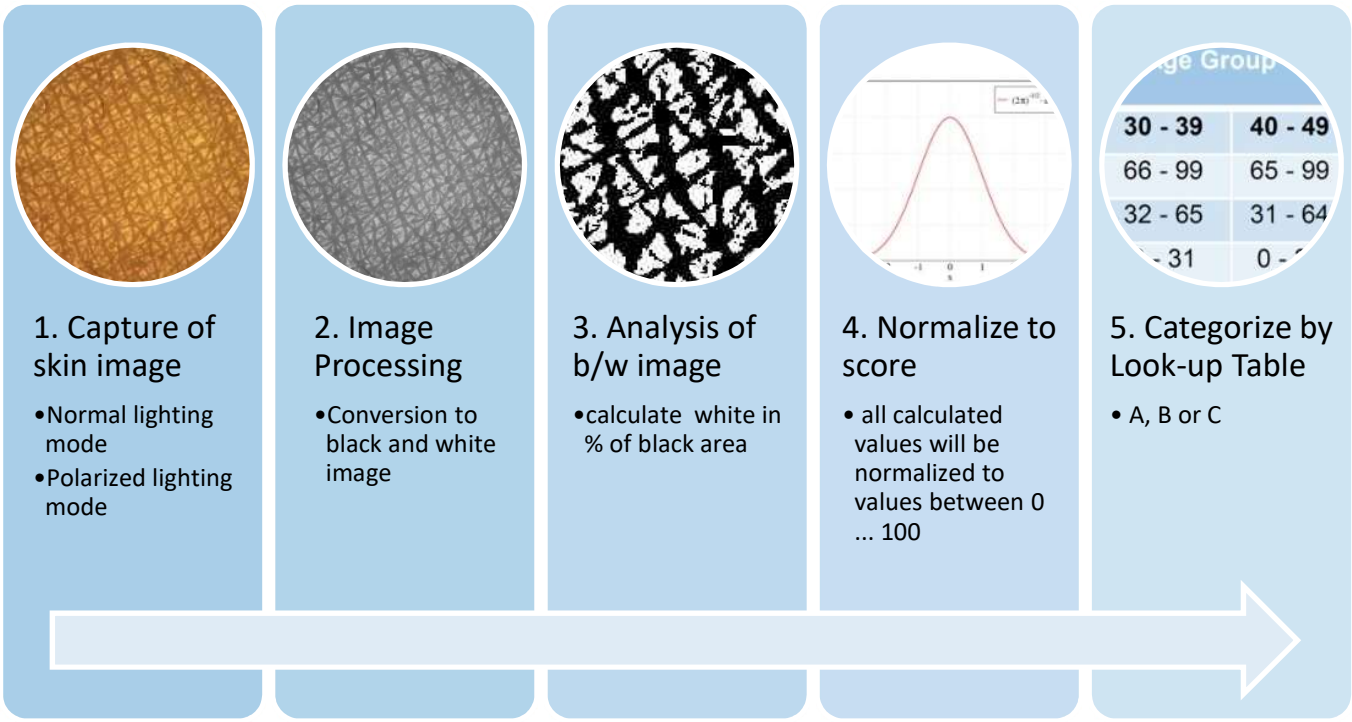
With 120x lens mode, enlarged hair can be seen.



5.6 Analysis of Results

1. Grading and interpretation

1) Analysis steps



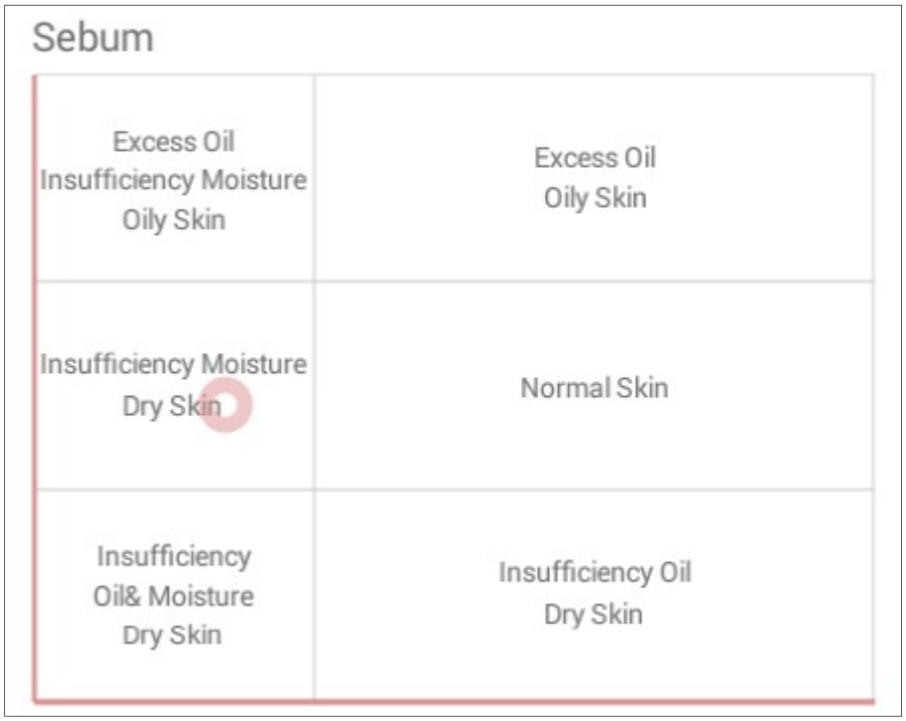
2) Look-up Table for grades [Example]

[Image]

Grade	Age Group					
	<= 19	20 - 29	30 - 39	40 - 49	50 - 59	>=60
1	0 – 20	0 – 19	0 - 18	0 - 17	0 - 16	0 - 15
2	21 – 40	20 – 39	19 - 38	18 - 37	17 - 36	16 – 35
3	41 – 60	40 – 59	39 - 58	38 - 57	37 - 56	36 - 55
4	61 – 80	60 -79	59 - 78	58 - 77	57 - 76	56 – 75
5	81 - 99	80 - 99	79 - 99	78 - 99	77 - 99	76 – 99

2. Determination of skin types

In addition to moisture, MSA mini evaluates the amount of sebum on the particular area of skin. This allows users to check the balance of both parameters and determine the resulting skin type. MSA mini categorize the six skin types as following diagram.



6. Product Specifications

Item	Details	Remarks
CPU	XBurst dual-core CPU, 1.2 GHz	MIPS Ingenic M200
Memory	DDR2 512MB, NAND 4GB	
OS	Android 4.4.4	
LCD	4.0" touch TFT LCD	Resolution 800 x 480 pixels
Camera	1/3" 2MP CMOS	MT9D131
Lens	Dual Lens(30x, 120x)	Select by knob
Sensor	Skin Moisture (0 ~ 99)	Pin type, Impedance measurement
WiFi	802.11 b/g/n	
Lighting	White LEDs, UV LEDs	Normal/PL/UV mode
Data Communication	WiFi	
Battery	Li-Polymer, 2,000mAh 3 hours continuous operation	Rechargeable
External I/O	USB	Only for Charging
Charging	USB cable	
Dimension **Weight**	180(L) x 68(W) x 67(T) mm About 200 gram	
Operating Condition	0 ~ 40 °C 5 ~ 85 %RH	

7. Warranty and Service

7.1 Terms of Warranty

1) Warranty information is included with this product. Be sure to record the supplier name, purchase date, and warranty period when receiving the MSA mini and keep this information in a safe place.

2) The warranty period of MSA mini is one year from the purchase date.
If any malfunction occurs during proper and normal use within the warranty period, then free-of-charge servicing will be carried out by True Systems or representative according to the terms of the warranty.

3) Service after the warranty period has expired will incur charges.
When functions of this device are judged to be restorable through repairs, service can be completed with charges at the customer's request.

4) Repairs and replacement of disposable / replacement articles should be managed by the user and may be completed with charges.

5) Please contact the supplier where purchased or True Systems if there are any concerns about details of repair items or service.

When requesting service, please provide following information.

- Product Name : MSA mini
- Serial Number :
- Purchase Date :
- Malfunction Description :
- User Name and Contact Information: (E-mail / Phone number)

7.2 Warranty Card

Model	MSA mini **Serial No**.: MM-12345
Warranty period : 1 year from (day) (month) (year)	
Customer	Address : Tel : Name : E-Mail

The product described on this certificate is hereby certified as having passed stringent quality control and inspection prior to shipment and it is hereby subject to warranty in accordance with the following conditions.

1. The manufacturer shall repair the MSA mini at the manufacturer's expense if a malfunction occurs during the warranty period under normal usage.
* This warranty card will not be reissued, so keep this carefully.

2. Even if the warranty is still valid, repair will be completed at the customer's expense under the following conditions:
   a) If breakdown or damage occurs as a result of improper usage, inadvertent handling errors, or modification of the product.
   b) Breakdown or damage occurs as a result of fire, earthquake or other natural calamity.
   c) This warranty is not valid if the warranty card items are not completed, the sales store details are not completed, or there has been any amendment to the details.

Support Contact Details:

True Systems Co., Ltd.
D-603 Bundang Techno Park, 700 Pangyo-ro,
Bundang-gu, Seongnam-city,Gyeonggi-do, Korea (13516)
Tel +82 – 31 – 712 – 8031
Fax +82 – 31 – 712 – 8041

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is con-nected.

• Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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True Systems reserves the right to change the specification without prior notice.
Application program can be changed or updated without prior notice.

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