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1 Overview

Huawei WatchFace Designer is a PC-based watch face design and editing software developed by Huawei. The watch face designer can use this software to quickly edit and

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output the watch face after completing the watch face image cut. Currently, this software supports Huawei watch face design specifications V1.0, V1.1, and V2.0. It is applicable to Huawei Watch GT, GT2 series sports watches, Band 4pro, B6 (Fides), Hestia, and Band 4 (Andes) smart bands, the software has a simple and elegant human-machine interaction environment, currently only in Windows. Designers only need to install software on the computer, export the watch face file, import the watch face file, and use the watch face quickly, greatly improving the work efficiency of designers making watch face.

2 Software Installation

Huawei WatchFace Designer uses the installation-free mode. You can decompress the software and double-click the .exe file to run it.

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2.1 Software Download

1)Download the software to Huawei Theme Center.:https://developer.huawei.com/consumer/cn/huaweithemes

Choose Register and Start Design > Development Tutorial > Tool Download > Download from the main menu. Select the Huawei watch face development tool to download.

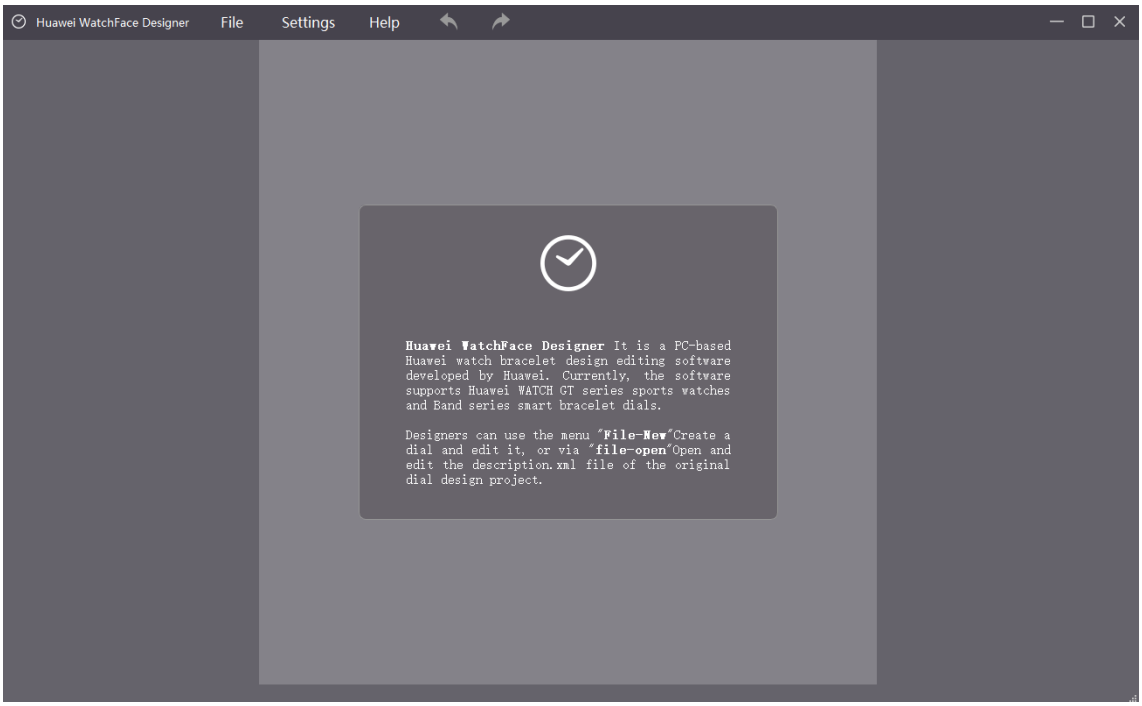
2)Click to selectWatch face developmentDownload the tool:https://developer.huawei.com/consumer/cn/doc/distribution/content/themes-design-tools

3 Function Description

3.1 Menu

There are three options on the menu bar: File, Settings, and Help. File is used to manage the watch face project, Settings is used to set the language of the watch face tool, and Help is used to set the user manual and about.

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3.2 Watch face project management

3.2.1 Newly created

The procedure is as follows:

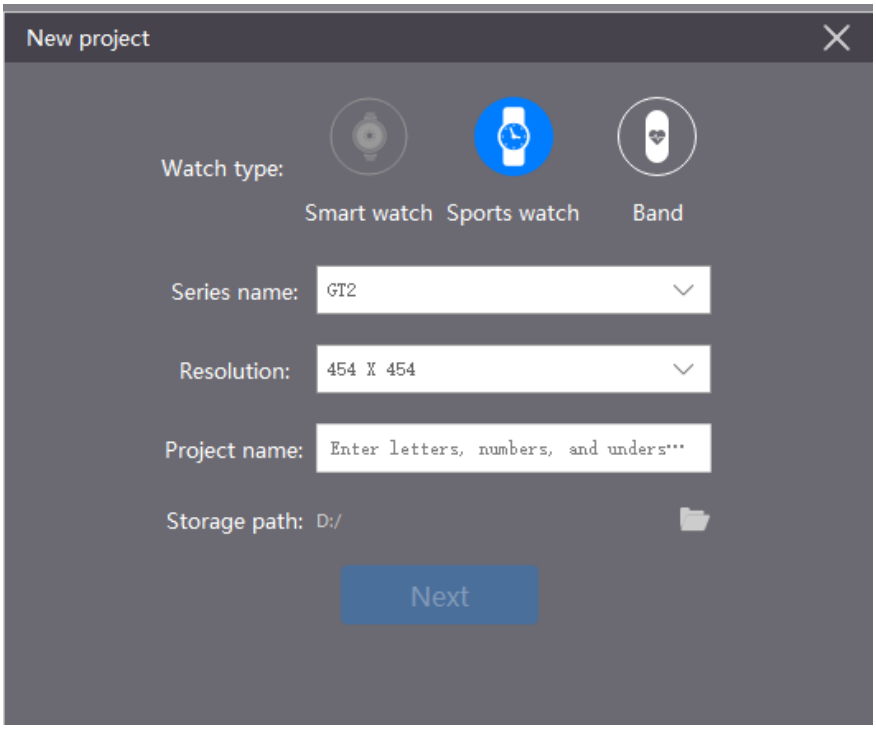
Step 1: On the menu bar, choose File > New. The New Project dialog box is displayed.

Step 2: Select the watch type, series name, resolution, project name, and save path.

Step 3: Click Next and enter the Chinese name, version number, developer, designer, add the effect drawing (optional, add it before exporting the watch face), and introduction (optional).

Part 4: Click Create to start the watch face design.

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Note:

Currently, the watch type can be Exercise Watch or Band. The series name can be GT or GT2, and the resolution can be 390 X 390 or 454 X 454.

GT(390:HONOR;454:GT)

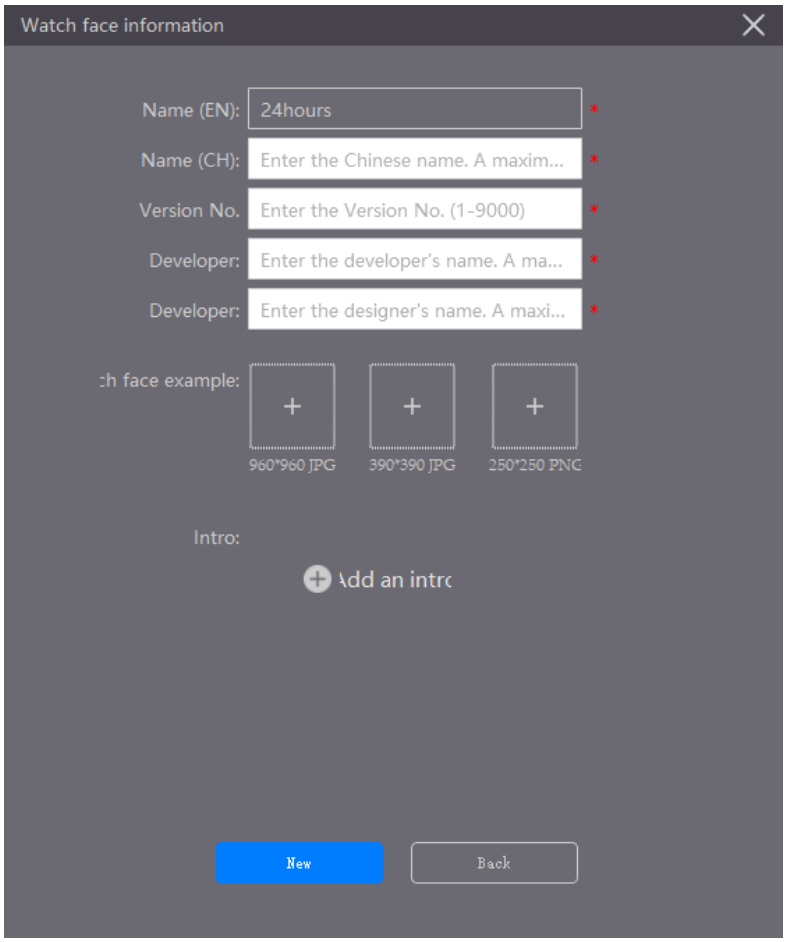
GT2 (390: GT Elegant; 454: GT Vibrant)

The band supports Band 4 Pro series (resolution: 120 x 240), B6 (Fides) series (resolution: 188 x 460), Hestia series (resolution: 280 x 456), and Band 4 (Andes) series (resolution: 80 x 160).

The project name can contain only letters, digits, and underscores (_), and cannot start with an underscore (_). Do not select a path containing special characters. Otherwise, the watch face resource package will fail to be exported.

Click Next. The Watch Face Information dialog box is displayed.

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The English name of the watch face automatically obtains the project name. The name, developer, and designer of the watch face can contain 6 Chinese characters or 19 letters, digits, or other characters. Enter a number ranging from 1 to 9000.

Watch face image: Add the watch face image in strict accordance with the required size and format,

The first image is used to display the watch face market details page (sport watch: 960 x 960, jpg).

The second image is used to display the watch face market list (sport watch: 390 x 390, jpg).

The third screen is used to display the watch face switching screen. (Sports watch: 216 x 216,png when the watch face size is 390 x 390, and 250 x 250,png when the watch face size is 454 x 454.)

The band is as follows:

Band 4pro: 480x960 (jpg), 195x390 (jpg), 120x240 (bmp)

B6(Fides): 392x960 (jpg), 159x390 (jpg), 120x294 (png)

Hestia: 589x960 (jpg), 239x390 (jpg), 157x255 (png)

Band 4(Andes): 480x960 (jpg), 195x390 (jpg), 80x160 (bmp)

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Introduction: Multiple languages are supported for display in different languages. The supported languages are as follows:

English
danish
German (German)
Greece Language (Greece)
british
Spanish (Europe)
Latino Spanish
Finnish
French (Europe)
French (Canada)
Hindi
Croatian
Hungarian
Indonesian
Italian
Japanese
Korean
Norwegian (written)
Netherlands language
Polish
Brazilian Portuguese
russian
swedish
Thai
Turkish
Vietnamese
Simplified Chinese (China)
Traditional Chinese Hong Kong
Traditional Chinese (Taiwan)

3.2.2 Open

On the menu bar, choose File > Open. In the displayed dialog box, select the description.xml file in the saved project folder to open the project.

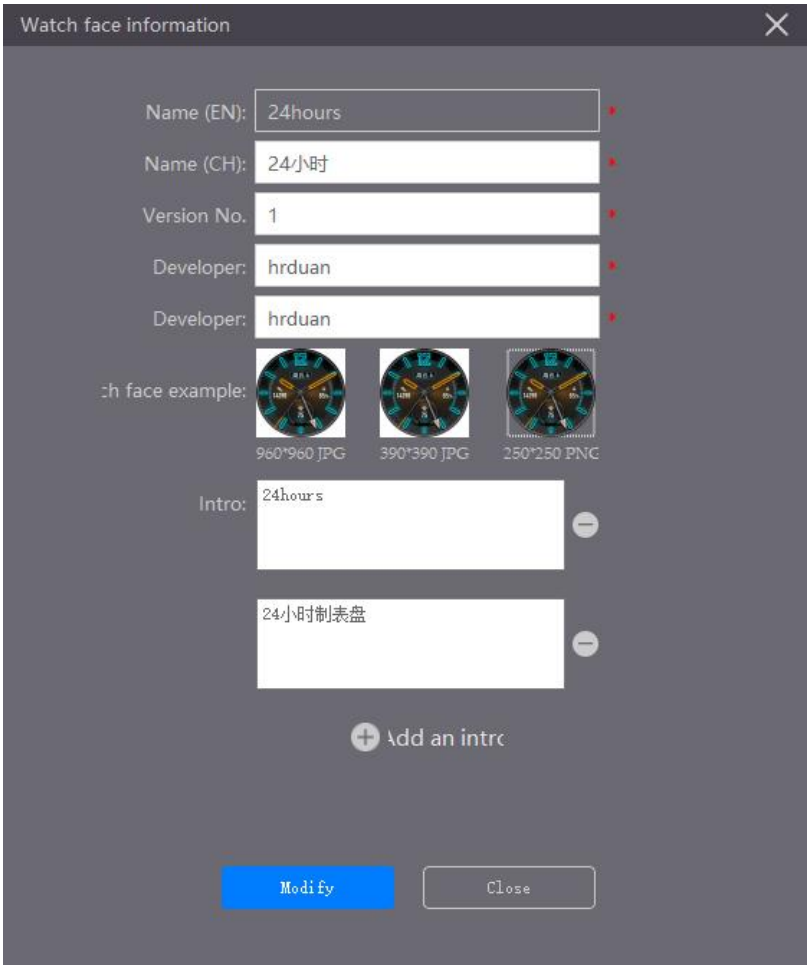
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3.2.3 Save

On the menu bar, click File and choose Save to save the current maintenance mode so that you can edit the maintenance mode again.

3.2.4 Watch face information

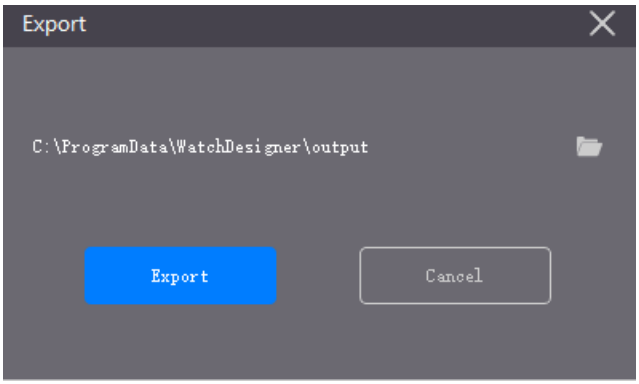
On the menu bar, choose File > Watch face information to modify the version number, Chinese name, designer, developer, preview image, and introduction of the current watch face.



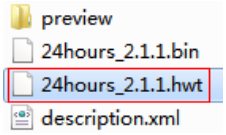
3.2.5 Export

On the menu bar, choose File > Export to export the current watch face as a .hwt file and upload it to the watch face marketplace. You can select an export path.

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The exported resource package file (.hwt) is as follows:

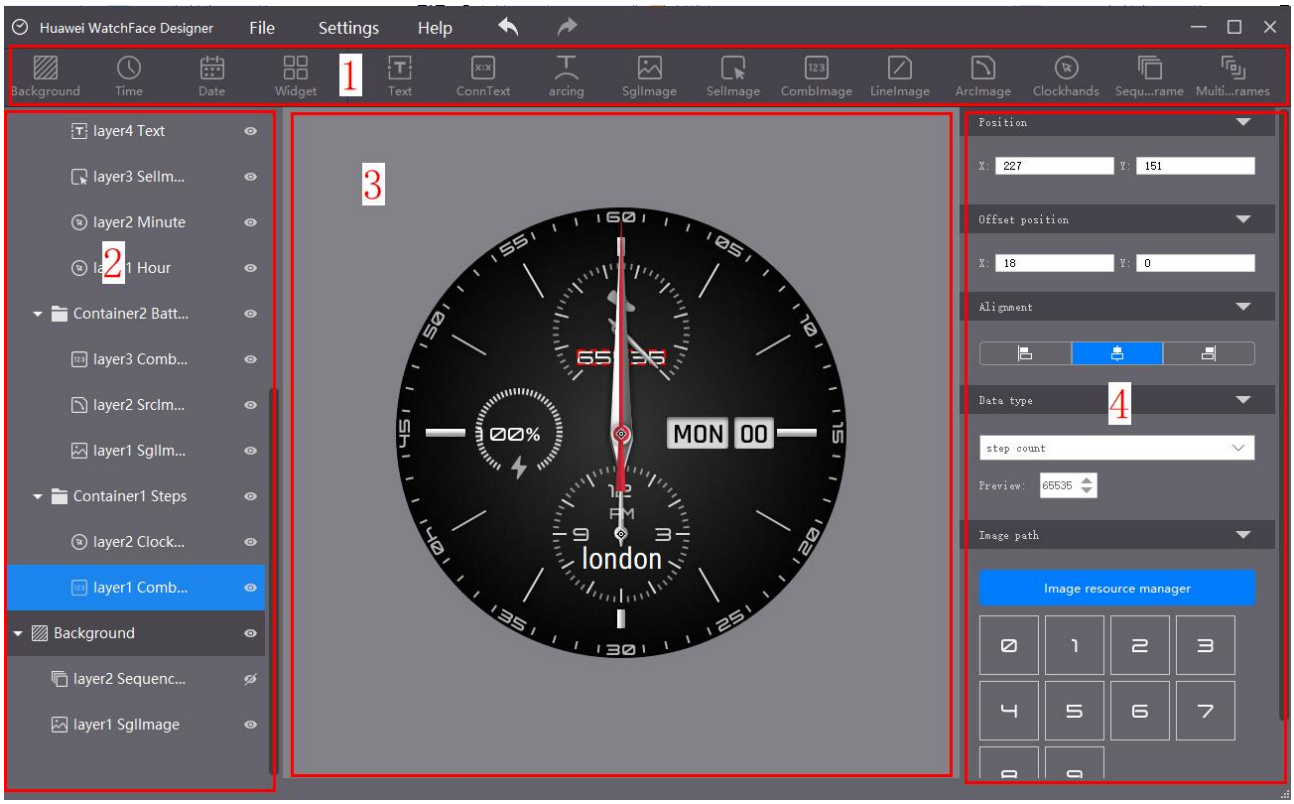


Note: Before exporting the watch face information, check whether the attributes of each control meet expectations and requirements.

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4 Watch face editing

4.1 Introduction to the Editing Area



(The figure shows the GT2 editing area.)

As shown in the preceding figure, the watch face editing area consists of four parts.

Control selection area (area 1). You can click the control icon or drag the icon to the layer management area to add controls to the watch face.

Layer management area (area 2), which is used to manage layers.


Hide or display controls in the preview area.

Double-click a control to rename the control.

Drag controls to adjust the hierarchy sequence.

The shortcut menu provides operations such as deleting a control.

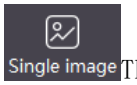
Note: The bottom layer control is also displayed at the bottom of the watch face.

Watch face preview area (area 3): displays the preview effect of the current watch face. You can also adjust the position of the control in this area.

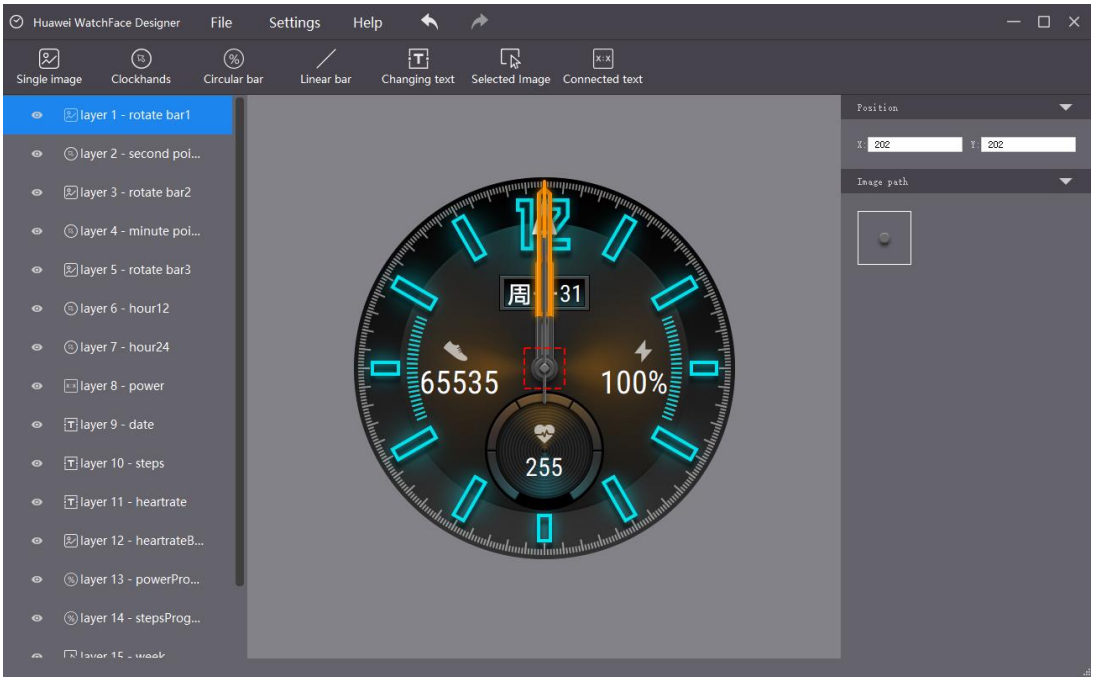
Area 4 for editing control attributes. When a control is selected, you can edit the attributes of the control in this area.

4.2 Motion table GT

4.2.1 monograph



The single-image control is used to display a static picture, which is usually used as the background picture or icon.



Description of operations in the attribute area:

1) Image path: Click the plus sign (+) to select an image.



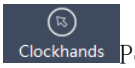
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

2) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

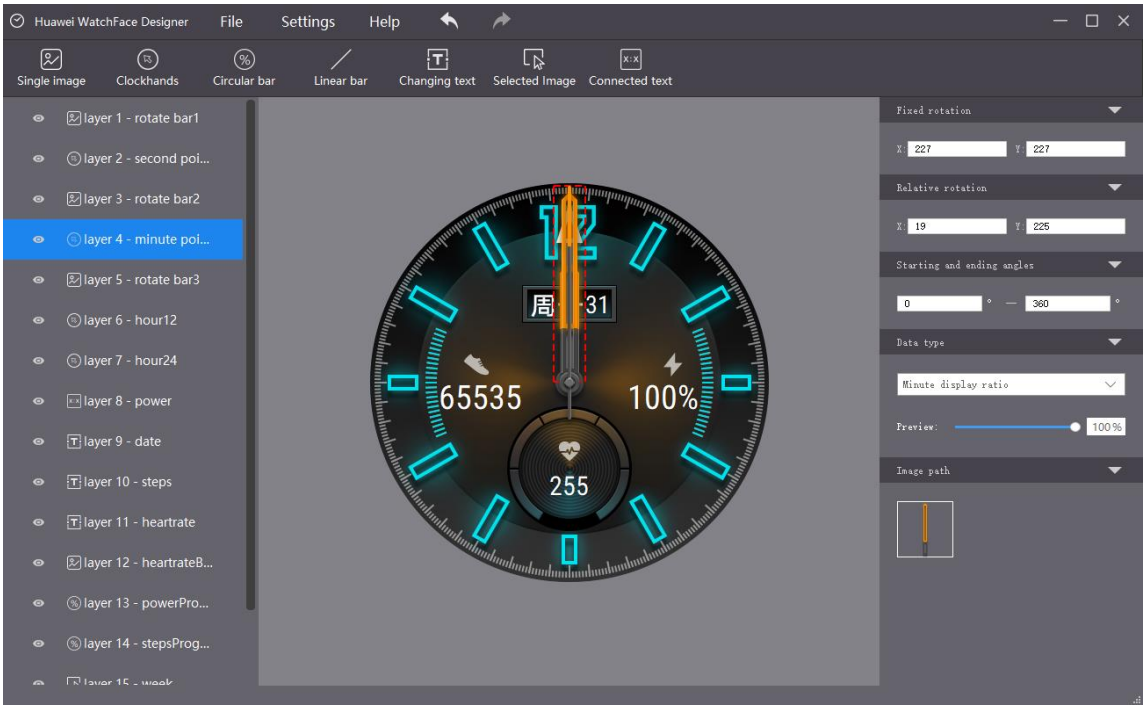


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

4.2.2 pointers

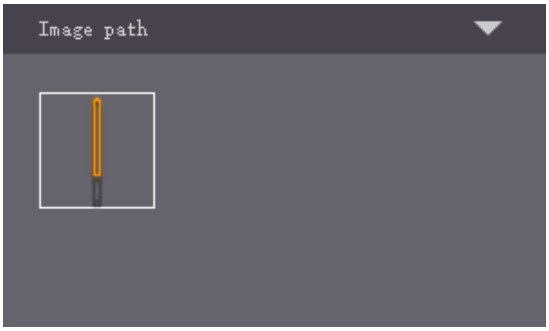


Pointer controls are used to dynamically rotate the pointer based on the actual value of the bound data, usually used as the hour, minute, and second hand.



Description of operations in the attribute area:

1) Image path: Click the plus sign (+) to select a pointer image.



Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

2) Absolute position of the rotation center X,Y: coordinates of the rotation center of the pointer image in the watch face coordinate system. For example, the pointer control rotates based on the center of the watch face. For example, the value of X and Y is (195, 195).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

Note: The rotation center point is the point around which the pointer picture rotates.

3) Relative positions X and Y of the rotation center: coordinates of the rotation center of the pointer picture in the pointer picture coordinate system. For example, the sample pointer picture rotates by using the position (14, 280) of the picture coordinate system as the rotation center.



Note: The origin (0, 0) of the coordinate system of the pointer image is the upper left corner of the pointer image. The values of X and Y cannot exceed the width and height of the picture. For example, if the size of the pointer picture is 50 x 300, the value of X cannot exceed 50 and the value of Y cannot exceed 300.

4) Start and End Angles: The angle range of the pointer picture to rotate around the rotation center. When the start angle is smaller than the end angle, the rotation is performed clockwise. When the start angle is greater than the end angle, the rotation is performed counterclockwise.



Note: The angle value must be within the range of －360 to 360. The value can contain four decimal places.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

5) Data Type: Specifies the type of data that the pointer binding displays for the watch system.



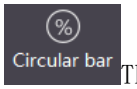
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Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For pointer controls, 0% – 100% correspond to the range of the start angle to the end angle.

The data types supported by the watch pointer control are as follows:

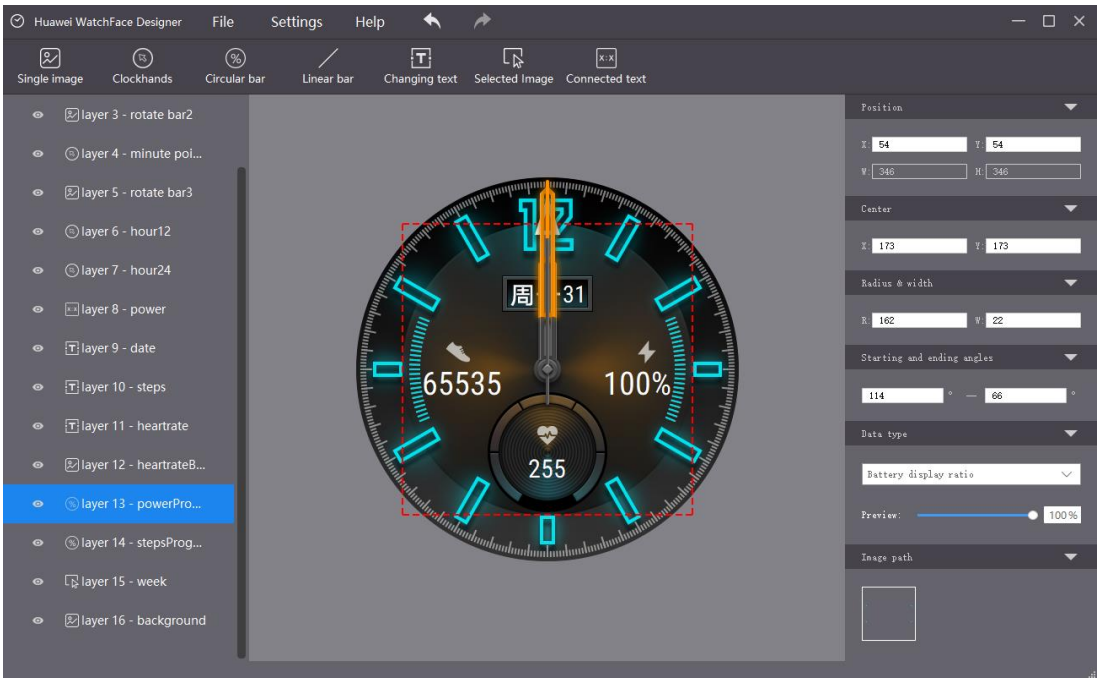
Data Name	Value range	Description
Clock ratio 12	[00.00%-100.00%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00.00%-100.00%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00.00%-100.00%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00.00%-100.00%]	Percentage of the current second to 60 seconds.
Date Ratio	[00.00%-100.00%]	Percentage of current logs to 31 days (100%)
Week Rate	[00.00%-100.00%]	Percentage of the current week to the seven days.
Battery Ratio	[00.00%-100.00%]	Percentage of the actual battery level to 100 when the battery level is 100
heart rate ratio	[00.00%-100.00%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00.00%-100.00%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00.00%-100.00%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00.00%-100.00%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00.00%-100.00%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
maximum oxygen uptake ratio	[00.00%-100.00%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

4.2.3 Round progress bar



The circular progress bar control is used to dynamically display the circular progress bar based on the actual value of bound data. It is usually used to display the progress of the target such as the number of steps and calories.

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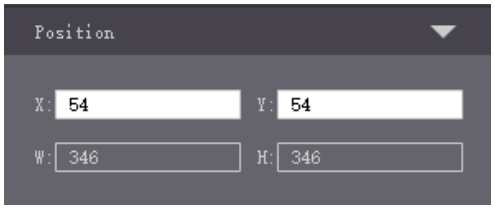
Description of operations in the attribute area:

1) Image path: Click the + icon to select the background texture image of the round progress bar.



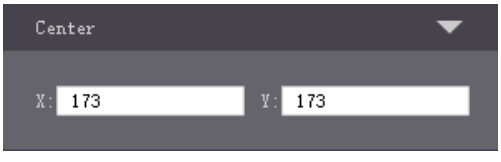
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px. You are advised to use a square image.

2) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

3) X and Y: coordinate of the circle center of the progress bar in the image coordinate system.



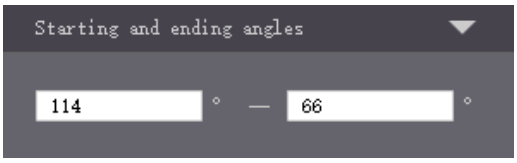
Note: The origin (0, 0) of the image coordinate system is the upper left corner of the image. It is recommended that the center coordinate of the circle be the center point of the image. For example, if the image size is 100 x 100, the recommended center coordinate is (50, 50).

4) Radius and Width R. W:R indicates the radius of the circle progress bar (distance between the center of the circle and the middle line of the progress bar); W indicates the width of the progress bar.



Note: It is recommended that the value of R be less than or equal to (image side length – W)/2. It is recommended that the value of W be less than the value of R.

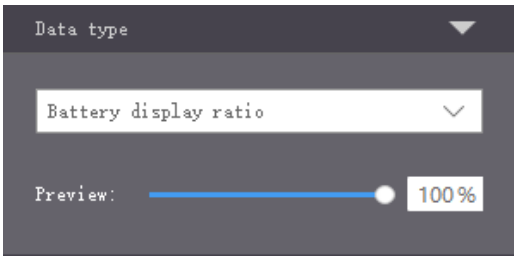
5) Start and End Angle: indicates the angle range of the round progress bar with the center as the center. The start angle is the start point of the progress bar, and the end angle is the end point of the progress bar.



Note: The angle value must be within the range of –360 to 360. The absolute value of the start-end angle difference must be greater than or equal to 5.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

6) Data Type: Specifies the type of data displayed on the watch system by the circular progress bar binding.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

Data types supported by the round progress bar control on the watch are as follows:

Data Name	Value range	Description
Clock ratio 12	[00.00%-100.00%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00.00%-100.00%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00.00%-100.00%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00.00%-100.00%]	Percentage of the current second to 60 seconds.
Date Ratio	[00.00%-100.00%]	Percentage of current logs to 31 days (100%)
Week Rate	[00.00%-100.00%]	Percentage of the current week to the seven days.
Battery Ratio	[00.00%-100.00%]	Percentage of the actual battery level to 100 when the battery level is 100

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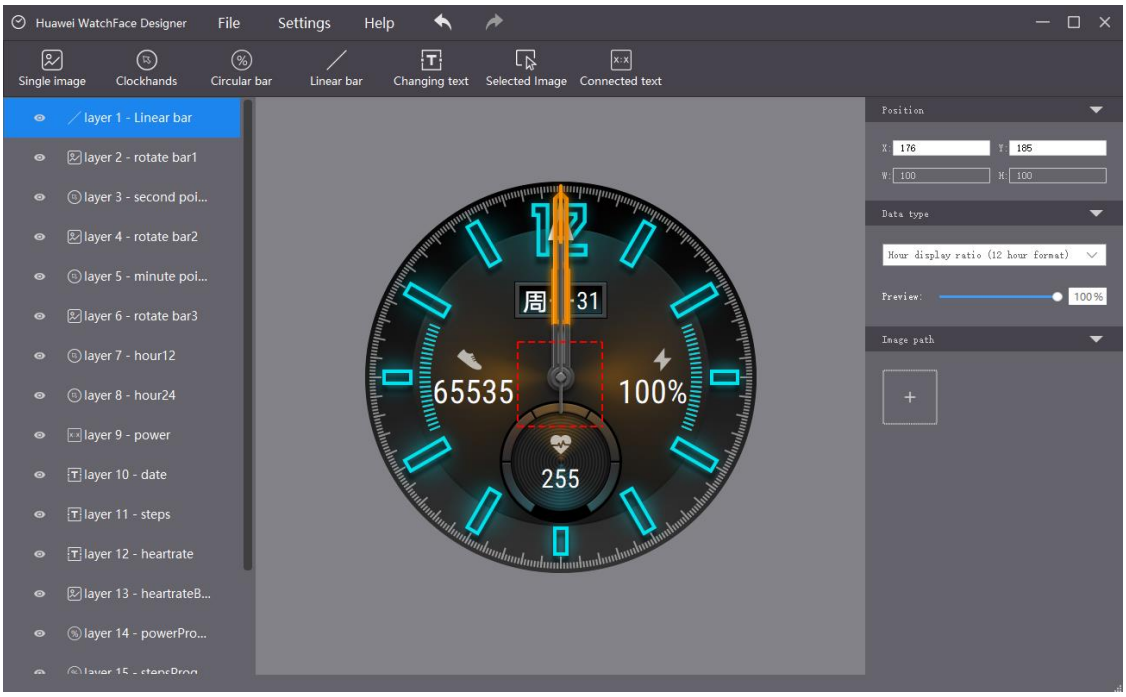
heart rate ratio	[00.00%-100.00%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00.00%-100.00%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00.00%-100.00%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00.00%-100.00%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00.00%-100.00%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
maximum oxygen uptake ratio	[00.00%-100.00%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

4.2.4 Linear progress bar



The linear progress bar control is used to dynamically display the linear progress bar based on the actual value of bound data. It is usually used to display the progress of the target such as the number of steps and calories.

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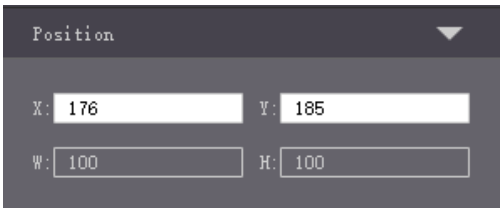
Description of operations in the attribute area:

1) Image path: Click the + icon to select a straight-line progress bar image.



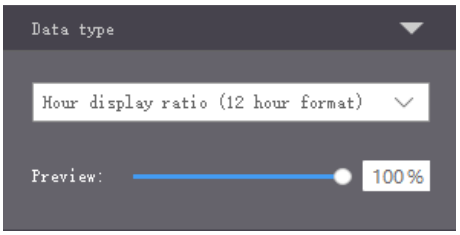
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

2) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

3) Data Type: Specifies the type of data displayed on the watch system by the linear progress bar binding.



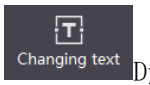
Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

Data types supported by the line-shaped progress bar control on the watch are as follows:

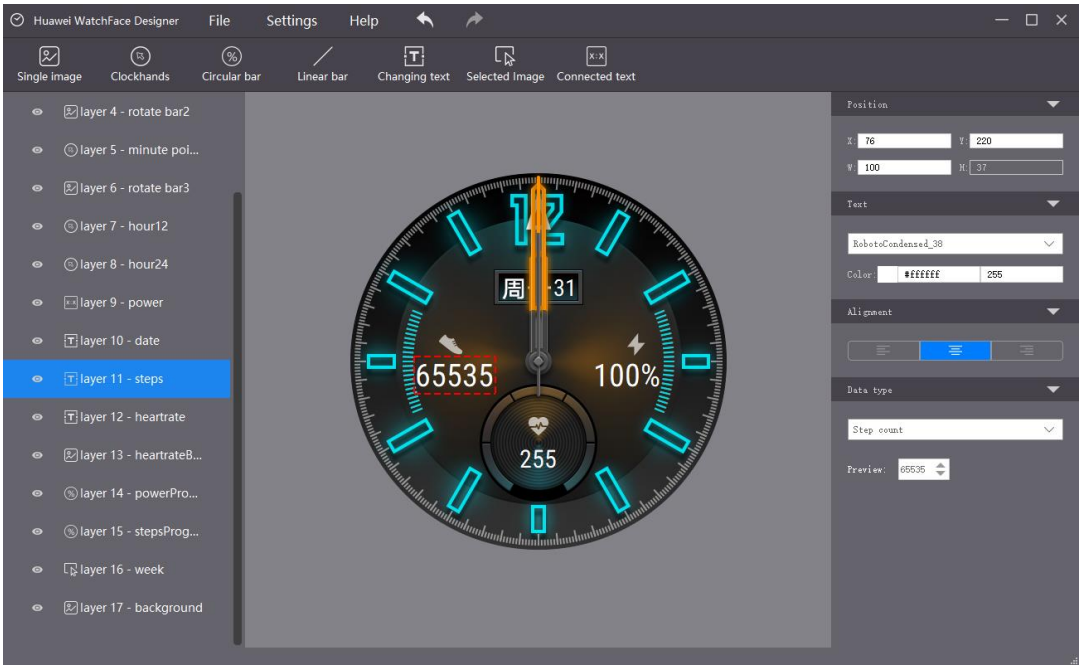
Data Name	Value range	Description
Clock ratio 12	[00.00%-100.00%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00.00%-100.00%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00.00%-100.00%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00.00%-100.00%]	Percentage of the current second to 60 seconds.
Date Ratio	[00.00%-100.00%]	Percentage of current logs to 31 days (100%)
Week Rate	[00.00%-100.00%]	Percentage of the current week to the seven days.
Battery Ratio	[00.00%-100.00%]	Percentage of the actual battery level to 100 when the battery level is 100
heart rate ratio	[00.00%-100.00%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00.00%-100.00%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00.00%-100.00%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00.00%-100.00%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00.00%-100.00%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
maximum oxygen uptake ratio	[00.00%-100.00%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

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4.2.5 Dynamic text

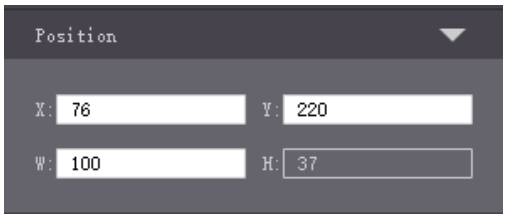


Dynamic text controls are used to dynamically display changed text based on the actual value of the bound data, such as the number of steps, heart rate, and date.



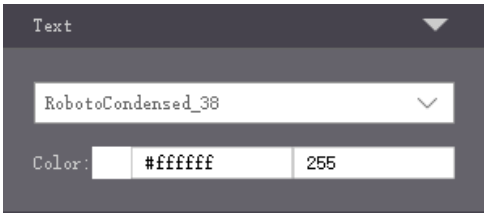
Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 390 X 390, the value in the attribute box cannot exceed 0 to 390.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.



Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specifies the type of data that the dynamic text binding displays for the watch system.



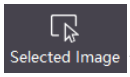
Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For dynamic text controls, data in different data ranges can be entered based on different data types. For details, see the following table.

The data types supported by the dynamic text control on the watch are as follows:

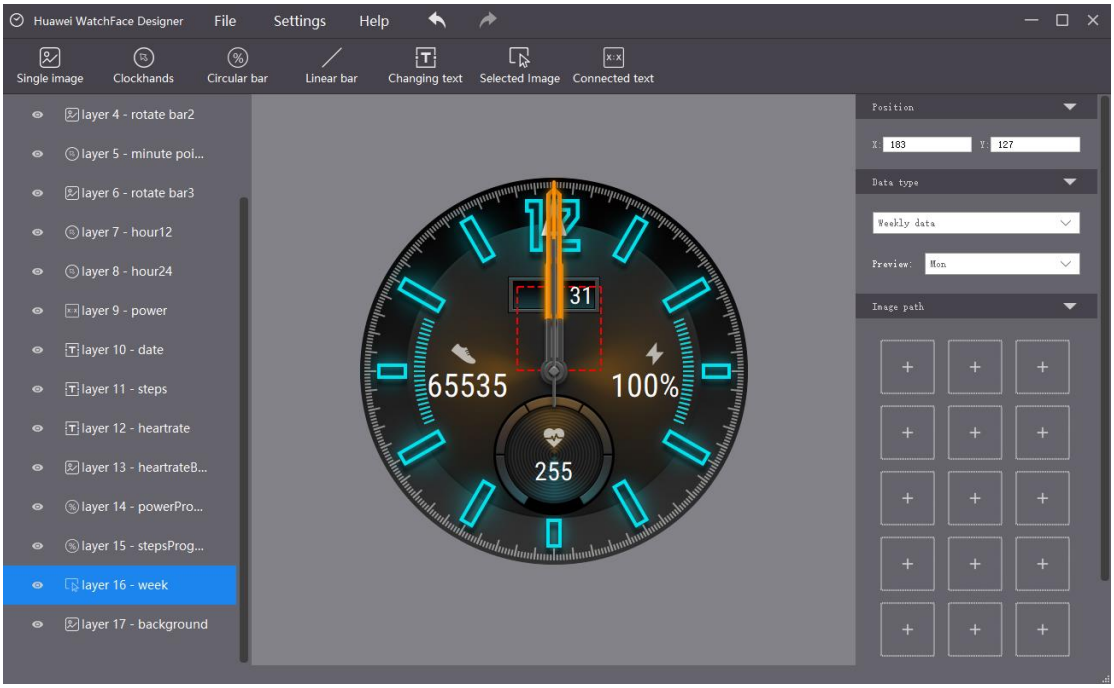
Data Name	Value range	Description
Steps	[0-65535]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate
Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.
PM2.5	[0-500]	PM2.5
barometric pressure	[0-65535]	barometric pressure
Altitude	[-32678- 32678]	Altitude
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times
maximum oxygen uptake	(0-80]	maximum oxygen uptake
Date	[1-31]	Date
Maximum heart rate	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate
month	[1-12]	month

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4.2.6 Selecting a picture



The image selection control is used to display different images based on the actual value of the bound data. It is usually used to display the weather, week, and date.



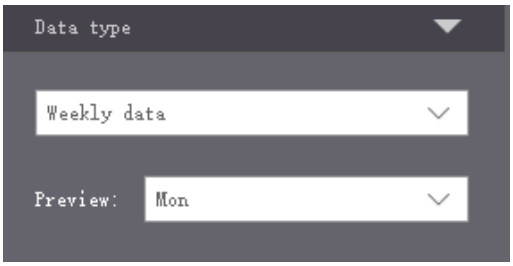
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) Data Type: Specifies the type of data displayed on the watch system by the image selection control binding.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the image selection control, different data types can be selected to display different images.

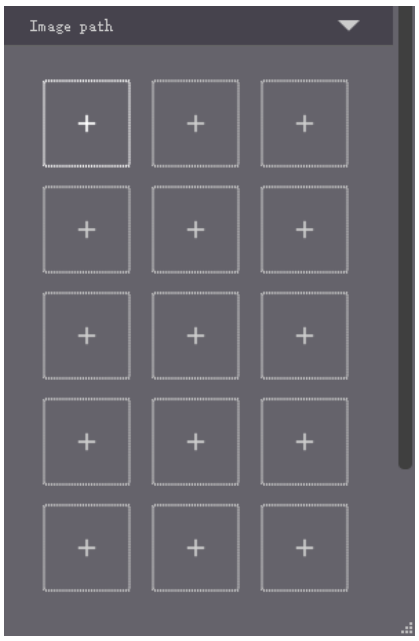
Data types supported by the image selection control on the watch are as follows:

Data Name	Value range	Number of images	Description and Image Sequence
Morning Afternoon	[0-2]	3	0:am 1:pm Afternoon 2: A transparent blank image needs to be added to hide the image in 24-hour format.
month	[0-12]	13	0: no, but you need to add any image. 1: january; 2: february; 3: march; 4: april; 5: may; 6: june; 7: july; 8: august; 9: septembe. September 10: october 11: november 12: december
Weekly data	[0-7]	8	0: no, but any image needs to be added. 1: Monday; 2: Tuesday; 3: Wednesday; 4: Thursday; 5: Friday; 6: Saturday; 7: Sunday; Sunday
Weather Type	[0-10]	11	0: unknown: weather unknown due to network disconnection; 1: sunny_day; 2: sunny_night; 3: overcast; 4: cloudy; 5: rain; 6: thunder; 7:s Now snow 8:dust_storm; sandstorm 9: hazy; sunny day; 10: forg; cloudy day
Battery Enumeration	[0-10]	11	0 to 10: 0%, 10%, 20%, 30...100%
High-order bits of the clock	[0-2]	3	Indicates the ten-digit value of the hour. The system determines whether to use the 24-hour or 12-hour format.
Clock low bit	[0-9]	10	Indicates the unitary value of the hour. The system determines whether to use the 24-hour or 12-hour format.

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Minute High Bit	[0-5]	6	Ten-digit number of minutes.
Minute Low Bit	[0-9]	10	minute number
Second High Bit	[0-5]	6	Ten-digit number of seconds
Second low	[0-9]	10	Number of bits in seconds
Steps (bits)	[0-9]	10	Number of steps
Steps: tens of positions	[0-9]	10	Step tens of digits
Hundreds of steps	[0-9]	10	Step hundreds of digits
Thousands of steps	[0-9]	10	Step thousands of digits
Steps (thousands)	[0-9]	10	Number of steps (thousand digits)
Date High Bit	[0-3]	4	Date High Bit
Date Low	[0-9]	10	Date Low
Unread messages	[0-1]	2	Whether unread messages exist. 0: no; 1: yes
Temperature Type	[0-1]	2	0 degrees Celsius, 1 degrees Fahrenheit

3) Image path: Click the plus sign (+) to select an image. Add images in sequence. Delete images from the last image. Add images strictly based on the description and required number and sequence of images in the data type definition.



Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

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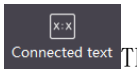
Note:

When Data Type is set to AM and PM, the first two images are in the morning and afternoon respectively. A transparent blank image must be added to the third image so that the image is not displayed in the 24-hour format.

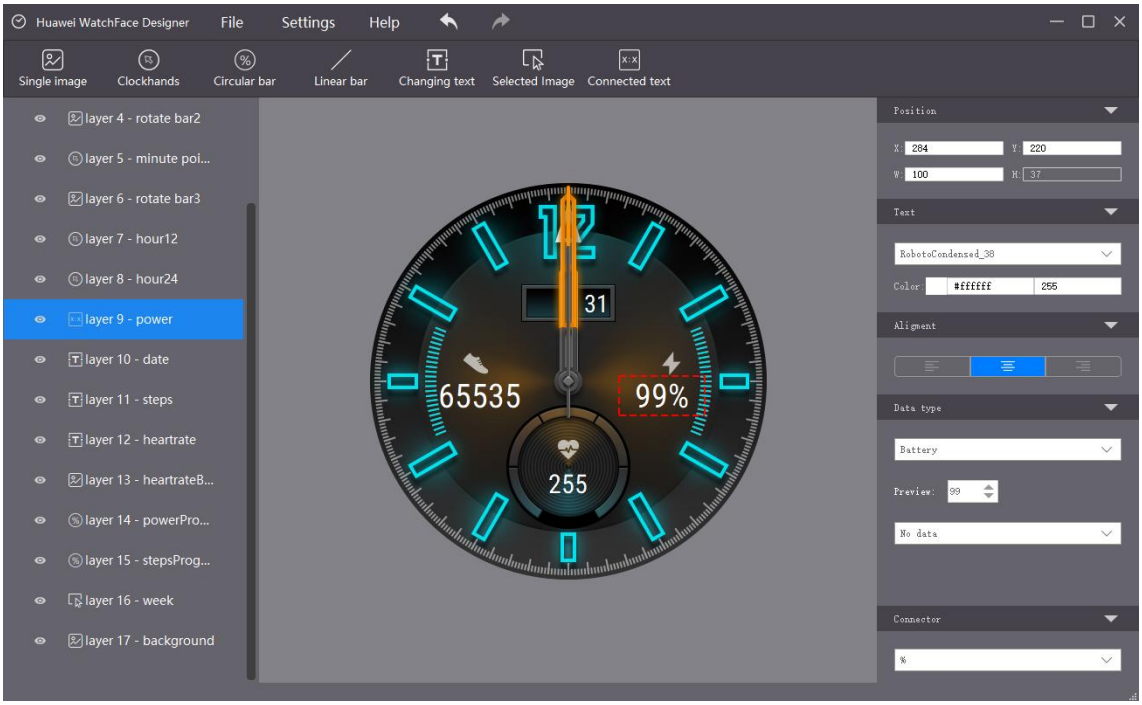
When Data Type is set to Week Data, you need to add any image to the first image (no use, but you need to add the image). The images from the second image are added in the sequence of Monday, Tuesday, Saturday, and Sunday.

When Data Type is set to Month, you need to add any image to the first image (no use but need to add the image). The images are added from the second image in the sequence of January, February, ·····.

4.2.7 Connection Text

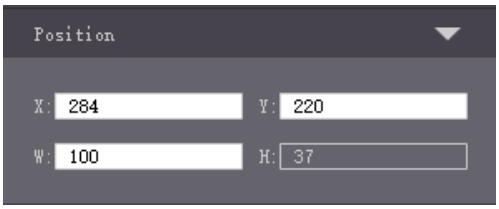


The connection text control is used to connect two changed texts based on the actual value of the bound data by using a connector. It is usually used to display the date in XX/XX format.



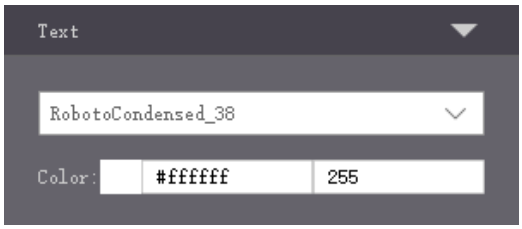
Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 390 X 390, the value in the attribute box cannot exceed 0 to 390.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.

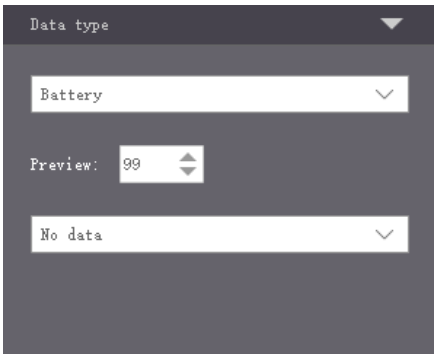


Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specify which type of data will be displayed on the watch system by the two text bindings that connect the text.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the connection text control, data of different data ranges can be entered based on the data type. For details, see the following table.

Data types supported by the connection text control on the watch are defined as follows:

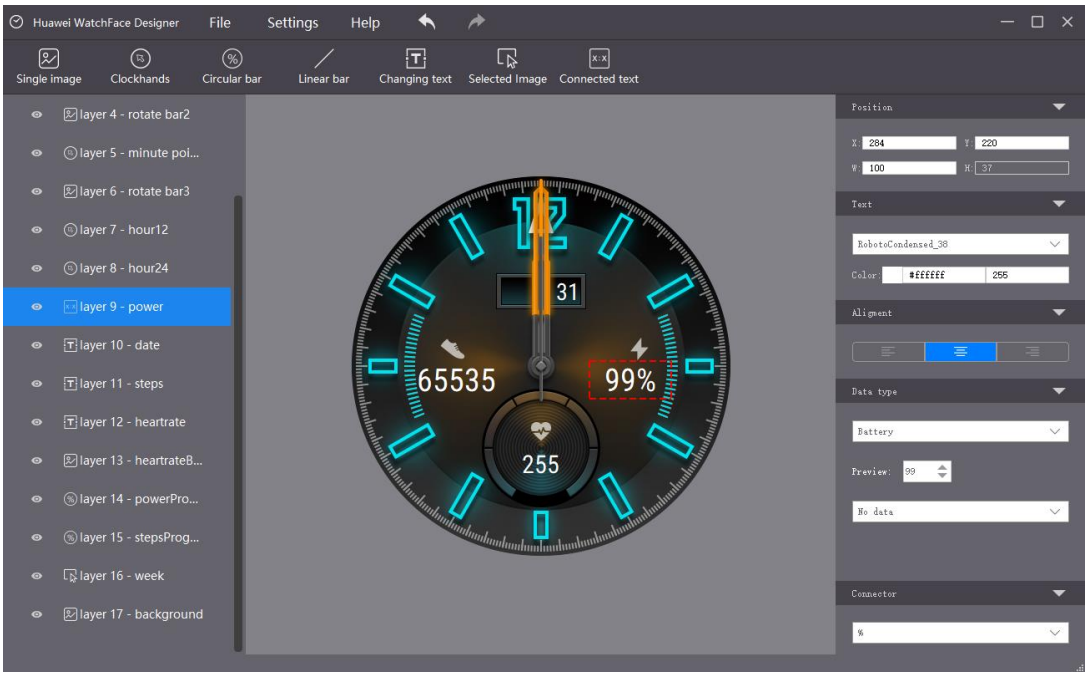
Data Name	Value range	Description
Steps	[0-65535]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate

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Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.
PM2.5	[0-500]	PM2.5
barometric pressure	[0-65535]	barometric pressure
Altitude	[-32678- 32678]	Altitude
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times
maximum oxygen uptake	(0-80]	maximum oxygen uptake
Date	[1-31]	Date
Maximum heart rate	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate
month	[1-12]	month

The second text supports no data type.

Data Name	Value range	Description
No data.	NA	xx% effect by setting the second text data type to no data



5) Connector: Separator between two texts.



The value contains the following connection symbols:

Colon:

"-"

Slash '/'

Backslash (\)

Click.

percent sign '%'

Space ""

Precautions

1. Maximum number of controls on a watch face

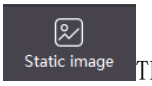
All configurations of the watch face control are written in watch_face_config.xml. The total number of controls to be configured cannot exceed 25.

2. Maximum size of a watch face

The size limit of the watch face generated by the motion table is as follows: The size of the bin file cannot exceed 1.4 MB, and the total size of the HWT package cannot exceed 5 MB.

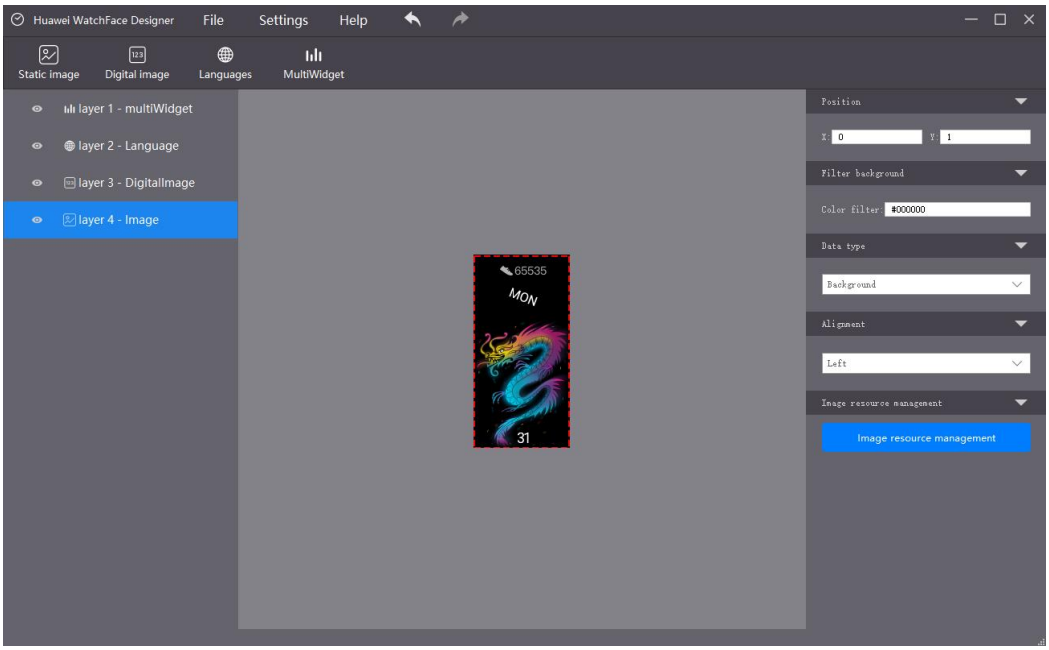
4.3 Band 4pro and Band 4 (Andes)

4.3.1 Static map



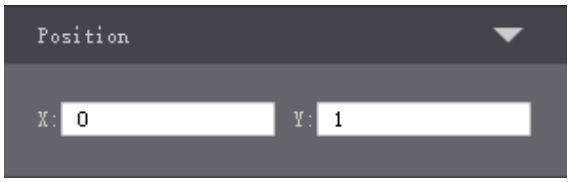
The static image control is used to display static images, such as the background image, icon, and symbol unit.

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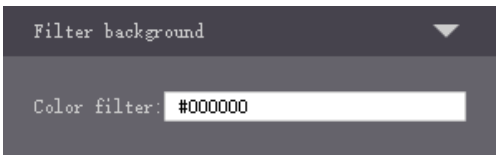
Description of operations in the attribute area:

1) Reference position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

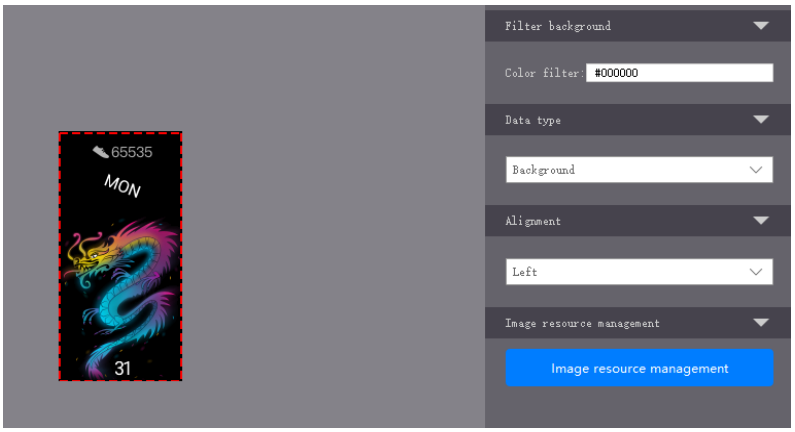


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 – DPI, X cannot exceed 0 – 120, and Y cannot exceed 0 – 240.

2) Filter background color: Filters out specified colors in static graphs.



For example, if you enter #FFFFFF to filter out white images in static images, see the following figure.



3) Data Type: specifies the type of data displayed on the band system.

Data types supported by the static image control on your band are as follows:

Data Name	Number of required images	Description and Picture Sequence
Background	2	1: upper part of the image; 2: lower part of the image
Constellation background image	12	1: Aquarius 2: Pisces 3: Aries 4: Taurus 5: Gemini 6: Cancer 7: Leo 8: Virgo 9: Libra 10: Scorpio 11: Sagittarius 12: Scorpio
background animation	N	N images are automatically played cyclically. N ⩾ 2.
Separator/	1	
Separator:	1	
AMPM	2	1:AM2:PM
Battery level percentage	1	
battery	11	Images with different battery levels: 0% images, 10% images, and 100% images

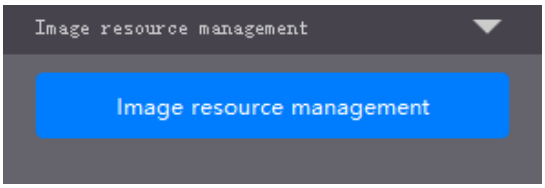
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Charging	11	Images with different battery levels: 0% images, 10% images, and 100% images
weathering	26	1: sunny; 2: cloudy; 3: cloudy; 4: shower; 5: thundershower; 6: thundershower with hail; 7: rain and snow; 8: light rain; 9: moderate rain; 10: heavy rain; 12: heavy rain; 13: heavy rain; 14: heavy rain: Snow shower 15: Small snow 16: Medium snow 17: Heavy snow 18: Blizzard 19: Fog 20: Frozen rain 21: Sandstorm 22: Floating dust 23: Severe sandstorm 25: Haze 26: Unknown
Unknown temperature	1	
Heart rate--	1	

4) Alignment Mode: The X coordinate is used as the reference point. Three alignment modes are available: Left Align, Center Align, and Right Align.



5) Image resource management: Click the image resource management icon to select an image.



Note: The picture size cannot exceed the DPI size of the selected watch face.

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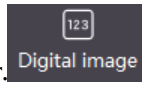
Note: The number of imported images and the sequence of image sorting must comply with the preceding data types. For example, if the data type is a constellation background image, 12 images are required, and the sequence of images is as follows: 1. Aquarius. 2. Pisces; 3. Aries; 4. Taurus; 5. Gemini; 6. Cancer; 7. Leo; 8. Virgo; 9. Libra; 10. Scorpio; 11. Sagittarius; 12. Scorpio.

For example, if the data type is background animation, at least two images are required.

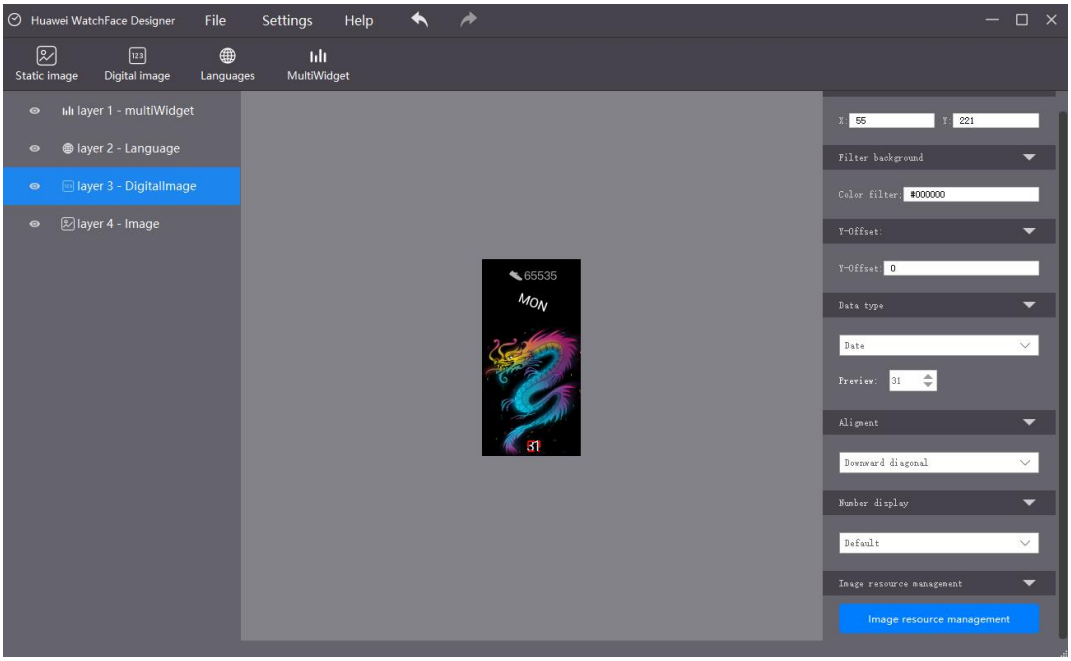
For example, if the data type is weather, 26 weather images are required. The DPI sizes of the images must be the same. The sequence of importing image resources is as follows: sunny day, cloudy day, cloudy day, ..., 25 haze, and 26 unknown.

4.3.2 digital image selection

The digital image selection control is used to display different images based on the actual value of the bound data.

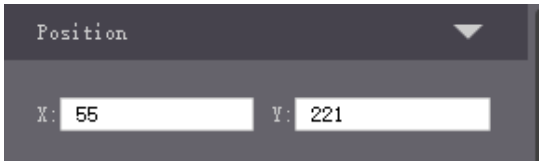
It is usually used as the time number and date number. 

Draw words, steps, etc.



Description of operations in the attribute area:

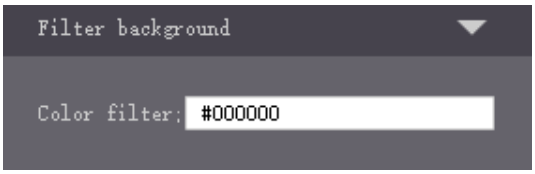
1) Coordinates of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 – DPI, X cannot exceed 0 – 120, and Y cannot exceed 0 – 240.

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2) Filter background color: filters out the color specified in the digital selection diagram. The usage is the same as that of the static diagram.



3) Y-direction offset: When the alignment mode is diagonal upward or diagonal downward, the Y-direction offset can be used to adjust the up and down offsets of digits in the Y direction.



4) Data Type: Specifies the type of data displayed on the band system.



Data types supported by the digital image selection control on the band are as follows:

Data Name	Value range	Number of required images	Explanation
month	1-12	10	The first image is 0 to 9.
day	1-31	10	The first image is 0 to 9.
Hour 10 digits	0-9	10	The first image is 0 to 9.
Hour Bits	0-9	10	The first image is 0 to 9.
Minute, ten digits.	0-9	10	The first image is 0 to 9.
minute bit	0-9	10	The first image is 0 to 9.
Electricity value	0-100	10	The first image is 0 to 9.
Step number	0-99999	10	The first image is 0 to 9.

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Preview data: Simulates the data of your band. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the digital image selection control, data in different data ranges can be entered based on the data type. For details, see the table above.

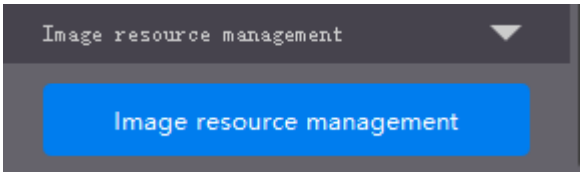
5) Alignment mode: Use the X coordinate as the reference point. Five alignment modes are available: oblique up, oblique down, left, right, and center.



6) Number of digits to be displayed: indicates the number of digits to be displayed. If the default value is selected, it indicates that the display is not forcibly performed. If the number of digits to be displayed is greater than the number of digits, zeros are added to the high-order bits.



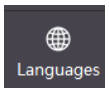
6) Image resource management: Click the image resource management icon to select an image.



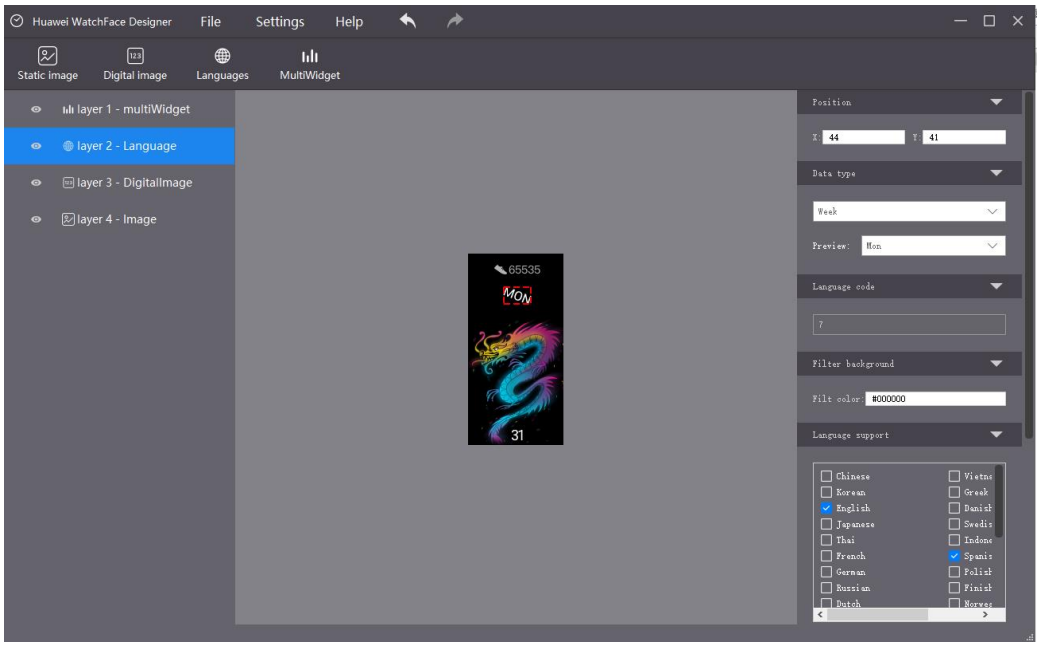
Note: The picture size cannot exceed the DPI size of the selected watch face.

Note: You need to upload 10 images. The first image is 0 and the number is 9.

4.3.3 Multilingual

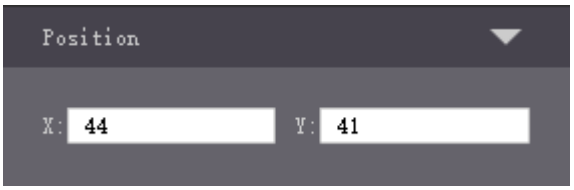
Multi-language control, which describes the month and week in various languages. 

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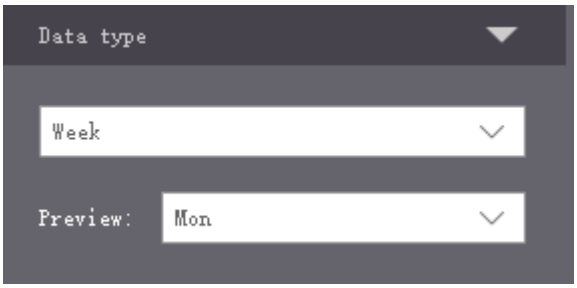
Description of operations in the attribute area:

1) Coordinates of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 – DPI, X cannot exceed 0 – 120, and Y cannot exceed 0 – 240.

2) Data Type: Specifies the type of data to be displayed on the band when the multi-language control is bound. Currently, the week and month-wide data types are supported.



The data types supported by the multi-language control on the band are as follows:

Data Type	Number of required images	Explanation

Month - Whole Chart	N*12	N indicates the number of supported languages. The month ranges from 1 to 12, from January to December for the first image, from January to December, from January to December for another language, and so on.
weeks	N*7	N indicates the number of supported languages. The week ranges from 1 to 7. The first Monday of the picture is from Monday to Sunday, then the Monday of another language, and so on.

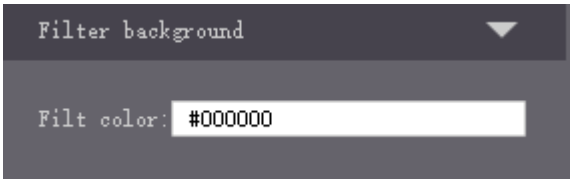
Note: If the selected language is Chinese, English, or Korean, 21 images are required (3 x 7). The images are arranged in sequence from Monday to Sunday in Chinese, from Monday to Sunday in English, and from Monday to Sunday in Korean. If you select more languages, the principle is the same. Images are arranged in sequence from Monday to Sunday.

Preview Data: Simulates the data of your band. Designers can adjust the preview data to preview the preview effect in different data scenarios. For multi-language controls, you can enter data in different data ranges based on the data type. For details, see the table above. The data type is Month-Entire Graph. The preview data range is from January to December. The default language under the attribute bar is adjusted. Designers can preview the month in the corresponding language on the preview page. The data type is week, and the preview data range is from Monday to Sunday. Adjust the default language under the property bar. Designers can preview the week in the corresponding language on the preview page.

3) Number of image resources in a single language: number of image resources required by each language. Week: 7 resources are required. Month - Full chart, 12 resources are required.



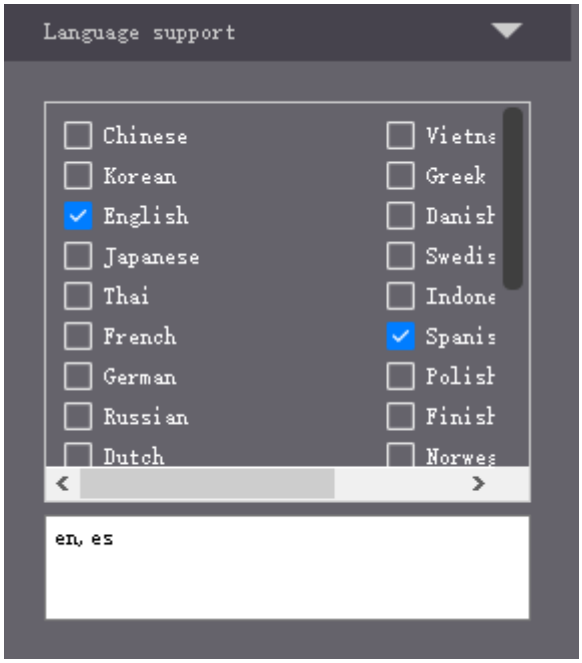
4) Filter background color: filters out the color specified in the digital selection diagram. The usage is the same as that of the static diagram.



5) Language support: indicates the language supported by the month or week. The designer can select the languages to be supported in sequence. In addition, you can add required

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languages by customizing languages. Each time a language is added, the corresponding language abbreviation is added to the property box at the bottom of the language support bar.



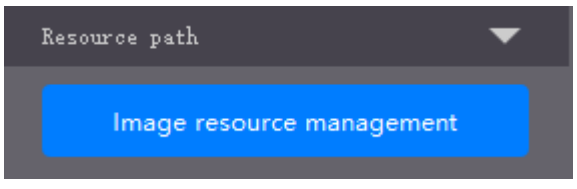
6) Default Language: Select a supported language as the default language.



7) Alignment Mode: Use the X coordinate as the reference point. Three alignment modes are available: Left Align, Center Align, and Right Align.



8) Resource path: Click the image resource management icon to select an image.



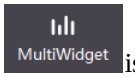
Note: The picture size cannot exceed the DPI size of the selected watch face.

Note: If the data type is Month-Entire Image, the number of images to be uploaded is N x 12, where N indicates the number of supported languages. The first image is from January to December, then from January to December, and so on.

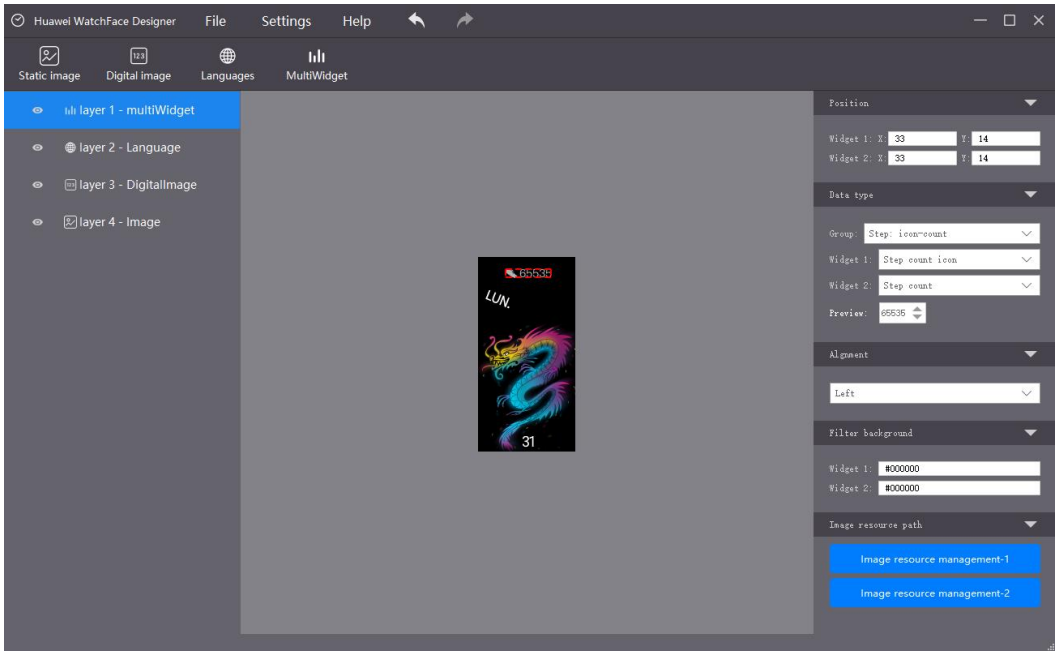
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If the data type is Week, the number of images to be uploaded is N x 7, where N indicates the number of supported languages. The first image is from Monday to Sunday, Monday to Sunday, and then from Monday to Sunday.

4.3.4 MultiWidget

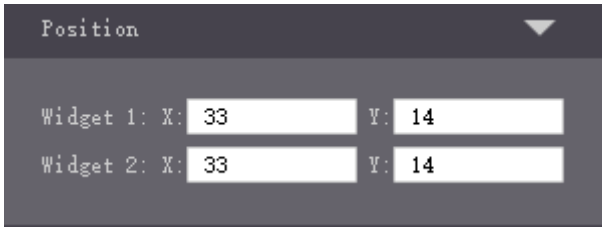


is used to display data and units such as sports data, temperature, and distance.



Operations:

Step 1 In the Reference position area, X1, X2, and X3 are the coordinates of the upper left corner of the whole control picture in the watch face coordinate system. Y1 is the coordinate of the upper left corner of the first component picture of the multiple components control in the watch face coordinate system. Y2 is the coordinate of the upper left corner of the second component picture of the multiple components control in the watch face coordinate system. Y3 is the coordinate of the upper left corner of the third component picture of the multiple components control in the watch face coordinate system.

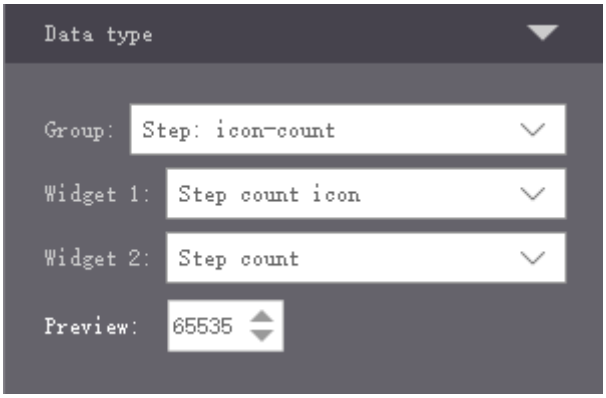


NOTE

X1, X2, and X3 can have the same value but Y1, Y2, and Y3 cannot. The X and Y values cannot exceed the watch face DPI. The X value must be 0–120 and the Y value must be 0–240.

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Step 2 Select the type of data to which the multiple components control is bound. Seven types of controls are supported: Month-Separator-Day, Bluetooth-Message-Do not disturb, Below zero-Temperature value-Temperature unit, Energy icon-Energy value-Energy unit, Distance icon-Distance value-Distance unit, and Step icon-Step value.



Adjust the Preview to gain a preview of the multiple components control when the data change.

The following table describes the data types supported by the multiple components control.

Data Type	Picture Quantity	Description	Value
Month	10	The picture sequence is 0–9.	1–12
Separator /	1		
Day	10	The picture sequence is 0–9.	1–31
Bluetooth	2	1: Connected2: Unconnected	
Message	1		
Do not disturb	1		
Temperature	10	The picture sequence is 0–9.	
Below zero	1		
Temperature unit	2	1: Celsius 2: Fahrenheit	
Energy icon	1		
Energy value	10	The picture sequence is 0–9.	0–9999
Energy unit	1		
Step icon	1		
Step value	10	The picture sequence is 0–9.	0–99999
Distance icon	1		
Distance value	11	The picture sequence is 0–9. Add a decimal point picture in the end (with the same picture size as the other pictures and the decimal point displayed at the lower left corner of the picture).	0.00–99.99

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Data Type	Picture Quantity	Description	Value
Distance unit	1	The unit is kilometer.	

NOTE

The multiple components control is composed of two or three sub-controls.

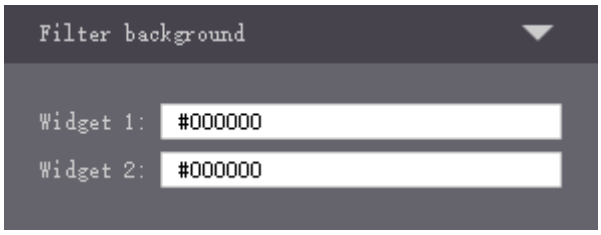
Step 3 Select an alignment mode among align left, align center, and align right.

NOTE

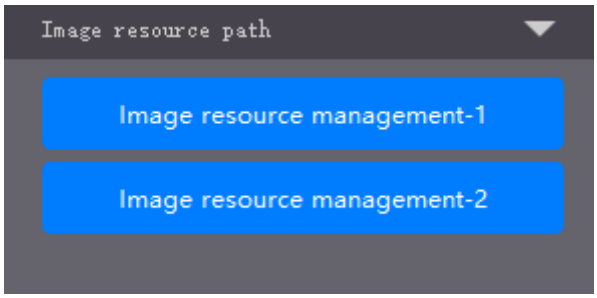
The align center option takes the X coordinate 60 as the reference.



Step 4 Enter color values in the Color filter fields to filter the specified colors from the control.



Step 5 In the Image resource path area, click the Image resource management buttons to select the pictures.



NOTE

- The picture cannot be larger than the watch face DPI.
- When the data type is month, day, temperature, calorie value, or step value, 10 pictures are required for each of them and the picture sequence is 0–9.
- When the data type is distance value, 11 pictures are required and the picture sequence is 0–9. After other pictures are added, add a decimal point picture (with the same picture size as the other pictures and the decimal point displayed at the lower left corner of the picture).
- When the data type is Bluetooth, two pictures are required (as shown in the table above).
- When the data type is temperature unit, two pictures are required (as shown in the table above).
- Add pictures of different data types according to the table above.

Precautions

1. Draw sequence: Add the data type sequence of controls on the band based on the data type listed in the following table to ensure that the data type sequence is the same as that on the band side.

No.	Data Type	Picture Quantity	Description	Value
1	Background	2	1: Upper part of the picture2: Lower part of the picture	
2	Constellation background	12	1: Constellation background	1: Aquarius 2: Pisces 3: Aries 4: Taurus 5: Gemini 6: Cancer 7: Leo 8: Virgo 9: Libra 10: Scorpio 11: Sagittarius 12: Capricorn
3	Background animation	N	Automatic loop playing of N pieces of pictures	N>=2
4	Month	10	The picture sequence is 0–9.	1–12
5	Month-whole picture	N*12	Month 1-12, The sequence is from January to December pictures in one language, and then January to December pictures in another language.	
6	Separator /	1		

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No.	Data Type	Picture Quantity	Description	Value
7	Day	10	The picture sequence is 0–9.	1–31
8	Week	N*7	The sequence is from Monday to Sunday pictures in one language, and then Monday to Sunday pictures in another language.	
9	Tens place of the hour	10	The picture sequence is 0–9.	0–9
10	Ones place of the hour	10	The picture sequence is 0–9.	0–9
11	Separator:	1		
12	Tens place of the minute	10	The picture sequence is 0–9.	0–9
13	Ones place of the minute	10	The picture sequence is 0–9.	0–9
14	AMPM	2	1: AM2: PM	
15	Bluetooth	2	1: Connected2: Unconnected	
16	Power value	10	The picture sequence is 0–9.	0–100
17	Power percent sign	1		
18	Battery	11	Pictures of different power levels from 0%, 10% to 100%	
19	Charging	11	Pictures of different power levels from 0%, 10% to 100%	
20	Message	1		
21	Do not disturb	1		

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No.	Data Type	Picture Quantity	Description	Value
22	Weather	26	1: Sunny 2: Cloudy 3: Overcast 4: Shower 5: Thunder shower 6: Thunder shower and hail 7: Sleet 8: Light rain 9: Moderate rain 10: Heavy rain 11: Rainstorm 12: Heavy rainstorm 13: Extraordinary heavy rainstorm 14: Snow shower 15: Light snow 16: Moderate snow 17: Heavy snow 18: Blizzard 19: Foggy 20: Freezing rain 21: Sandstorm 22: Floating dust 23: Floating sand 24: Heavy sandstorm 25: Haze 26: Unknown	
23	Temperature value	10	The picture sequence is 0–9.	
24	Unknown temperature	1		
25	Below zero	1		
26	Temperature unit	1		
27	Energy icon	1		
28	Energy value	10	The picture sequence is 0–9.	0–9999
29	Energy unit	1		
30	Step icon	1		
31	Step value	10	The picture sequence is 0–9.	0–99999
32	Distance icon	1		
33	Distance value	11	The picture sequence is 0–9.	0–99.99

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No.	Data Type	Picture Quantity	Description	Value
36	Distance unit	1		

1. Resource image size restriction: The resource image to be added to the band must comply with the following table. Resource restrictions: LINK Excel.Sheet.12 D:\\workDoc\\WatchDesigner\\ Delivery \\CriusB0 watch face resource size restriction .xlsx Sheet1!R1C1:R20C4 \a \f 4 \h * MERGEFORMAT

Data type	Width	Height	W = 120H = 240
Background	W	<=1/2*H	120*120
Watch face switching preview	W	<=1/2*H	120*120
Digital clock and Separator	<=1/2*W	<=1/2*H	60*120
AMPM	<=1/4*W	<=1/8*H	30*30
Date, Number and Separator	<=1/4*W	<=1/8*H	30*30
Battery icon	<=1/4*W	<=1/8*H	30*30
Weather icon	<=1/4*W	<=1/8*H	30*30
Temperature value, Temperature unit, Below zero, Invalid temperature	<=1/4*W	<=1/8*H	30*30
Bluetooth icon	<=1/4*W	<=1/8*H	30*30
Unread message and Do not disturb	<=1/4*W	<=1/8*H	30*30
Step value, Distance value, Calorie value	<=1/3*W	<=1/6*H	40*40
Week picture	<=1/3*W	<=1/6*H	40*40
Month picture	<=1/3*W	<=1/6*H	40*40
Step icon, Distance icon, Calorie icon	<=1/3*W	<=1/6*H	40*40

1. Maximum number of controls on a watch face

All configurations of the watch face control are written in watch_face_config.xml. The total number of configuration controls cannot exceed 35.

2. Maximum size of a watch face

The size of the com.huawei.watchface file generated on the band is less than or equal to 600 KB, and the total size of the HWT package cannot be greater than 5 MB.

3. Import Image Naming Rules

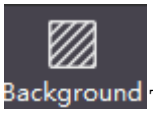
The names of the images imported in the independent control resource management of the band must be in the order of 000–255.

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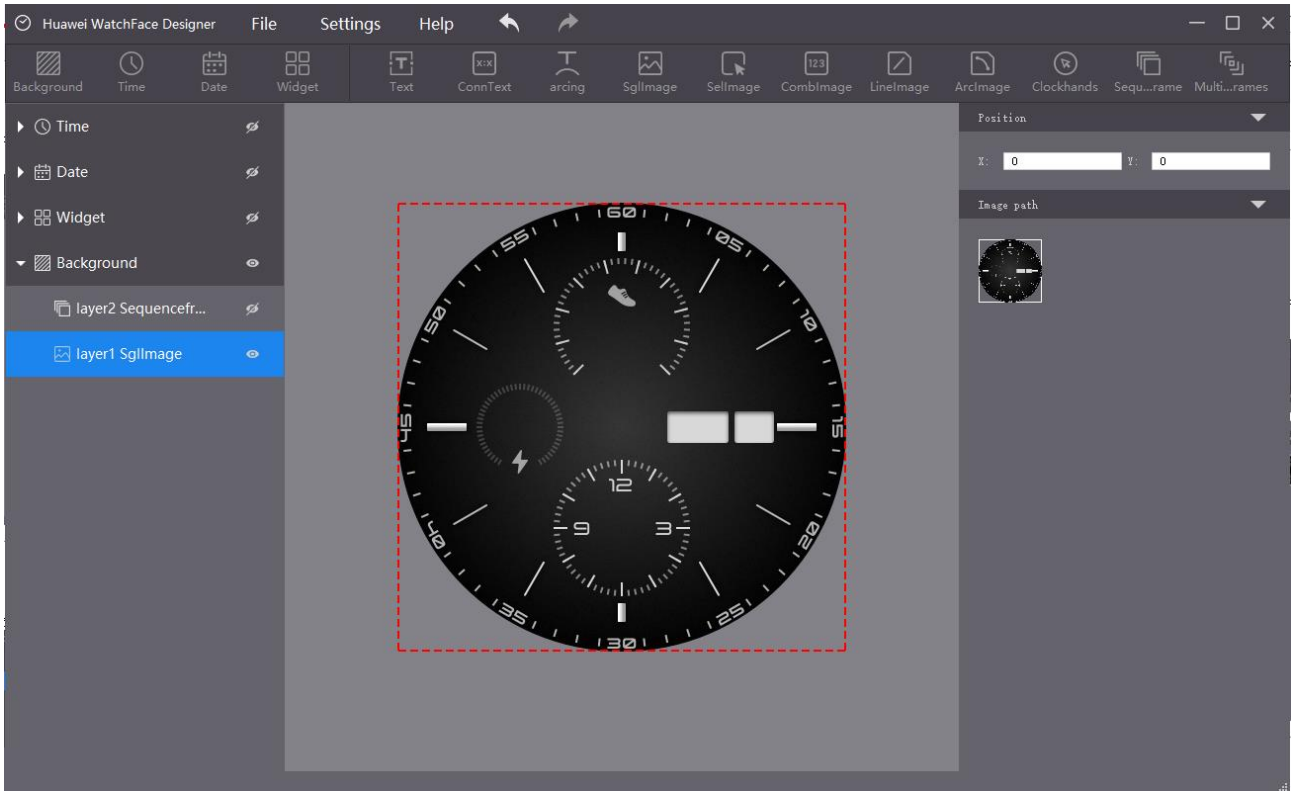
4.4 Motion watch GT2

4.4.1 Elements

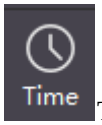
Background



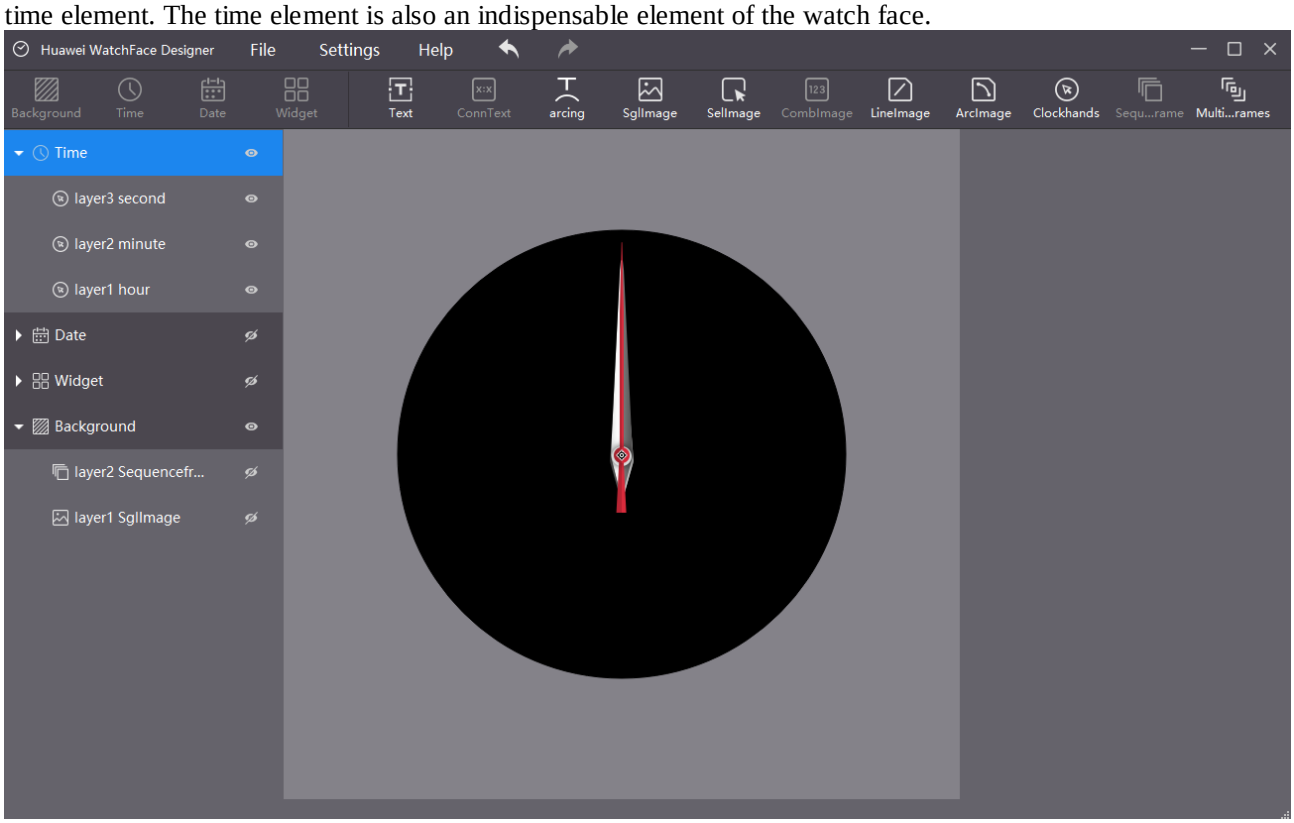
The background element is used as the background of the watch face. Generally, a picture of the same size is used as the background of the watch face. It is an indispensable element of the watch face.



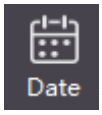
Time



Time element. Generally, the hour, minute, and second information on the watch face is placed in the time element. The time element is also an indispensable element of the watch face.

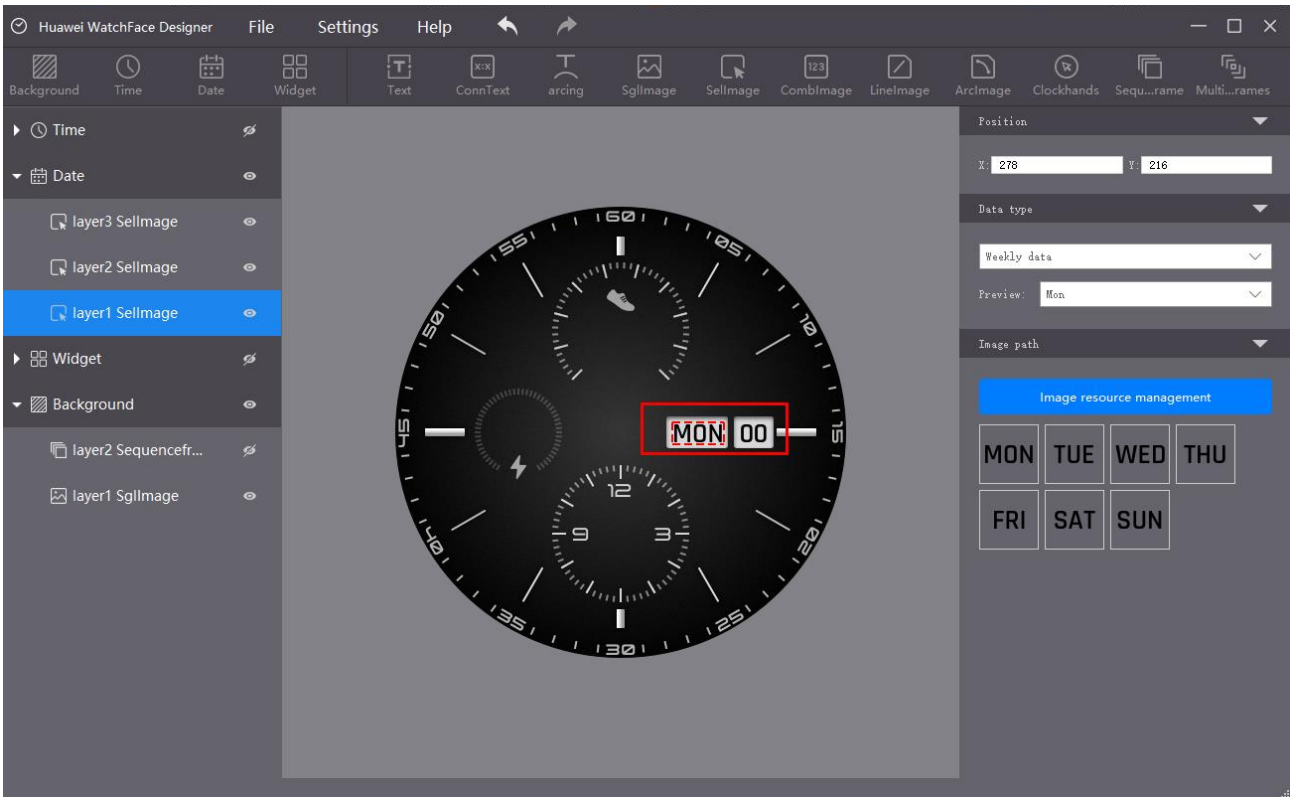


Date



Date element. Generally, the month, day, and week information is placed in the date element. The month, day, and week information can be placed in different layers.

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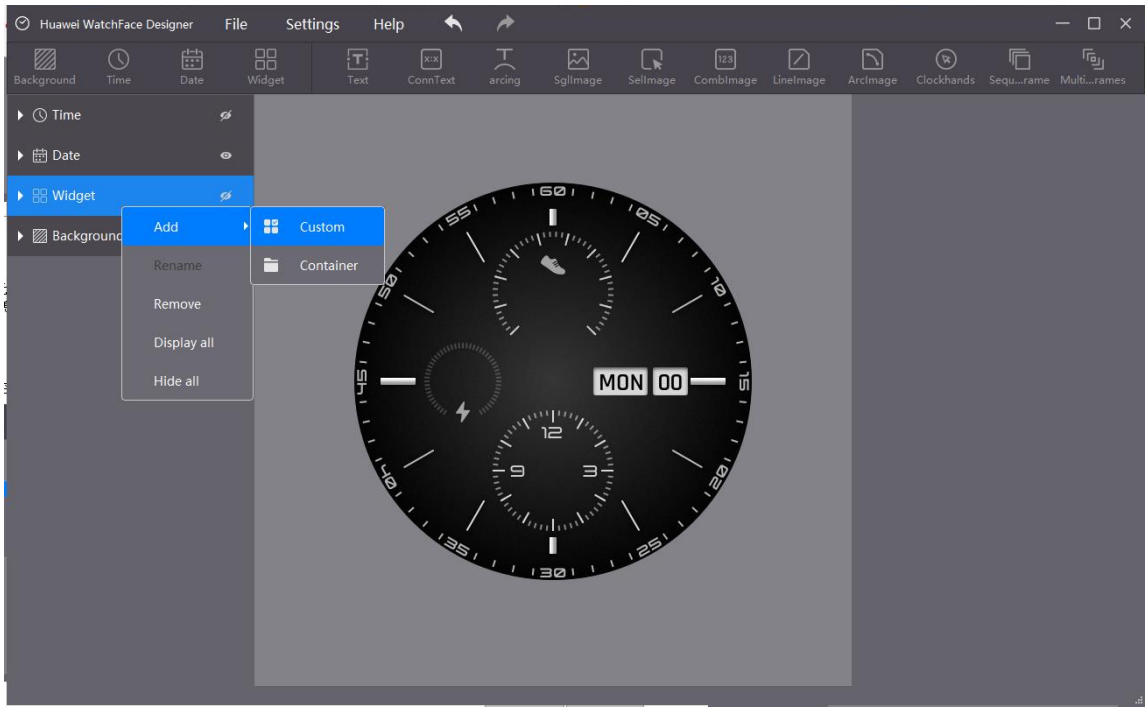
4.4.2 control



A control consists of two elements: container and custom. Generally, other information such as step count and weather is placed in the control element except the background, time, and date.

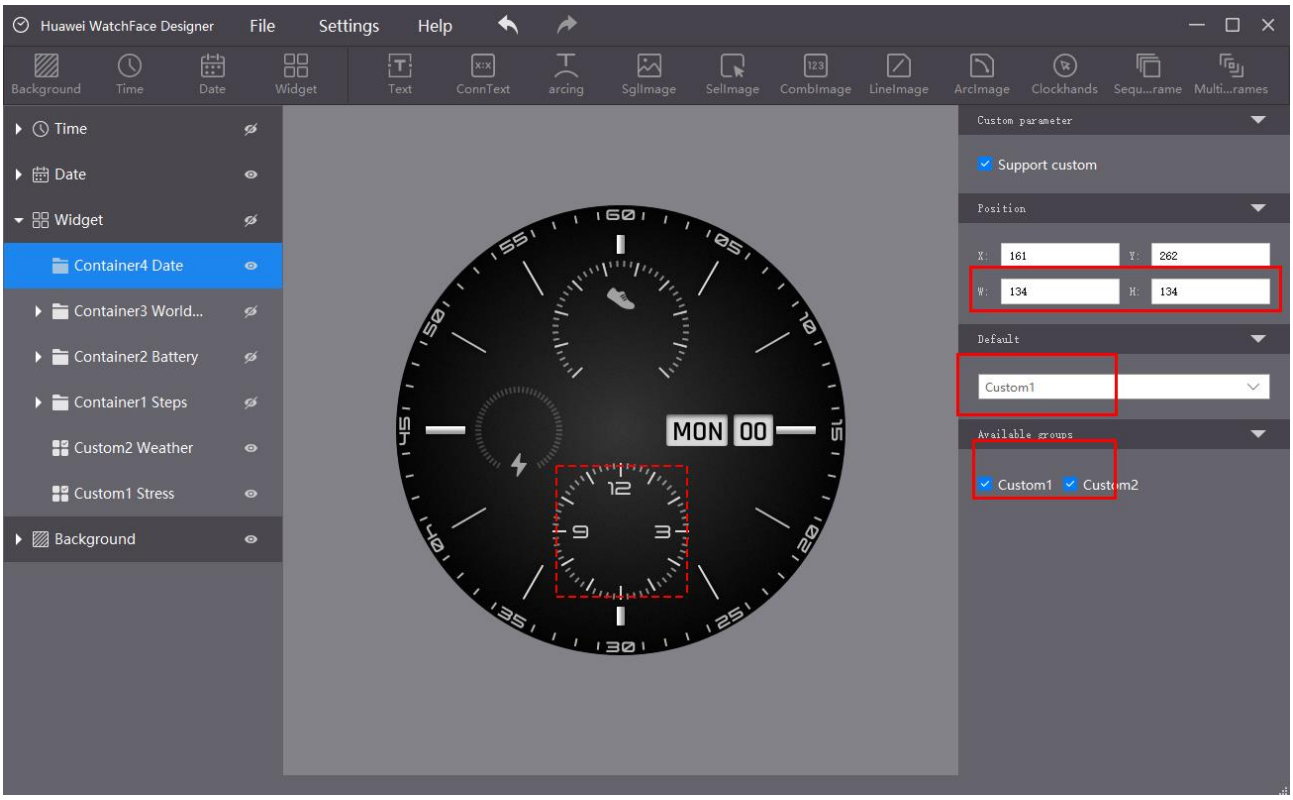
Custom

Custom exists only in the control and can only be displayed through a container. Right-click the control and choose Add > Customize, as shown in the following figure.



container

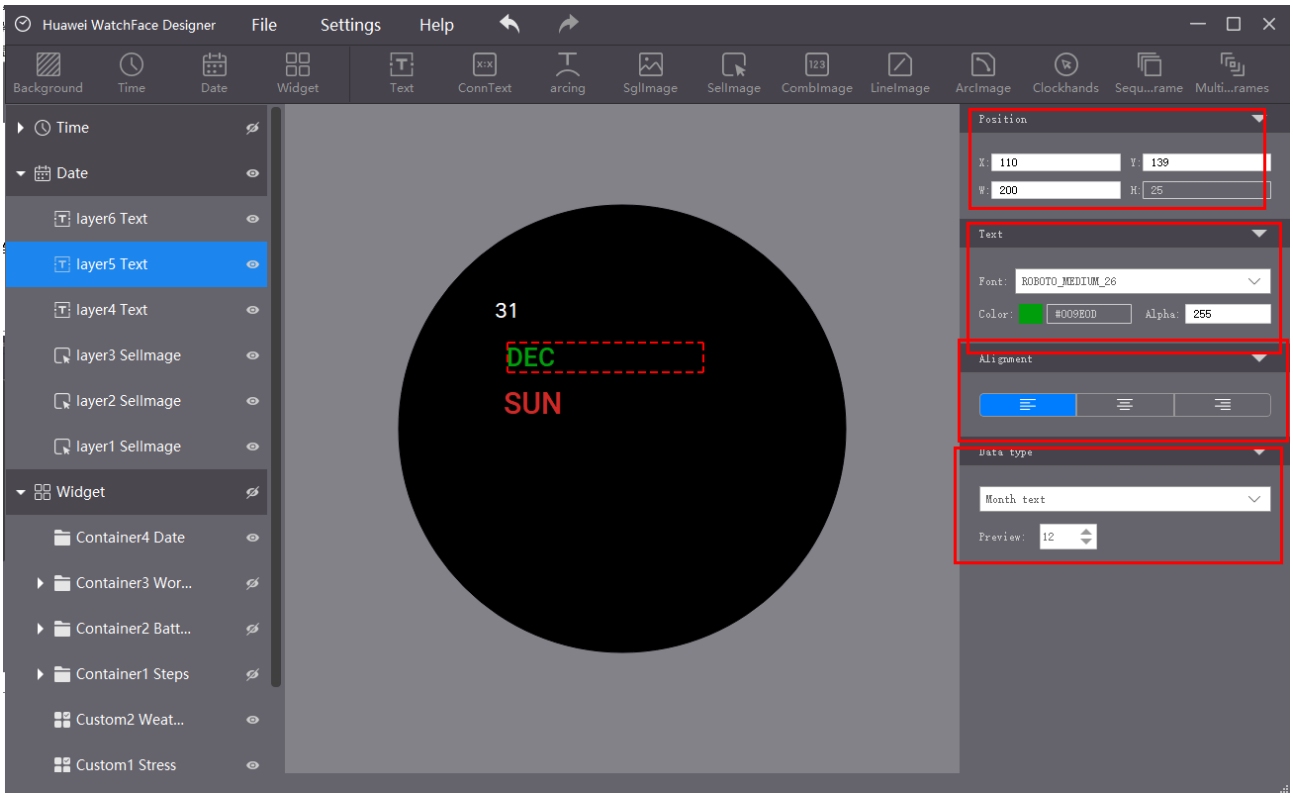
Containers exist only in control elements. Adding containers is the same as customizing them. Containers have two functions: 1) Display supported control elements. 2) Used to display customized information. When Support customization is selected for Custom Attributes in the Container of the control element, the customization options that can be selected and the customizations displayed by default are displayed in the lower right corner. If customization is supported, a container can contain multiple customization options. If customization is not supported, a container can consist of multiple drawing units. Adjust W and H to be the same as the size of the customized display area. You can also set W and H and drag the customized preview area to adjust the position.



4.4.3 drawing unit

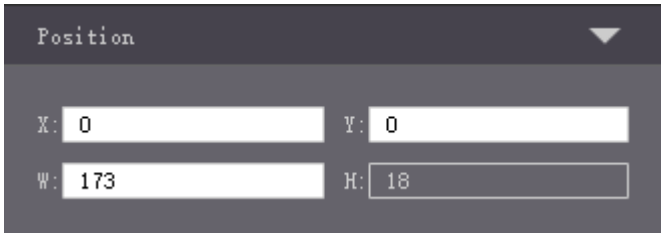
Text

Displays text or numeric attributes of the watch face, such as drawing numbers and text, such as the digit time, month, and step count.



Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 390 X 390, the value in the attribute box cannot exceed 0 to 390.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.



Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specifies the type of data to be displayed in the watch system by text binding. Note that this parameter is restricted by the data type of the upper level. The supported data types of the text vary with the data type of the upper level.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For text, data in different data ranges can be entered based on different data types. For details, see the following table.

Data types supported by the text control on the watch are as follows:

Data Name	Value range	Description
Steps	[0-999999]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate
Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.
AQI	[0-500]	air pollution index
barometric pressure	[0-65535]	barometric pressure
Altitude	[-32678- 32678]	Altitude
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times
Date	[1-31]	Date
Maximal heart	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate

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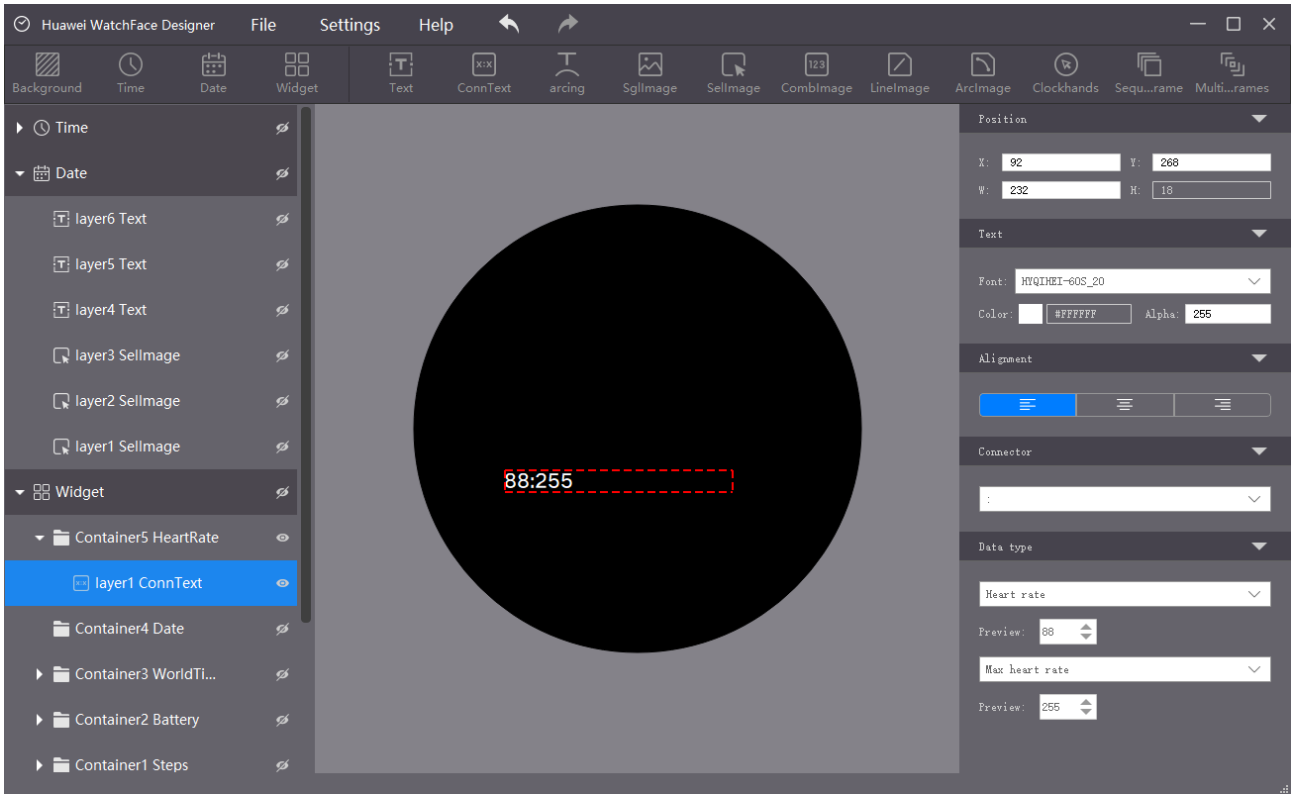
Maximum temperature	[-32678- 32678]	Maximum temperature
Lowest temperature	[-32678- 32678]	Lowest temperature
pressures	[0-100]	pressures
critical low temperature	(-126, 126)	critical low temperature
critical high temperature	(-128, 128)	critical high temperature
Double time zone abbreviation text	NZDT, IDLE, NZST, AESST, ACSST, EAST, GST, SAT, WDT, JST, KST, MT, WST, CCT, JT, IT, BT, EETDST, CETDST, EET, FWT, MEST, BST, CET, FST, SWT, WETDST, GMT, WET, WAT, NDT, ADT, NFT, AST, EDT, CDT, EST, CST, MDT, MST, PDT, PST, HDT, AHST, NT, IDLW,	The watch supports the following dual time zone text fonts: 1. obotoCondensed_Regular_26_4 2. Roboto_Medium_22_4 3. Oswald_Medium_26_4
Zhou Wen	Sunday (SUN), Monday (MON), Tuesday (TUE), Wednesday (WED), Thursday (THU), Friday (FRI), and Saturday (SAT)	
Month Text	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	
Morning and afternoon text	AM, PM	
Dual time zone time text	Example: NZDT 10:12	The tool does not support preview data adjustment.
maximum oxygen uptake	0-80	maximum oxygen uptake
Distance text	0.00 km (default unit: km)	The tool does not support preview data adjustment.
Sleep Text	0h0m (sleep time)	The tool does not support preview data adjustment.

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Connection Text

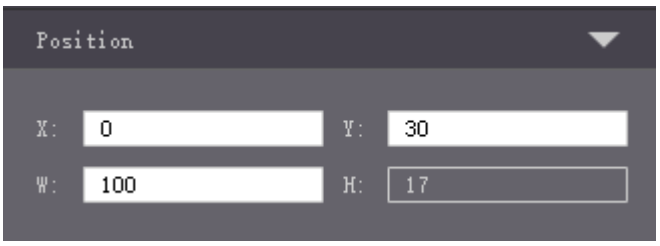


Connect text controls display two varying text using a connector based on the actual value of the bound data.



Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 390 X 390, the value in the attribute box cannot exceed 0 to 390.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.

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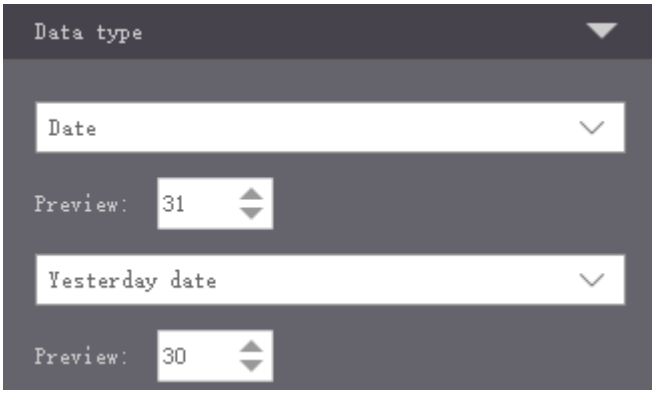


Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specify which type of data will be displayed on the watch system by the two text bindings that connect the text.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the connection text control, data of different data ranges can be entered based on the data type. For details, see the following table.

Data types supported by the connection text control on the watch are defined as follows:

Data Name	Value range	Description
Steps	[0-999999]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate
Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.

AQI	[0-500]	air pollution index
barometric pressure	[0-65535]	barometric pressure
Altitude	[-32678- 32678]	Altitude
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times
Date	[1-31]	Date
Maximum heart rate	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate
Maximum temperature	[-32678- 32678]	Maximum temperature
Lowest temperature	[-32678- 32678]	Lowest temperature
pressures	[0-100]	pressures
critical low temperature	(-126, 126)	critical low temperature
critical high temperature	(-128, 128)	critical high temperature
Date	(1-31)	Date
Monthly data	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	month
Yesterday Date	(1-31)	Yesterday Date
Tomorrow's date	(1-31)	Tomorrow's date

The second text also supports no data type:

Data Name	Value range	Description
No data.	NA	Achieve the XX effect by setting the second text data type to no data

5) Connector: Separator between two texts.



The value contains the following connection symbols:

Colon:

"-"

Slash '/'

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Backslash (\)

Click.

percent sign '%'

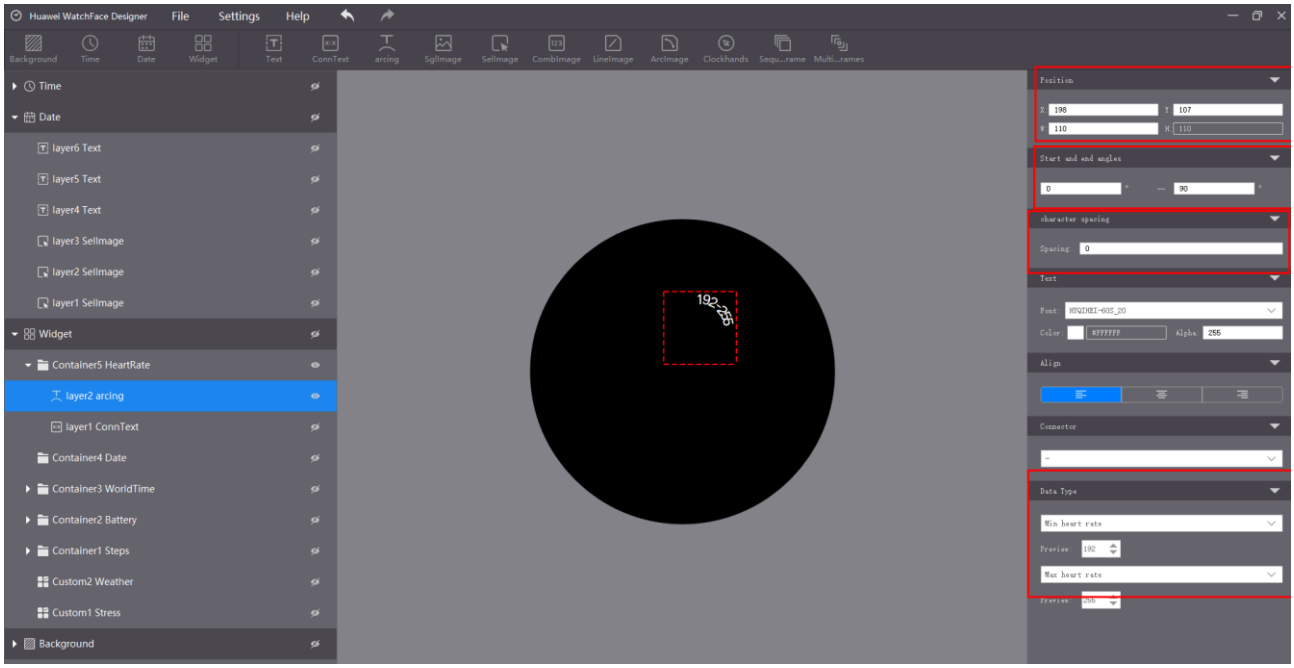
Space ""

Degree (superscript) "".

Arc Text

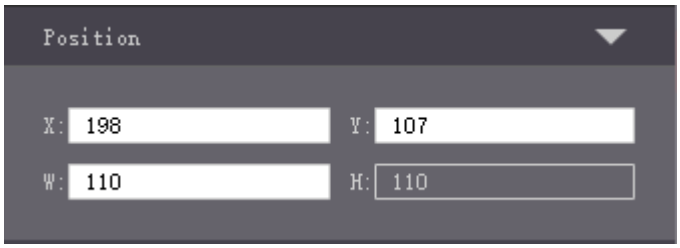


The arc text control is used to display bound text data, numbers, and time in arced mode. You can select two data and connectors supported by the element.



Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline. The value of H is the same as that of W and is automatically adjusted based on W. The arc text is inscribed according to the square frame of W and H. The arc text is displayed according to the arc of the inscribed circle.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 390 X 390, the value in the attribute box cannot exceed 0 to 390.

2) Start and End Angles: The arc text is displayed in the radian area based on the entered start and end angles (maximum angle: 360).).



3) Character Spacing: Adjusts the character spacing between arc text based on the spacing [0-100].



4) Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.



Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

5) Align: Align text. The options are Left, Center, and Right.



6) Data Type: Specify which type of data will be displayed on the watch system by the two text bindings that connect the text.

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Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the arc text control, data of different data ranges can be entered based on the data type. For details, see the following table.

The data supported by the connection text control on the watch is the same as that supported by the text. For details, see the attributes supported by the text control.

The second text also supports no data type:

Data Name	Value range	Description
No data.	NA	Achieve the XX effect by setting the second text data type to no data

7) Connector: Separator between two texts.



The value contains the following connection symbols:

Colon:

"-"

Slash '/'

Backslash (\)

Click.

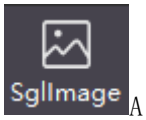
percent sign '%'

Space ""

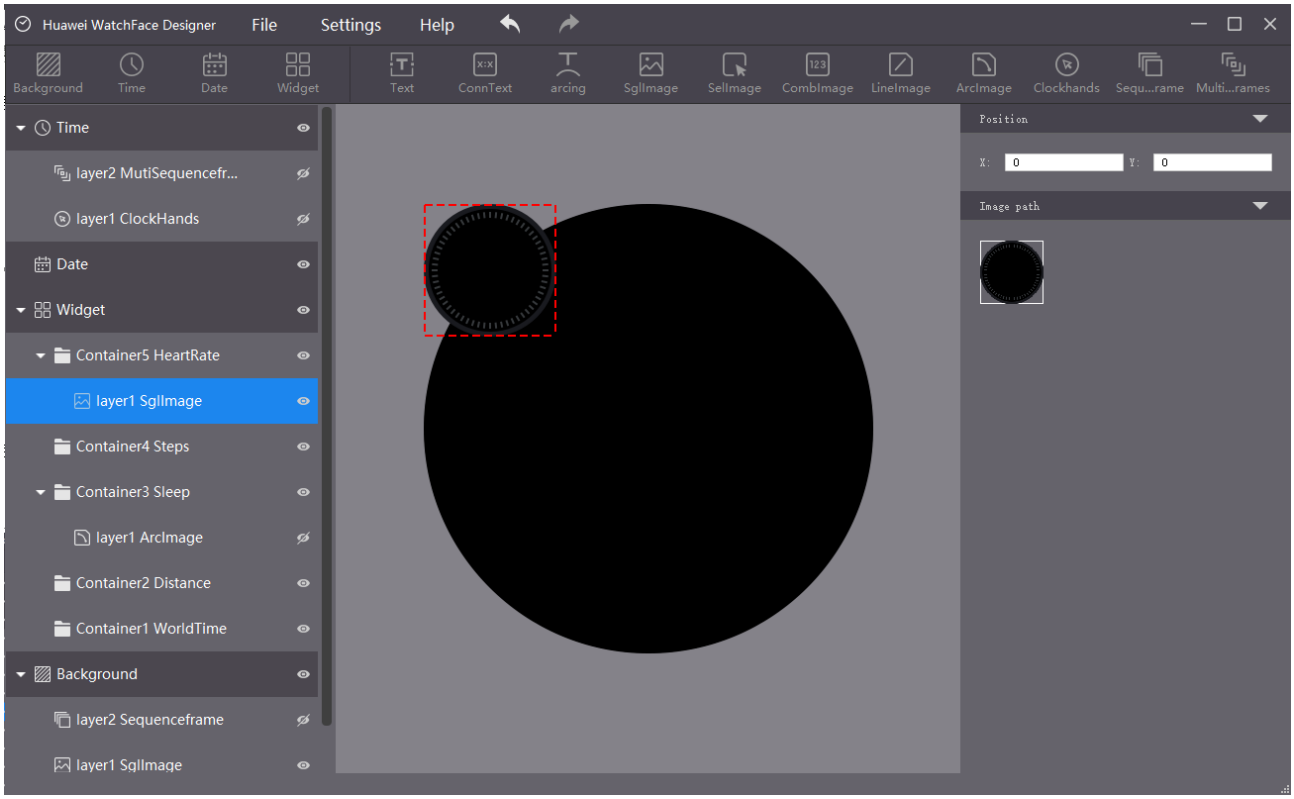
Degree (superscript) "".

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monograph



A single image is used to draw a static image, such as the static background image and step count icon.



Description of operations in the attribute area:

1) Image path: Click the plus sign (+) to select an image.



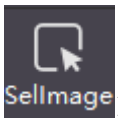
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

2) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

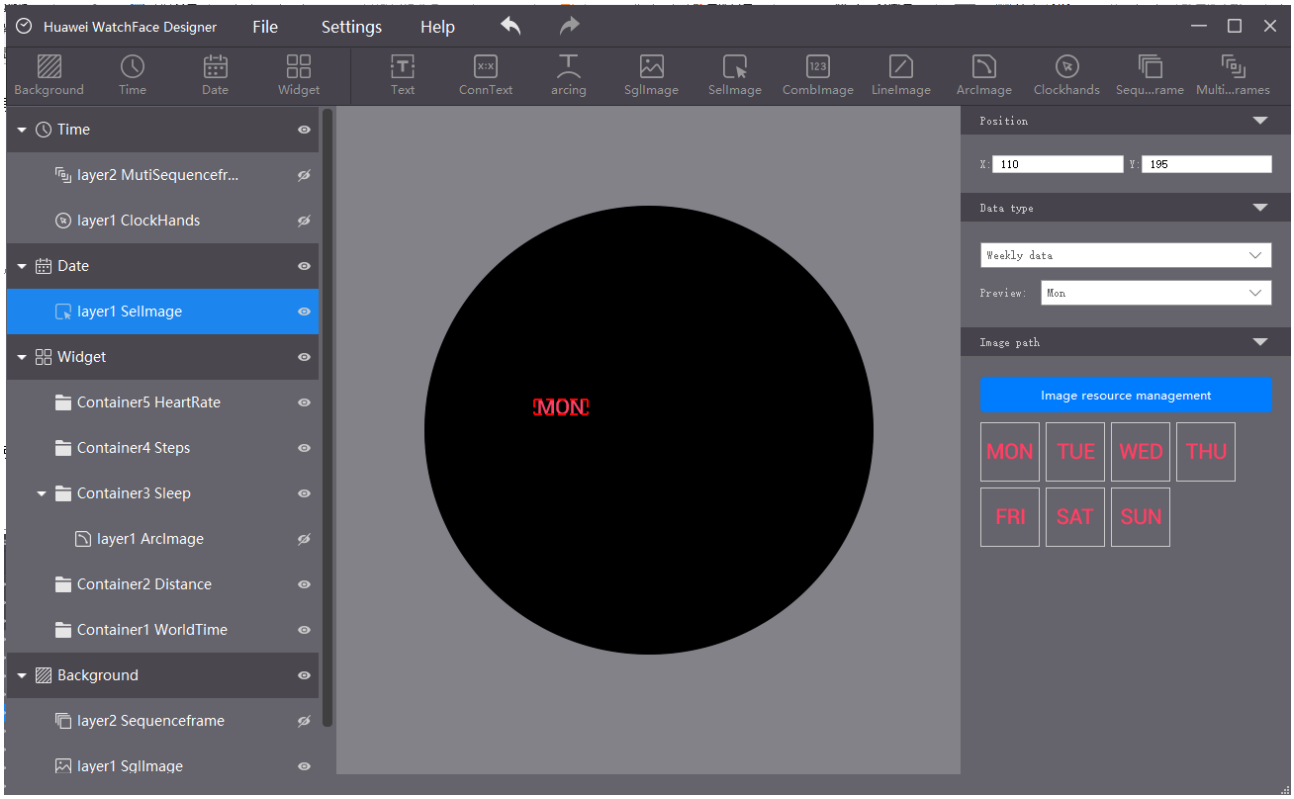


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

Selecting a picture

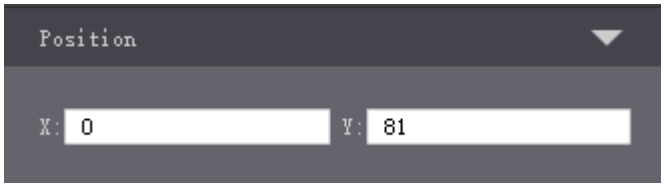


Displays different images based on the actual value of the bound data, such as weather, week, and date.



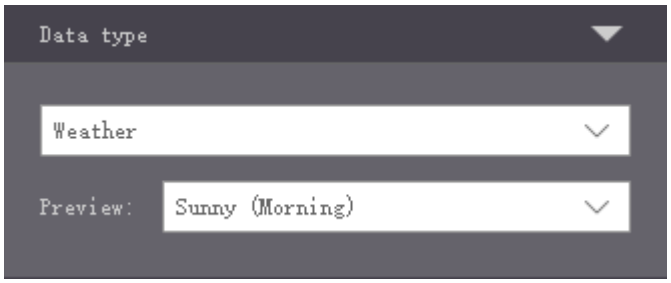
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) Data Type: Specifies the type of data displayed on the watch system by the image selection control binding.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the image selection control, different data types can be selected to display different images.

Data types supported by the image selection control on the watch are as follows:

3) Data Name	Value range	Number of images	Description
Morning Afternoon	[0-2]	3	0:am 1:pm 2: A transparent blank image (required in 1.0 and 2.0)
month		12	1: january; 2: february; 3: march; 4: april; 5: may; 6: june; 7: july; 8: august; 9: septembe; 10: octo October 11: november 12: december
Weekly data		7	1: Monday 2: Tuesday Tuesday 3: Wednesday Wednesday 4: Thursday Thursday 5: Friday Friday 6: Saturday 7: Sunday Sunday

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Weather Type	[0-10]	11	0: unknown: weather unknown due to network disconnection; 1: sunny_day; 2: sunny_night; 3: overcast; 4: cloudy; 5: rain; 6: thunder; 7:s Now snow 8:dust_storm; sandstorm 9: hazy; sunny day; 10: forg; cloudy day
Battery Enumeration	[0-10]	11	0 to 10: 0%, 10%, 20%, 30...100%
High-order bits of the clock	[0-2]	3	Indicates the ten-digit value of the hour. The value can be 0 or 2 in the 24-hour or 12-hour format.
Clock low bit	[0-9]	10	Indicates the ten-digit value of the hour. The value can be in the 24-hour or 12-hour format. The value ranges from 0 to 9.
Minute High Bit	[0-5]	6	Ten-digit number of minutes.
Minute Low Bit	[0-9]	10	minute number
Second High Bit	[0-5]	6	Ten-digit number of seconds
Second low	[0-9]	10	Number of bits in seconds
Date High Bit	[0-3]	4	Ten-digit number of a date.
Date Low	[0-9]	10	Number of digits of a date.
lunar month		12	1: first month 2: February 3: March 4: April 5: May 6: June 7: July 8: August 9: September 10: October 11: Winter 12: Lama
Yesterday's Date High	[0-3]	4	Ten digits of yesterday's date
Yesterday's Date Low	[0-9]	10	Single digit value of yesterday's date
Tomorrow's date high	[0-3]	4	Ten digits of tomorrow's date
Tomorrow's date low.	[0-9]	10	One-digit number of tomorrow's date
Lunar calendar date high		5	Ten-digit number of the date of the lunar calendar (early/ten/20/3/2)
Lunar Date Low		10	Lunar calendar date (10/1/2/3/4/5/6/7/8/9)
24 Top 12 of the 24		13	Small cold, big cold, spring, rain, stinging, spring equinox, Qingming, Gu rain, summer beginning, small full, busy seed, and summer solstice (the first picture is blank)
24 Mid-Term 12		13	Light heat, heavy heat, beginning of autumn, summer heat, white dew, autumn equinox, cold dew, frost

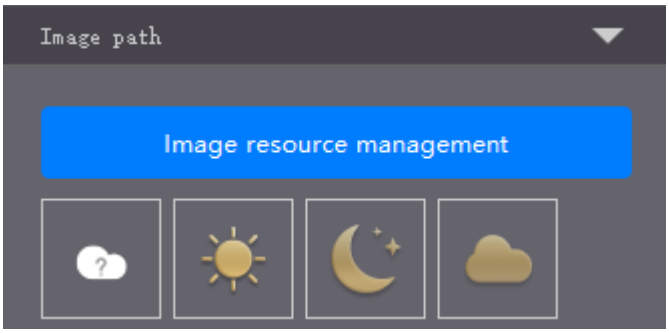
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			fall, beginning of winter, light snow, heavy snow, winter solstice (the first picture is blank)
Which of the first 12 solar terms is before the lunar calendar?		13	First 12 Terms Before Which Term (ex: Little Cold Big Cold) (The first picture is blank)
Which of the last 12 solar terms is before the lunar calendar?		13	Last 12 Terms Before Which Term (ex: between the beginning of autumn) (the first picture is a blank picture)
12 hours		12	Zi, U, Yin, Miao, Chen, Si, Wu, Wei, Shen, You, Xu, Hai
Upper bits of the dual time zone clock	[0-2]	3	Ten-digit value of the dual-time zone clock
Lower bits of the dual time zone clock	[0-9]	10	Single-bit value of the dual time zone clock
Dual Time Zone Morning/Afternoon		3	0:am 1:pm 2: A transparent blank image (required in 1.0 and 2.0)
High-order bits of the minute in dual time zones		6	Ten-digit number of minutes in dual time zones.
Minute Low Bits of Dual Time Zone		10	Single-digit number of minutes in dual time zones
Temperature Type	[0-1]	2	0 degrees Celsius, 1 degrees Fahrenheit
AQI Air Quality Class	[0-5]		Air quality level for sixth gear
heart rate interval	[0-5]	5	Five-level heart rate range. (If the value is less than 96 or 255, the range is invalid and is displayed as 0 as a blank image.)
random background	[0-4]	5	Switch between five background images.

Note: 24 Images added to solar-related controls cannot be the same (including blank images).

4) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.

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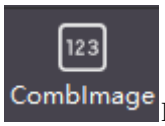


Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

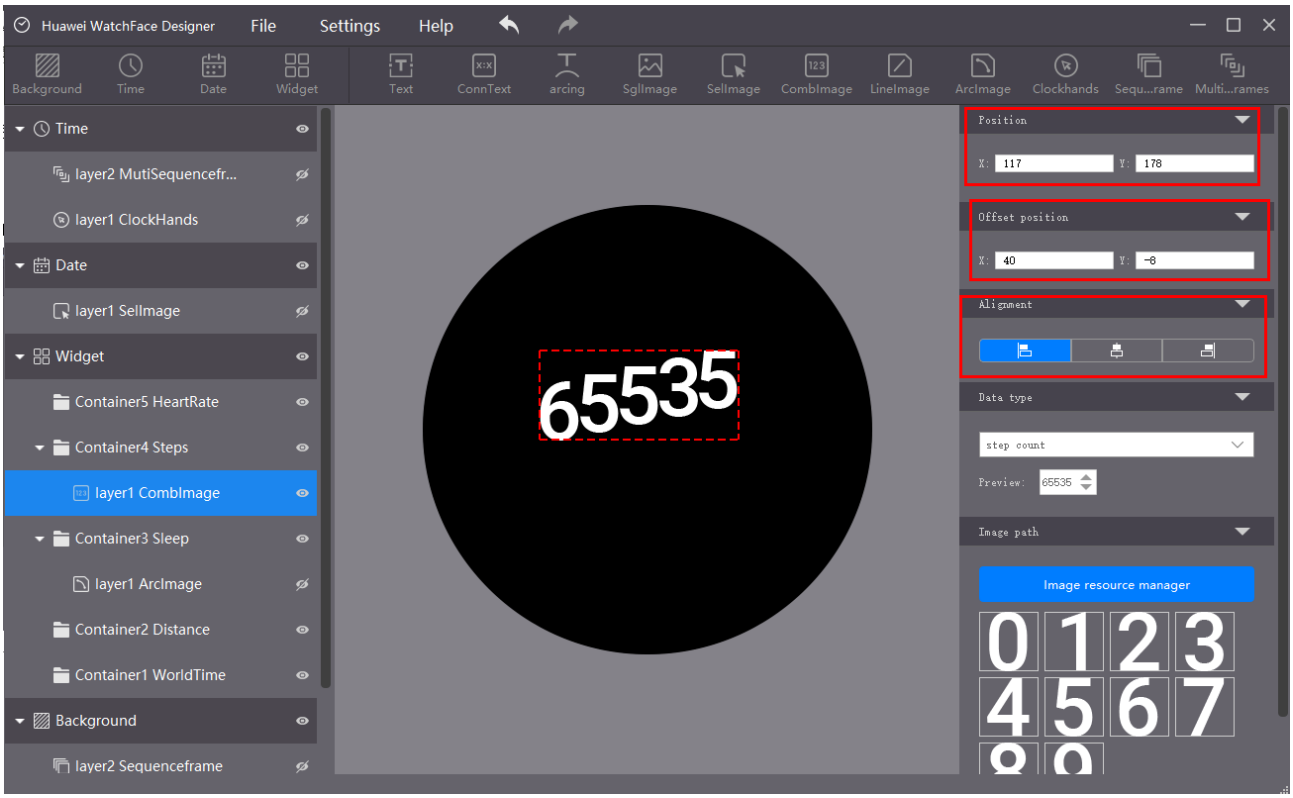
Note:

When Data Type is set to Morning Afternoon or Double Time Zone Morning, Afternoon, the first two images are morning and afternoon in sequence. A transparent blank image must be added to the third image so that the image is not displayed in the 24-hour format.

combination chart

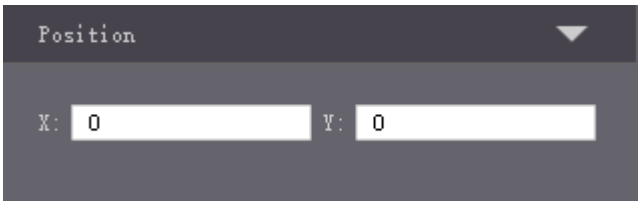


Draw a combination of 10 digits (0 to 9) to draw a number, such as the number of steps.



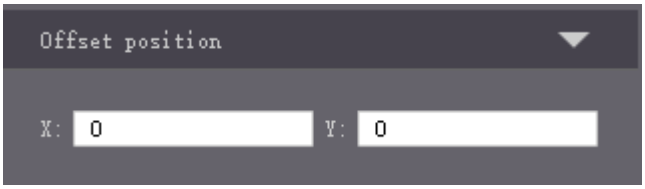
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

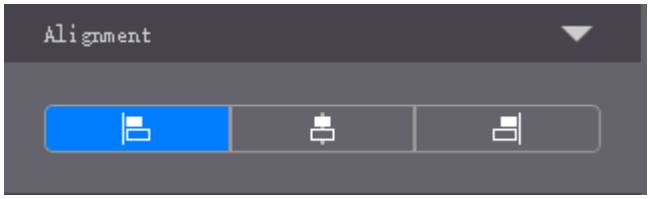


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) Offset position: x indicates the horizontal offset (X is greater than 0), and Y indicates the vertical offset (Y is a positive integer, zero, or negative integer). The preview effect can be previewed in the preview area.



3) Alignment: Three alignment modes are supported: left, center, and right.



Note: Alignment rules

a. Align left: Align with the x axis in the upper left corner of the first image on the left.

b. Align: Align with the center point of the most combined chart.

c. Right-align: Align the image with the x axis in the upper right corner of the first image on the right.

4) Data Type: Specifies the type of data displayed on the watch system by the image selection control binding.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the image selection control, different data types can be selected to display different images.

Data types supported by the combination chart control on the watch (subject to the tool):

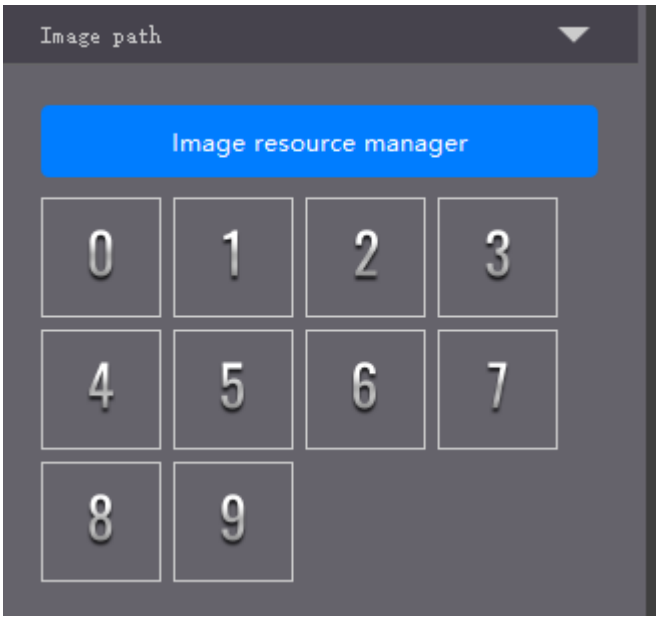
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Data Name	Value range	Number of images	Description
Steps	[0-999999]	10 (0-9)	Steps
calorie	[0-65535]	10 (0-9)	calorie
heart rate	(0-255]	11 (0-9, --)	heart rate
Medium-high intensity time	[0-65535]	10 (0-9)	Medium-high intensity time
AQI	[0-500]	11 (0-9, --)	air pollution index
barometric pressure	[0-65535]	11 (0-9, --)	barometric pressure
Electricity	[0-100]	10 (0-9)	Electricity
Standing times	(0-255]	10 (0-9)	Standing times
temperature	[-32678-32678]	12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
maximum temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
Lowest temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
critical high temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
critical low temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the

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			temperature is below zero.
Date	[1-31]	10 (0-9)	Date
Yesterday Date	[1-31]	10 (0-9)	
Tomorrow's date	[1-31]	10 (0-9)	
Monthly data	[1-12]	10 (0-9)	
Maximum heart rate	(0-255]	11 (0-9, --)	Maximum heart rate

5) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.



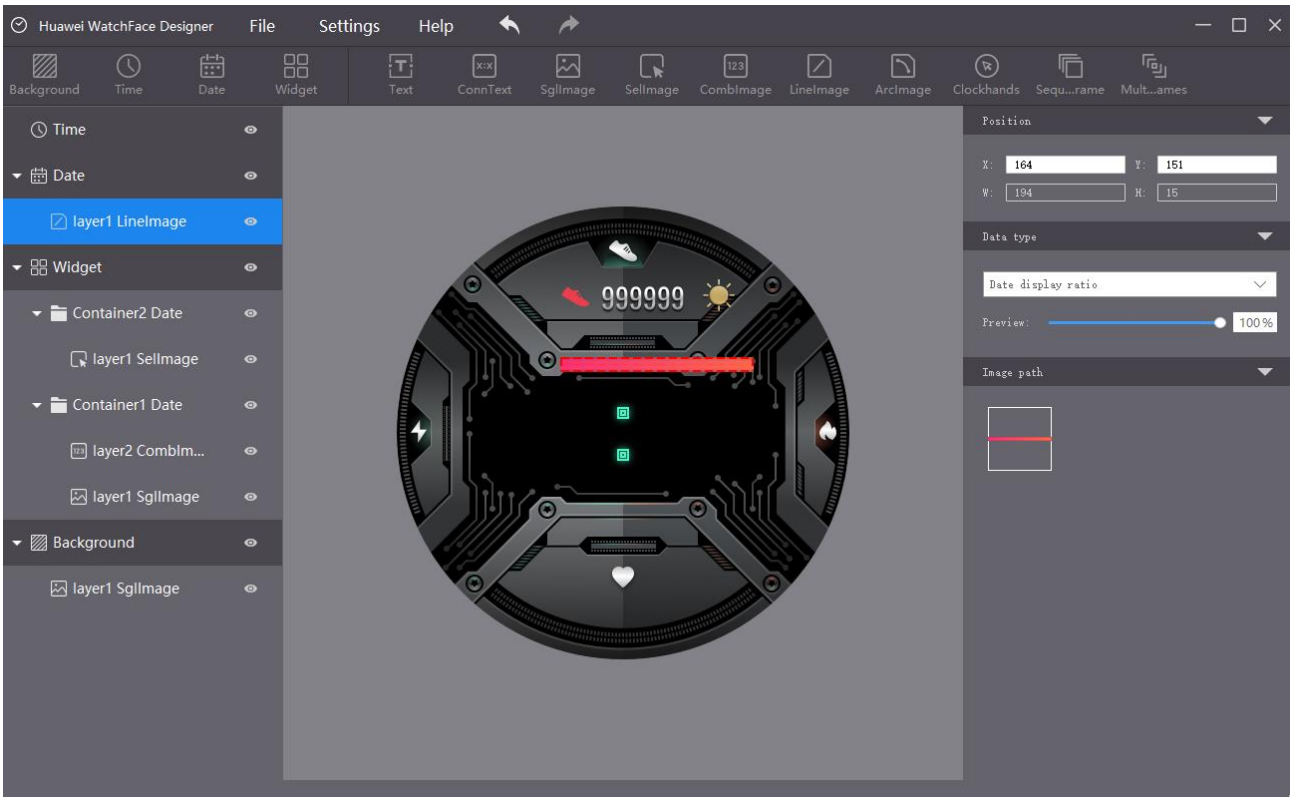
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

Line chart



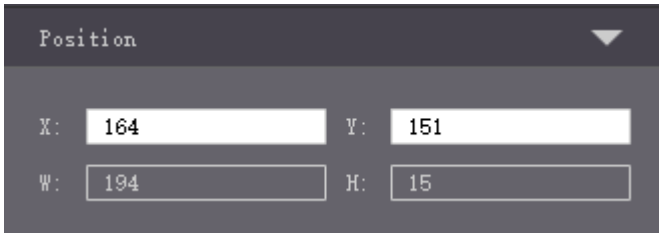
Line chart: Draw a progress bar, for example, step completion. Only the horizontal progress bar from left to right is supported.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) Data Type: Specifies the type of data displayed on the watch system by the linear progress bar binding.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

Data types supported by the line-shaped progress bar control on the watch are as follows:

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Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.
heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.
air index ratio	[00%-100%]	100% at 500, aqi/500

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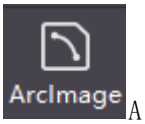
pressure index	[00%-100%]	(pressure-300) /800
Altitude Ratio	[00%-100%]	(Current Altitude - (-800))/(8848-(-800))
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
barometric index ratio	[00%-100%]	The maximum pressure is 1100, the minimum pressure is 300, and the percentage of the current pressure is as follows:
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

3) Image path: Click the + icon to select a straight-line progress bar image.



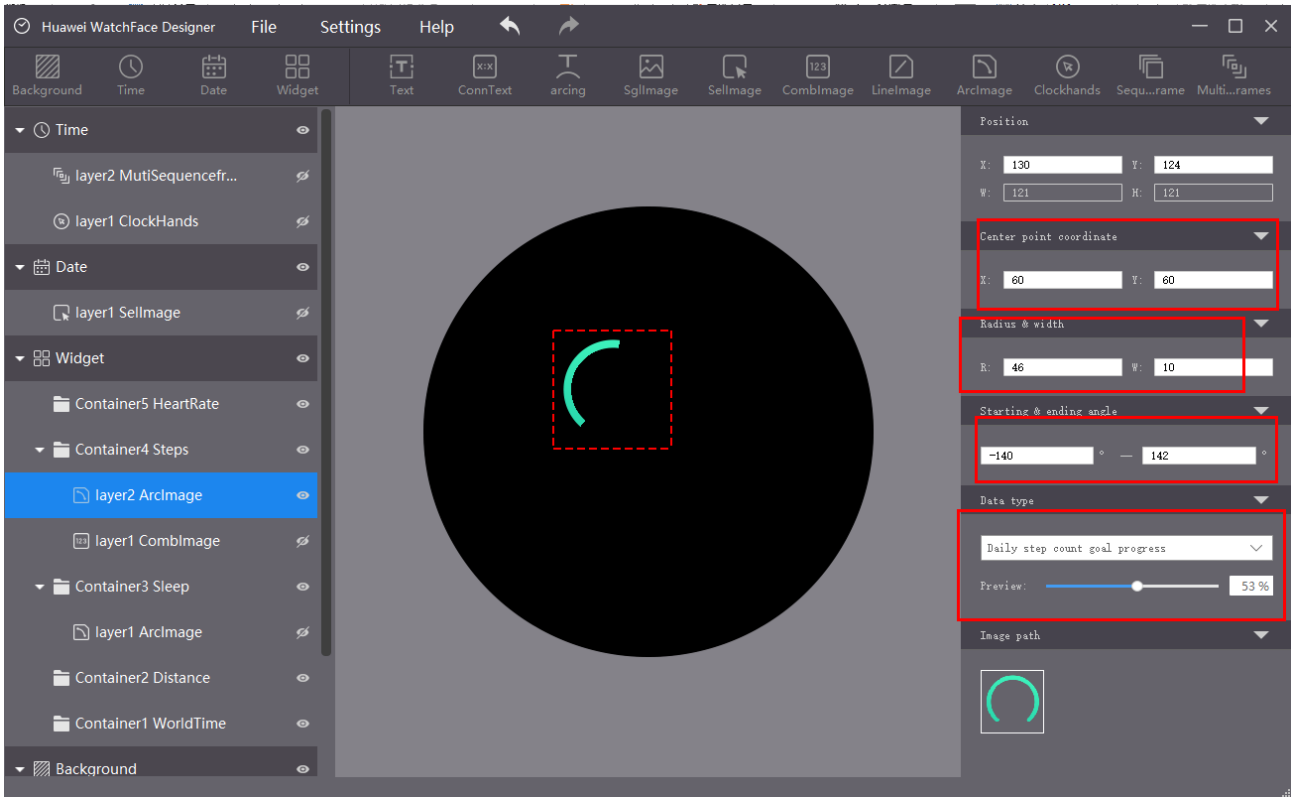
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

arc chart



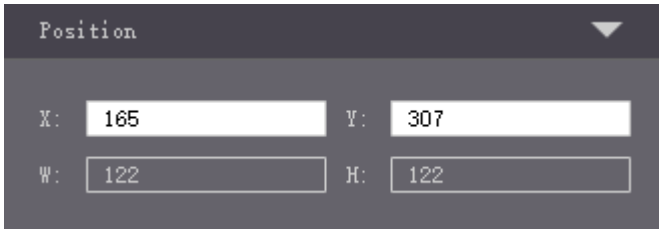
A curve chart. You can draw a curved progress bar, such as the power percentage and step completion degree.

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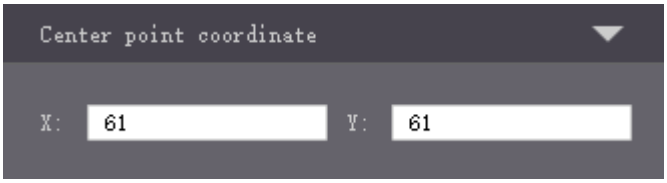
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



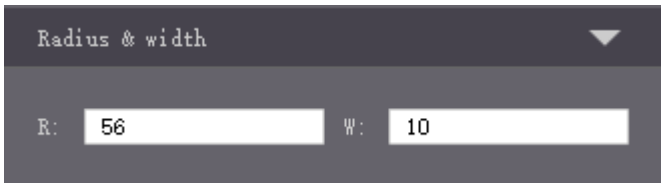
Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) X and Y: coordinate of the center of the round progress bar in the image coordinate system.



Note: The origin (0, 0) of the image coordinate system is the upper left corner of the image. It is recommended that the center coordinate of the circle be the center point of the image. For example, if the image size is 100 x 100, the recommended center coordinate is (50, 50).

3) Radius and Width R. W:R indicates the radius of the circle progress bar (distance between the center of the circle and the middle line of the progress bar); W indicates the width of the progress bar.



Note: It is recommended that the value of R be less than or equal to (image side length – W)/2. It is recommended that the value of W be less than the value of R.

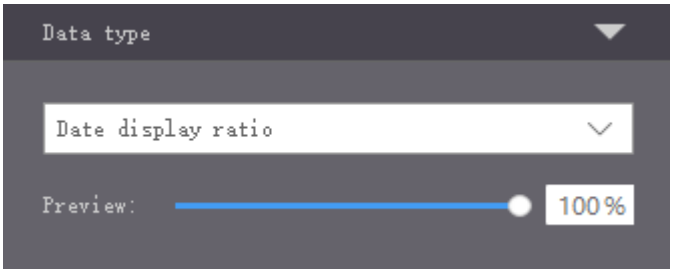
4) Start and End Angle: indicates the angle range of the round progress bar with the center as the center. The start angle is the start point of the progress bar, and the end angle is the end point of the progress bar.



Note: The angle value cannot exceed 0-360.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

5) Data Type: Specifies the type of data displayed on the watch system by the circular progress bar binding.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

The following table lists the data types supported by an arc chart on the watch.

Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.

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heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.
air index ratio	[00%-100%]	100% at 500, aqi/500
pressure index	[00%-100%]	(pressure-300) /800
Altitude Ratio	[00%-100%]	(Current Altitude - (-800))/(8848-(-800))
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
barometric index ratio	[00%-100%]	The maximum pressure is 1100, the minimum pressure is 300, and the percentage of the current pressure is as follows:
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

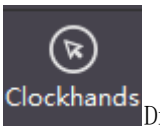
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6) Image path: Click the + icon to select the background texture image of the round progress bar.

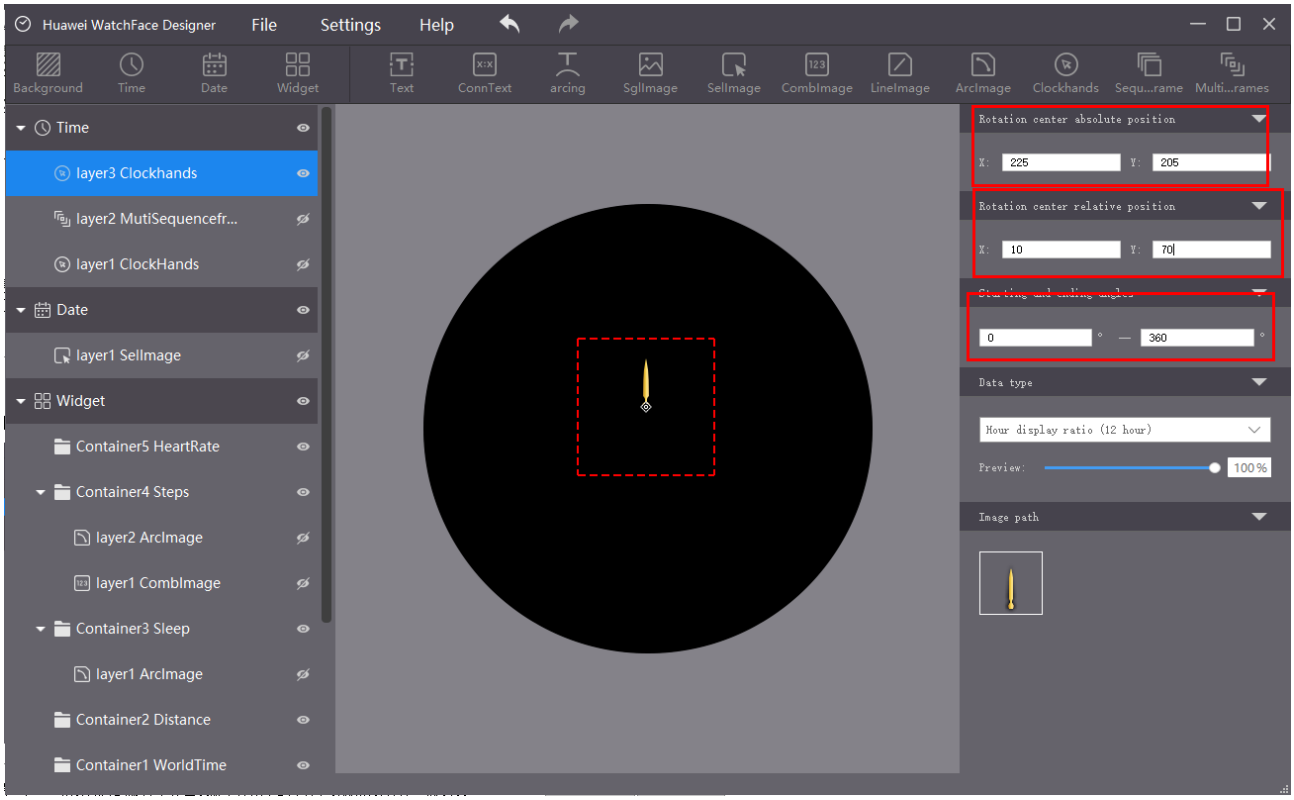


Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px. You are advised to use a square image.

pointers



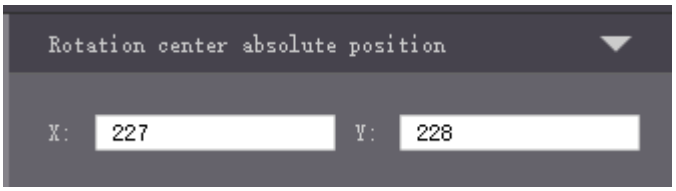
Draw pointers, such as hour, minute, and second. For example, the power percentage can also be used as a pointer effect.



Description of operations in the attribute area:

1) Absolute position of the rotation center X,Y: coordinates of the rotation center of the pointer image in the watch face coordinate system. For example, the pointer control rotates based on the center of the watch face. For example, the value of X and Y is (195, 195).

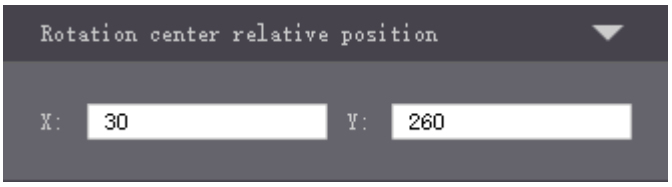
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Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

Note: The rotation center point is the point around which the pointer picture rotates.

2) Relative positions X and Y of the rotation center: coordinates of the rotation center of the pointer picture in the pointer picture coordinate system. For example, the sample pointer picture rotates by using the position (14, 280) of the picture coordinate system as the rotation center.



Note: The origin (0, 0) of the coordinate system of the pointer image is the upper left corner of the pointer image. The values of X and Y cannot exceed the width and height of the picture. For example, if the size of the pointer picture is 50 x 300, the value of X cannot exceed 50 and the value of Y cannot exceed 300.

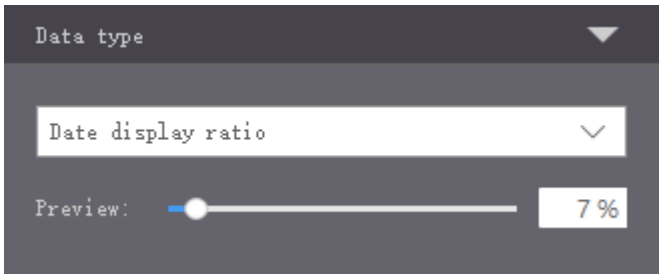
3) Start and End Angles: The angle range of the pointer picture to rotate around the rotation center. When the start angle is smaller than the end angle, the rotation is performed clockwise. When the start angle is greater than the end angle, the rotation is performed counterclockwise.



Note: The angle value must be within the range of －360 to 360. The value can contain four decimal places.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

4) Data Type: Specifies the type of data that the pointer binding displays for the watch system.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For pointer controls, 0% – 100% correspond to the range of the start angle to the end angle.

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The following table lists the data types supported by the watch pointer control.

Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.
heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.

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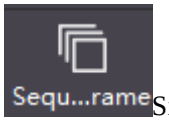
air index ratio	[00%-100%]	100% at 500, aqi/500
pressure index	[00%-100%]	(pressure-300) /800
Altitude Ratio	[00%-100%]	(Current Altitude - (-800))/(8848-(-800))
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
barometric index ratio	[00%-100%]	The maximum pressure is 1100, the minimum pressure is 300, and the percentage of the current pressure is as follows:
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

5) Image path: Click the plus sign (+) to select a pointer image.



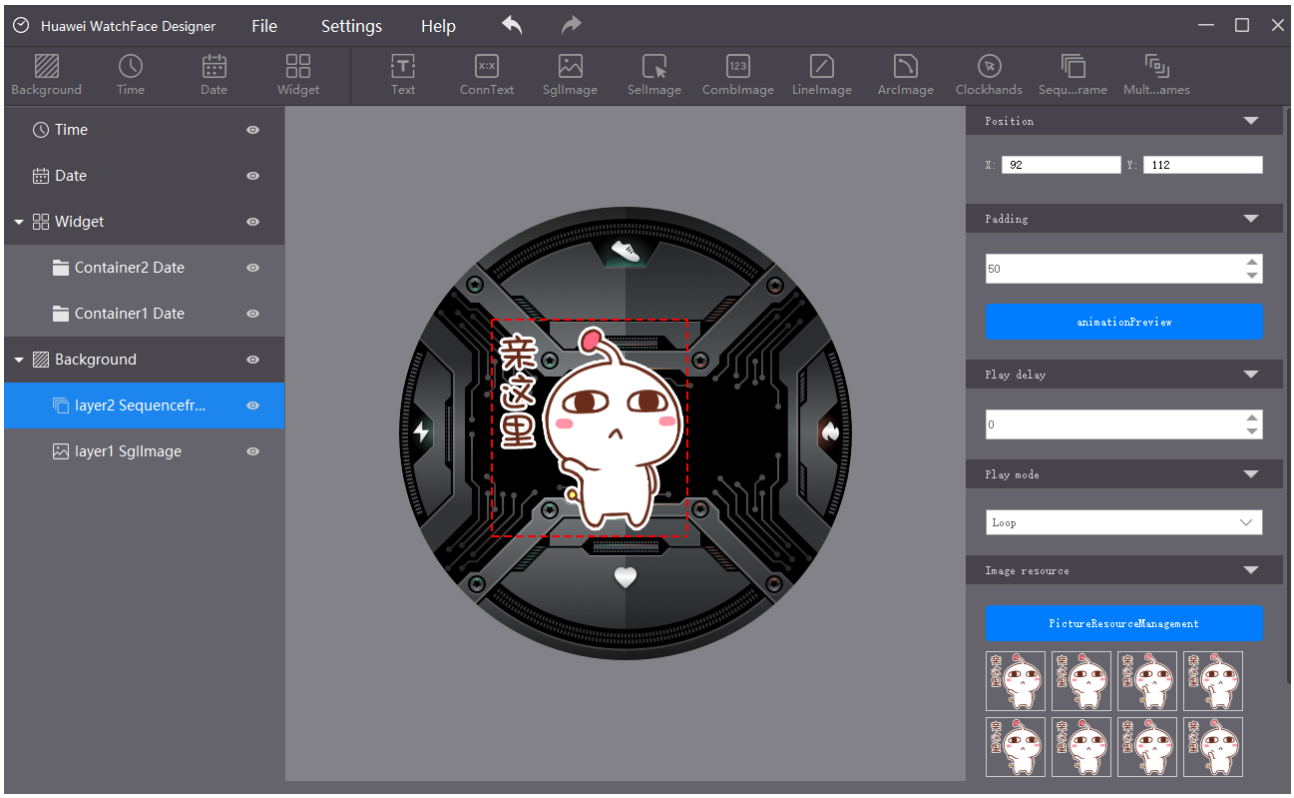
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

single sequence frame



Single-group sequence frame controls are typically used to draw dynamic background images.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

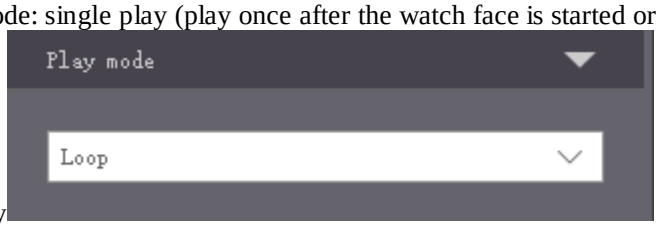
2) Frame interval: interval for switching sequence frames, in milliseconds. 50 ms indicates 20 frames (50 to 80). You can click the animation to preview the playback speed.



3) Playback delay: delay for starting the playback, in ms. For example, if the playback starts after the screen is on for 200 ms, this parameter can also be used to set the pause duration between two cycles in loop mode. The default value is 0, and the value can be changed before the interval ranges from 0 to 200.

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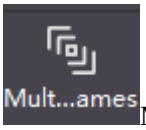


4) Play mode: sequence frame play mode: single play (play once after the watch face is started or the screen is turned on) or cyclically 

5) Image resource: Click the image resource management icon to select an image. Images must be added in sequence. The selected images must be of the same resolution (for BMP images, only 16-bit or 24-bit depth is supported).

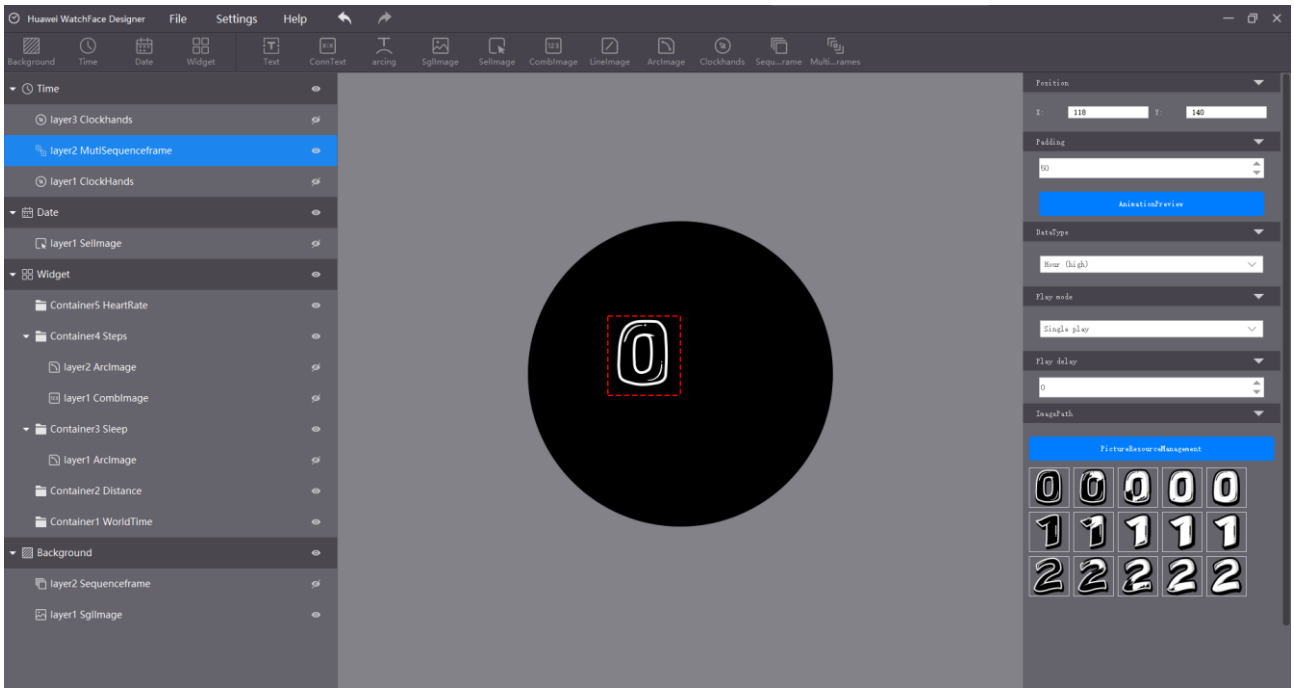


Multiple groups of sequence frames



Multi-group sequence frame controls are generally used to draw the dynamic effect of each data type under the time element.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 390 X 390 watch face, the value of this field cannot exceed 0 to 390.

2) Frame interval: interval for switching sequence frames, in milliseconds. 50 ms indicates 20 frames (50 to 80). You can click the animation to preview the playback speed.



3) Data Type: Specifies the type of data displayed on the watch system by multiple sequence frame control bindings.



Data types supported by the image selection control on the watch are as follows:

Data Name	Value range	Number of images	Description
Minute Low Bit	[0-9]	10x2	The value is a 10-digit number ranging from 0 to 9. The value ranges from 2 to 5 for each digit.
Minute High Bit	[0-5]	6x2	The value ranges from 0 to 5. The value ranges from 2 to 5.
Clock low bit	[0-9]	10x2	The value is an integer ranging from 0 to 9. The value ranges from 2 to 5 for each digit.
High-order bits of the clock	[0-2]	3x2	Ten-digit number of hour. The value ranges from 0 to 2. The value ranges from 2 to 5.

Note: The number of images to be added for each numeric element must be the same. For example, if you select the least significant bit of minute, if there are three images for any of the digits 0 to 5, the other four digits must also be three images.

4) Play mode: single play (play once after the watch face is started or the screen is turned on) or cyclic play



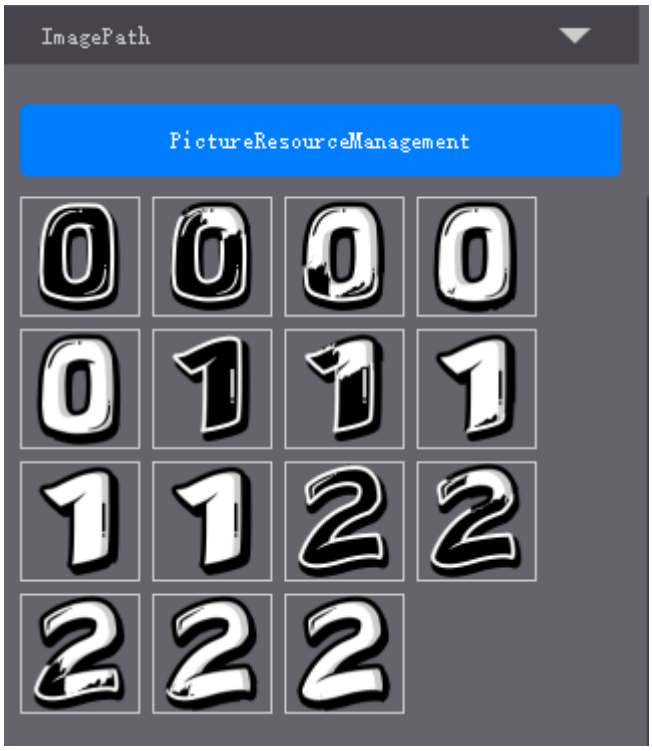
5) Playback delay: delay for starting the playback, in ms. For example, the playback starts after the screen is on for 200 ms.



Playback delay: delay for starting the playback, in ms. For example, if the playback starts after the screen is on for 200 ms, this parameter can also be used to set the pause duration between two cycles in loop mode. The default value is 0, and the value can be changed before the interval ranges from 0 to 200.

6) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.

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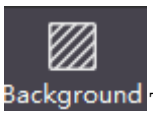


Note: The number of images to be added for each numeric element must be the same. For example, if you select the least significant bit of minute, if there are three images for any of the digits 0 to 5, the other four digits must also be three images.

4.5 Sports Band - B6 (Fides), Aragorn, Hestia

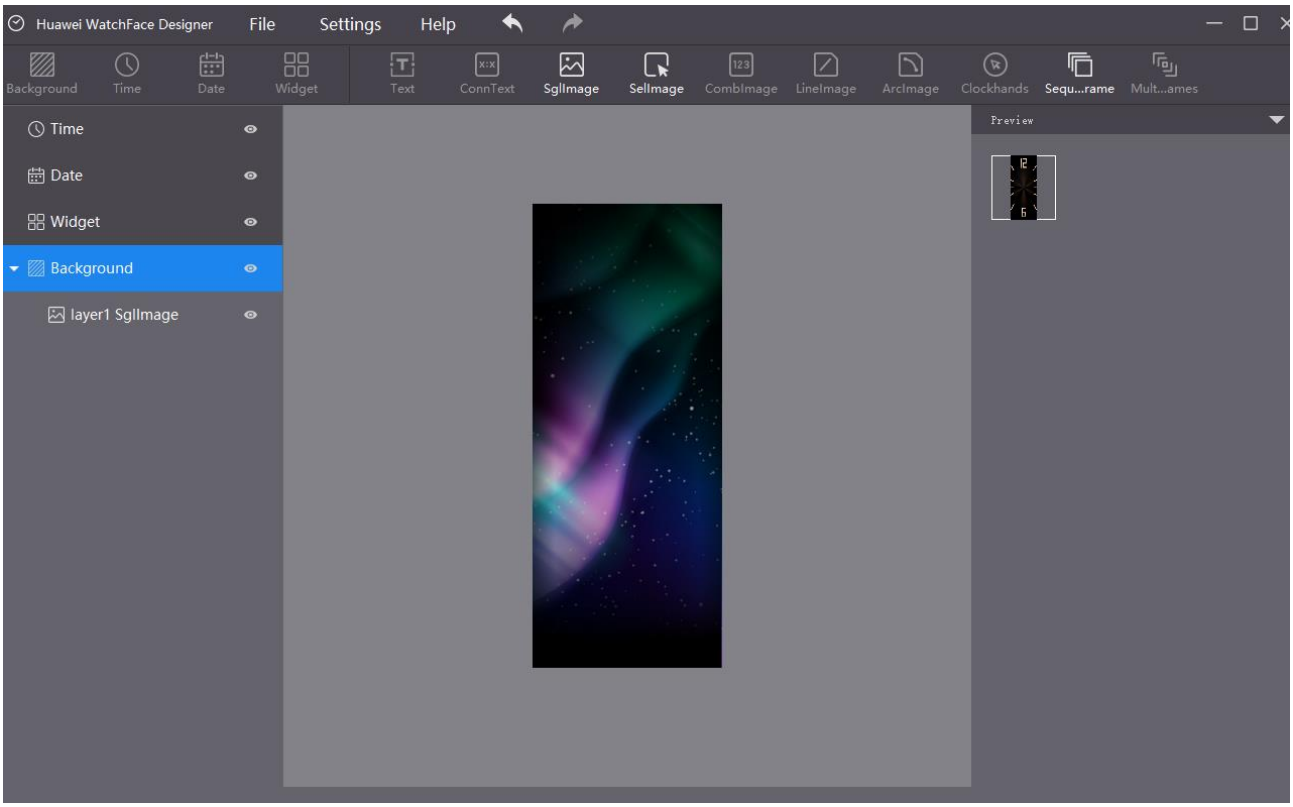
4.5.1 Elements

Background

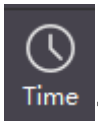


The background element is used as the background of the watch face. Generally, a picture of the same size is used as the background of the watch face. It is an indispensable element of the watch face.

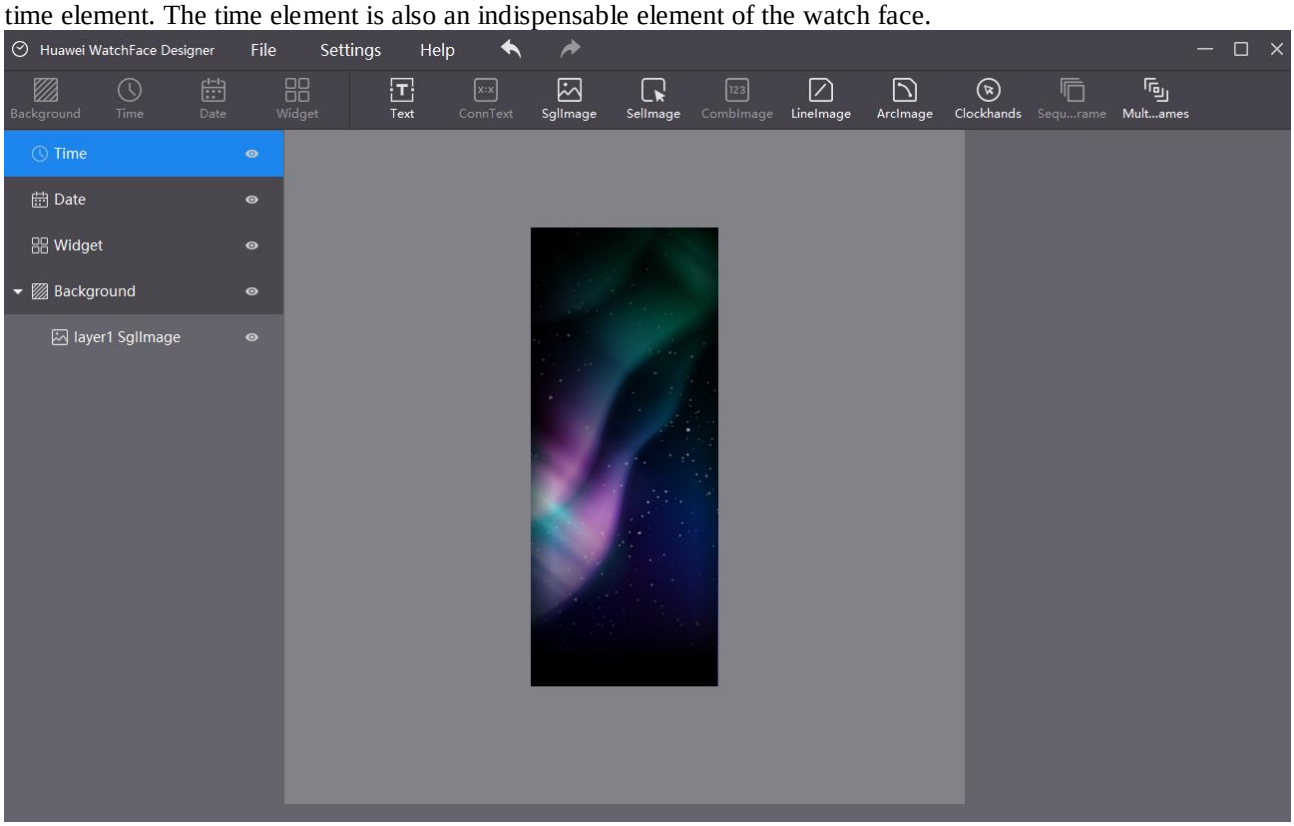
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Huawei WatchFace Designer
File
Settings
Help
Background
Time
Date
Widget
Text
ConnText
SglImage
SelImage
CombImage
LineImage
ArcImage
Clockhands
Sequ...rame
Mult...ames
Time
Date
Widget
Background
layer1 SglImage
Preview

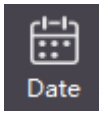
Time



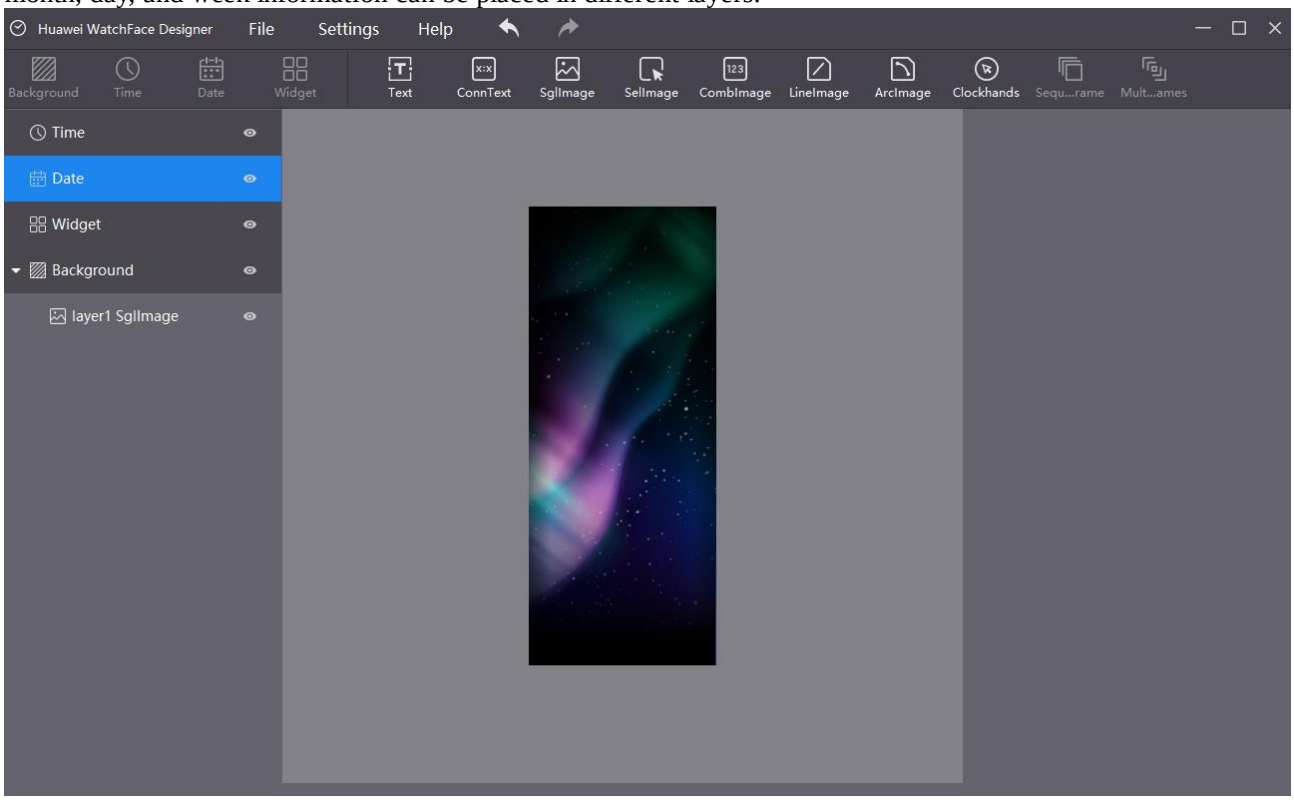
Time element. Generally, the hour, minute, and second information on the watch face is placed in the time element. The time element is also an indispensable element of the watch face.



Date



Date element. Generally, the month, day, and week information is placed in the date element. The month, day, and week information can be placed in different layers.

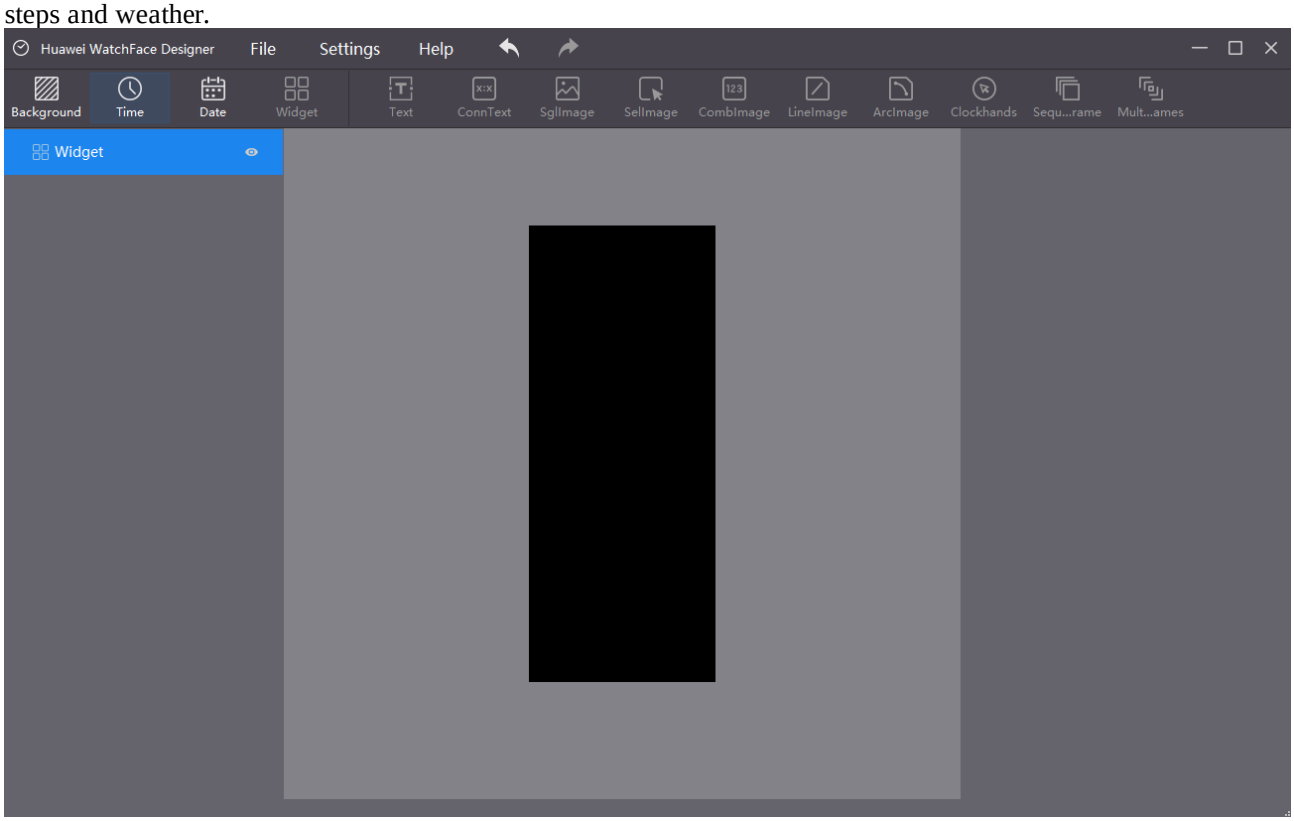


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4.5.2 control



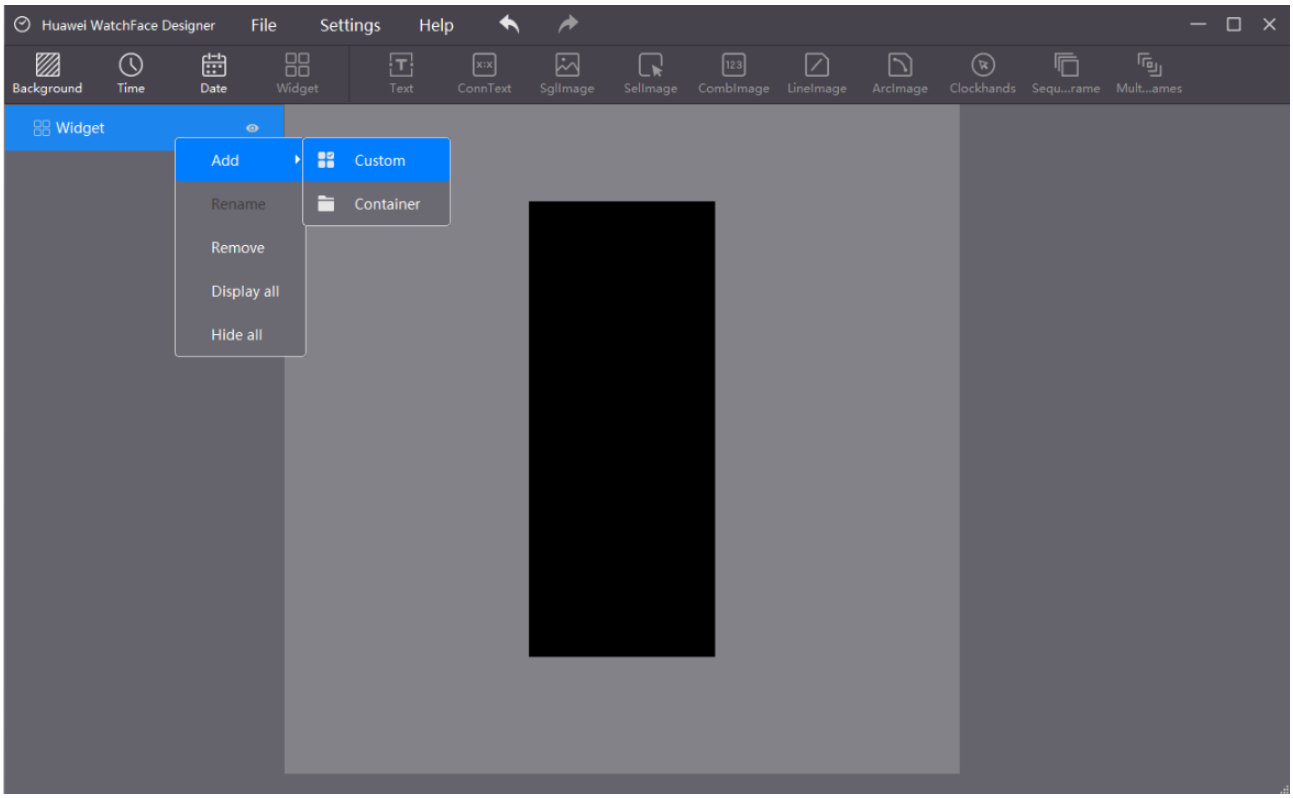
Control. Generally, information other than time and date is placed in control elements, such as steps and weather.



Custom

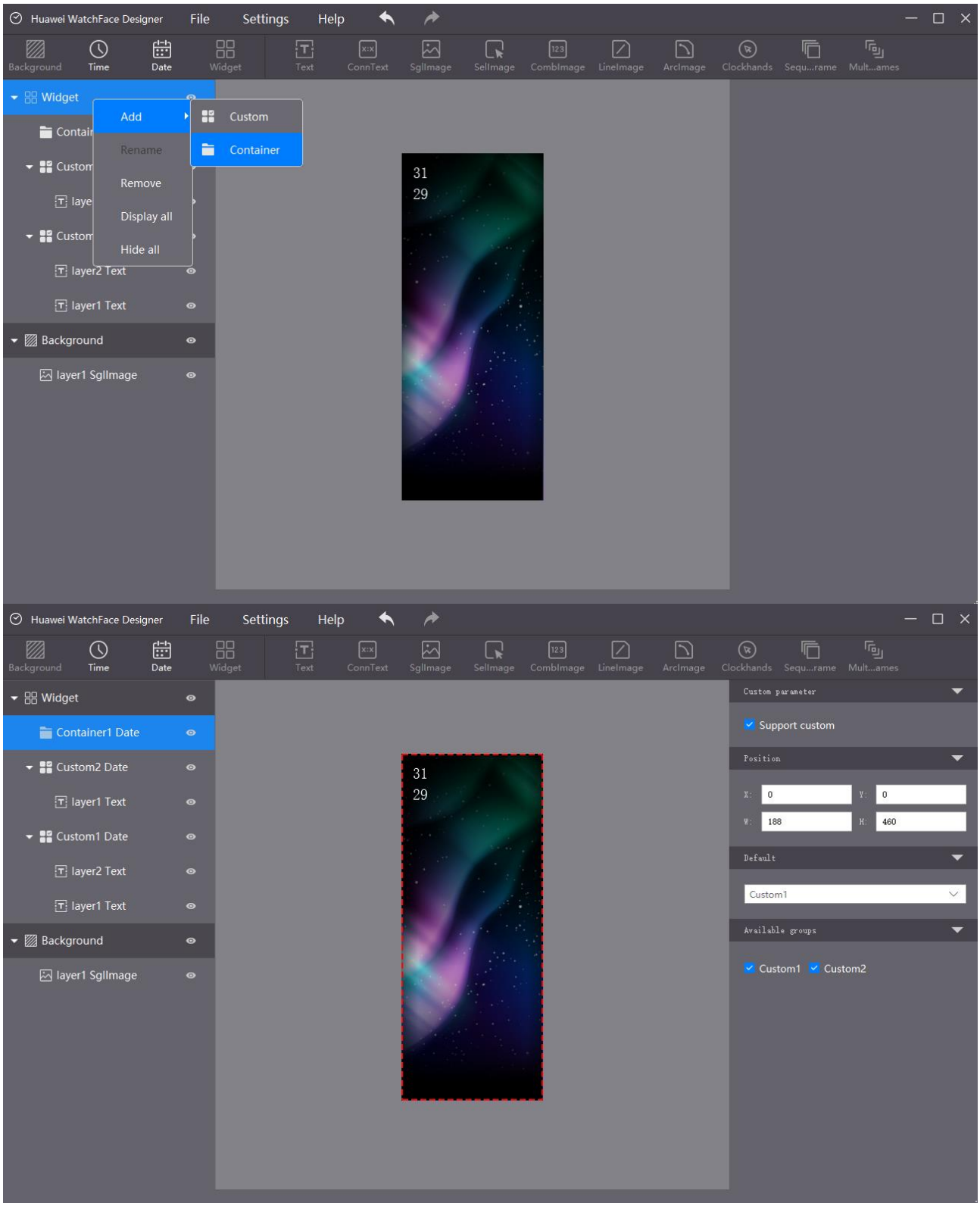
When Custom Attribute is selected in the attribute bar of the time, date, or background element, or when you right-click a control element and choose Custom from the shortcut menu, you can add the element as custom. If you support customization, an element can contain multiple customization options. If you do not support customization, an element can consist of multiple drawing units.

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container

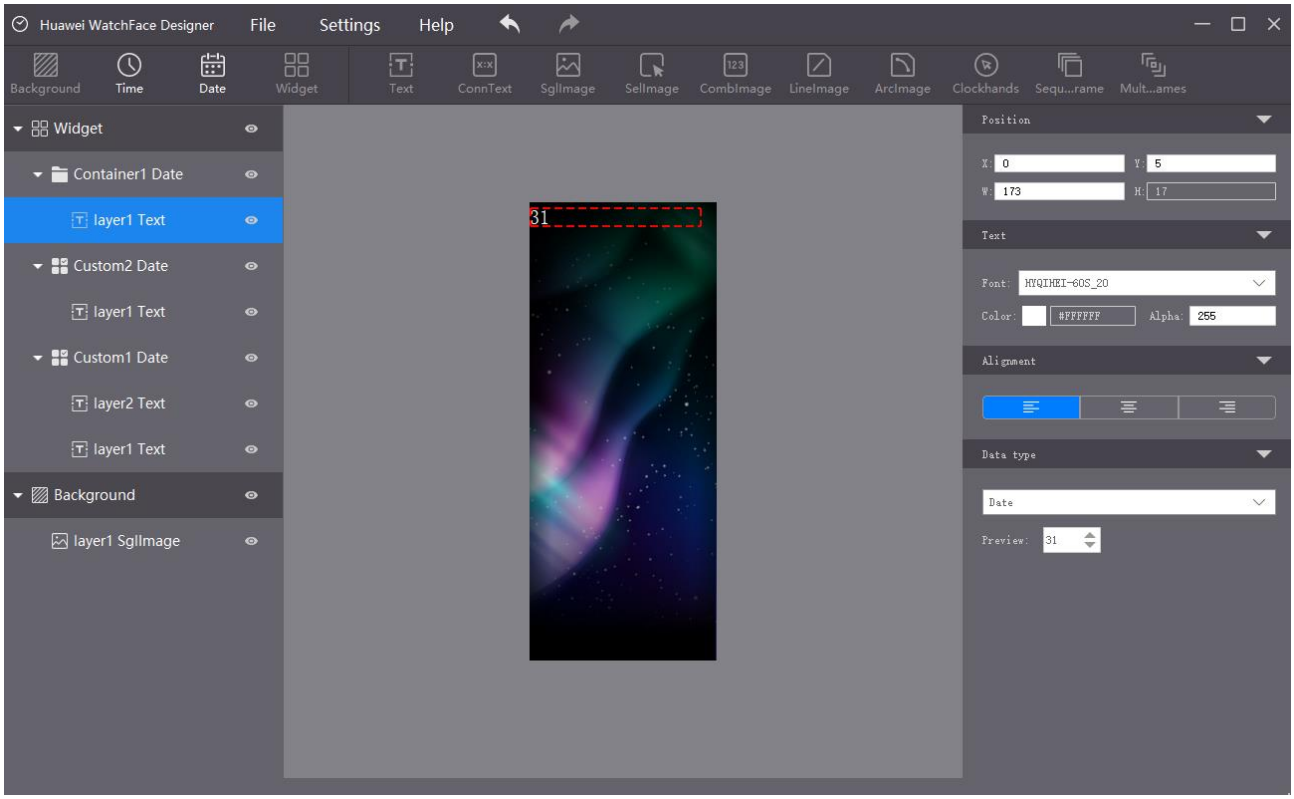
Containers exist only in control elements. In the layer management area, right-click a control element and choose Container from the shortcut menu. The container property bar supports customization. You can define optional custom collections by combination of optional options.


Huawei WatchFace Designer
File
Settings
Help
Background
Time
Date
Widget
Text
ConnText
SglImage
SelImage
CombImage
LineImage
ArcImage
Clockhands
Sequ...rame
Mult...ames
Widget
Add
Rename
Remove
Display all
Hide all
Custom
Container
layer2 Text
layer1 Text
Background
layer1 SglImage
31
29
Container1 Date
Custom2 Date
Custom1 Date
Custom parameter
Support custom
Position
X: 0
Y: 0
W: 188
H: 460
Default
Custom1
Available groups
Custom1
Custom2

4.5.3 drawing unit

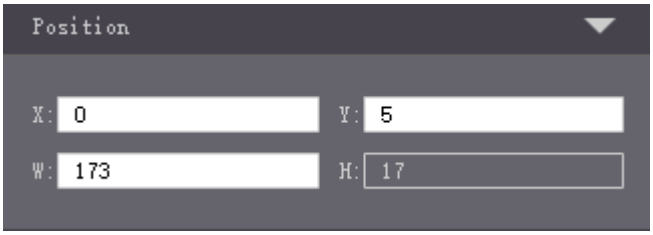
Text

Draw numbers and texts, such as the time, month, and step count. 



Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 188 X 460, the value in the attribute box cannot exceed 188 to 460.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.



Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specifies the type of data to be displayed in the watch system by text binding. Note that this parameter is restricted by the data type of the upper level. The supported data types of the text vary with the data type of the upper level.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For text, data in different data ranges can be entered based on different data types. For details, see the following table.

Data types supported by the watch text control are as follows:

Data Name	Value range	Description
Steps	[0-999999]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate
Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.
AQI	[0-500]	air pollution index
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times

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Date	[1-31]	Date
Yesterday Date	[1-31]	
Tomorrow's date	[1-31]	
Maximal heart	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate
Maximum temperature	[-32678- 32678]	Maximum temperature
Lowest temperature	[-32678- 32678]	Lowest temperature
pressures	[0-100]	pressures
critical low temperature	(-126, 126)	critical low temperature
critical high temperature	(-128, 128)	critical high temperature
Double time zone abbreviation text	NZDT, IDLE, NZST, AESST, ACSST, EAST, GST, SAT, WDT, JST, KST, MT, WST, CCT, JT, IT, BT, EETDST, CETDST, EET, FWT, MEST, BST, CET, FST, SWT, WETDST, GMT, WET, WAT, NDT, ADT, NFT, AST, EDT, CDT, EST, CST, MDT, MST, PDT, PST, HDT, AHST, NT, IDLW,	The watch supports the following dual time zone text fonts: 4. obotoCondensed_Regular_26_4 5. Roboto_Medium_22_4 6. Oswald_Medium_26_4
Zhou Wen	Sunday (SUN), Monday (MON), Tuesday (TUE), Wednesday (WED), Thursday (THU), Friday (FRI), and Saturday (SAT)	
Month Text	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	
Morning and afternoon text	AM, PM	
Month Text	1-12	
Month Date Text		Month Date Text
Week Month Date Text		Week Month Date Text

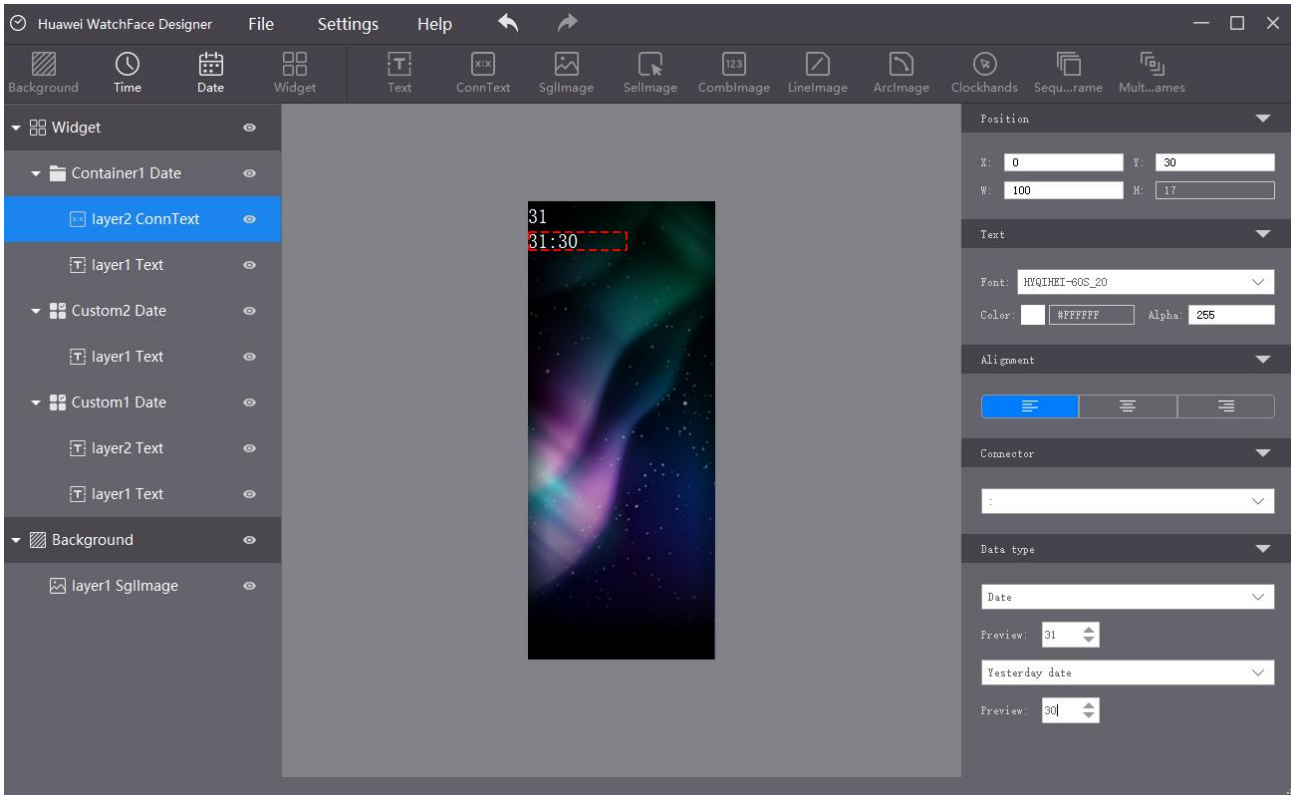
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Dual time zone time text	Example: NZDT 10:12	The tool does not support preview data adjustment.
maximum oxygen uptake	0-80	maximum oxygen uptake
Distance text	0.00 km (default unit: km)	The tool does not support preview data adjustment.
Sleep Text	0h0m (sleep time)	The tool does not support preview data adjustment.

Connection Text

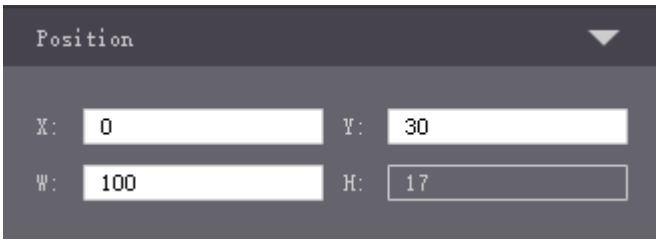


Connect text controls display two varying text using a connector based on the actual value of the bound data.



Description of operations in the attribute area:

1) X, Y, W, H:X, Y indicates the coordinates of the upper left corner of the text box in the watch face coordinate system. W indicates the width of the text box, and H indicates the distance between Y and the text baseline (H is automatically calculated based on the font size).



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X, Y, and W cannot exceed 0 to DPI. For example, if you select 188 X 460, the value in the attribute box cannot exceed 188 to 460.

2) Text: Select a text font from the drop-down list box. Color: Select a text color from the color picker and enter a transparency value in the text box.

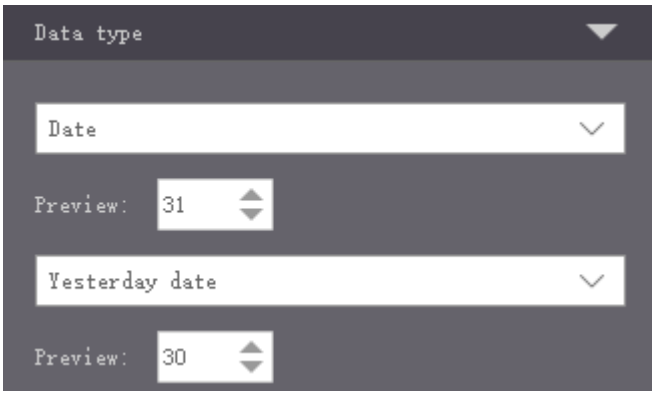


Note: Click the color block button to display the color selector to select a color. The value ranges from 0 to 255.

3) Align: Align text. The options are Left, Center, and Right.



4) Data Type: Specify which type of data will be displayed on the watch system by the two text bindings that connect the text.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the connection text control, data of different data ranges can be entered based on the data type. For details, see the following table.

Data types supported by the connection text control on the watch are defined as follows:

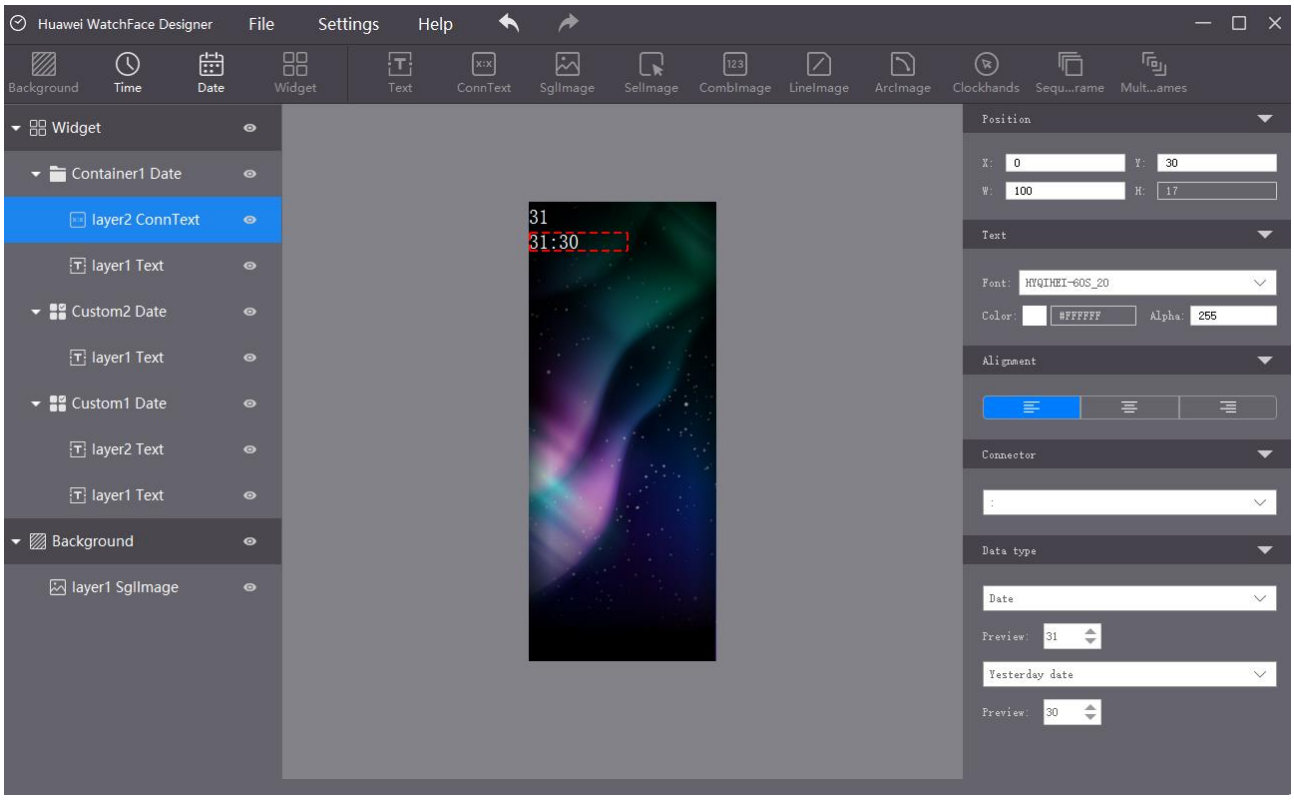
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Data Name	Value range	Description
Steps	[0-999999]	Steps
calorie	[0-65535]	calorie
heart rate	(0-255]	heart rate
Medium-high intensity time	[0-65535]	Medium-high intensity time
temperature	[-32678- 32678]	Temperature, which automatically switches between degrees Celsius and Fahrenheit.
AQI	[0-500]	air pollution index
Electricity	[0-100]	Electricity
Standing times	(0-255]	Standing times
Date	[1-31]	Date
Maximum heart rate	(0-255]	Maximum heart rate
Minimum heart rate	(0-255]	Minimum heart rate
Maximum temperature	[-32678- 32678]	Maximum temperature
Lowest temperature	[-32678- 32678]	Lowest temperature
pressures	[0-100]	pressures
critical low temperature	(-126, 126)	critical low temperature
critical high temperature	(-128, 128)	critical high temperature
Date	(1-31)	Date
Monthly data	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC	month
Yesterday Date	(1-31)	Yesterday Date
Tomorrow's date	(1-31)	Tomorrow's date

The second text also supports no data type:

Data Name	Value range	Description
No data.	NA	Achieve the XX effect by setting the second text data type to no data

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5) Connector: Separator between two texts.



The value contains the following connection symbols:

Colon:

"-"

Slash '/'

Backslash (\)

Click.

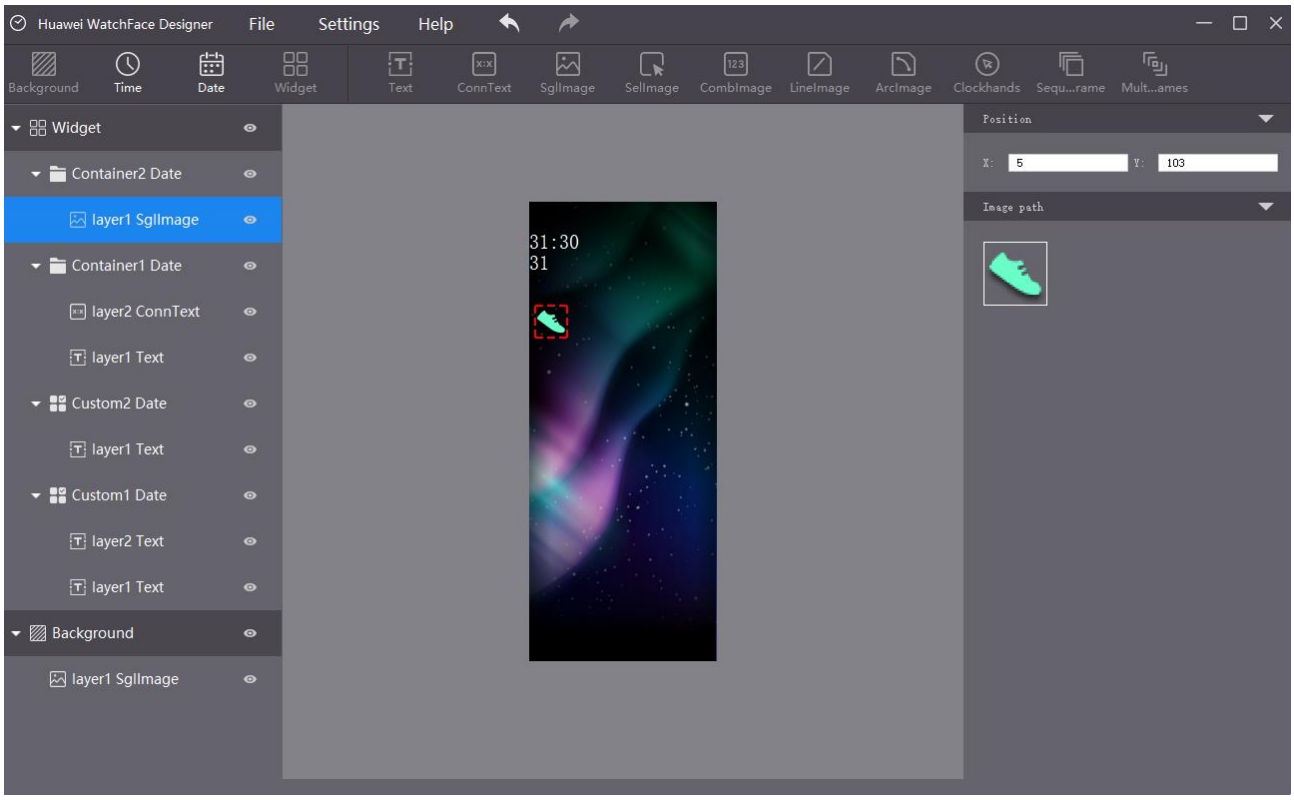
percent sign '%'

Space ""

monograph



A single image is used to draw a static image, such as the static background image and step count icon.



Description of operations in the attribute area:

1) Image path: Click the plus sign (+) to select an image.



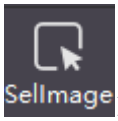
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 188 x 460 watch face, the picture width and height cannot be greater than 188 x 460px.

2) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

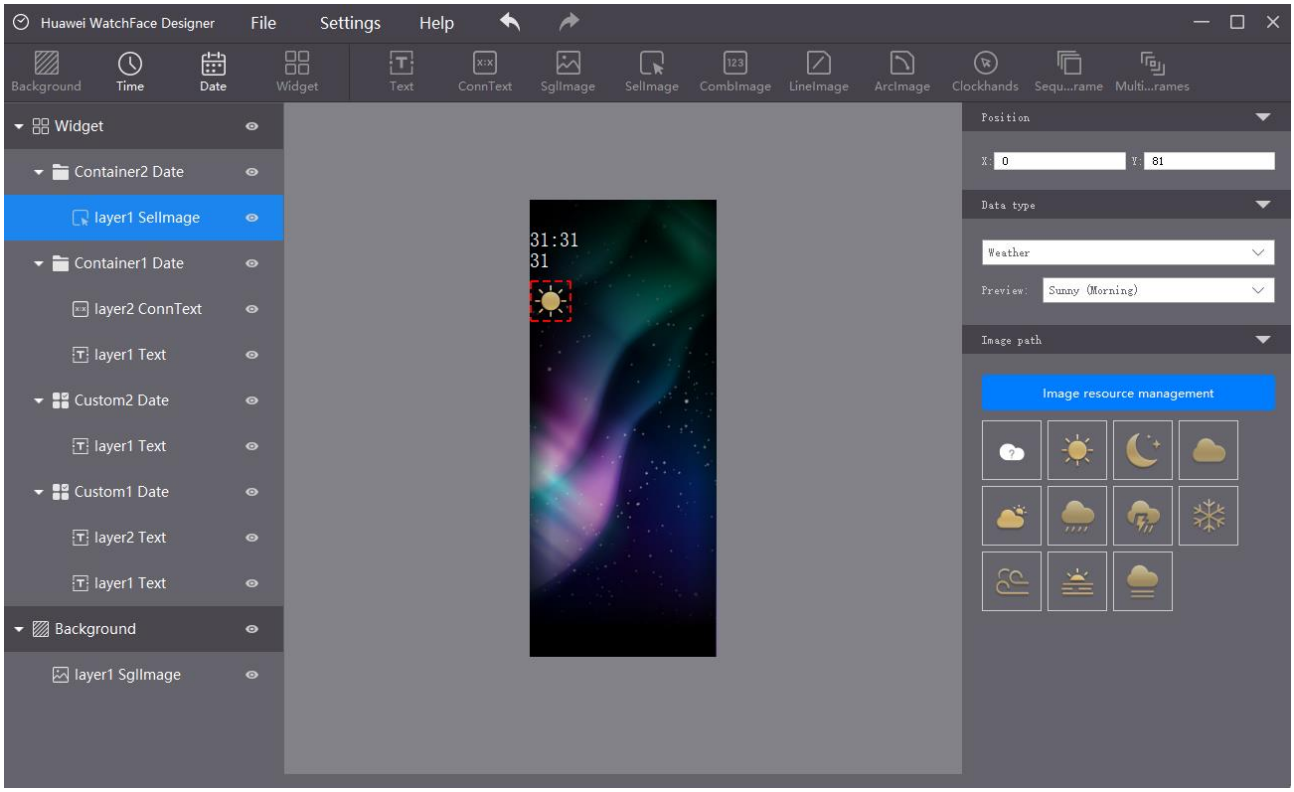


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

Selecting a picture

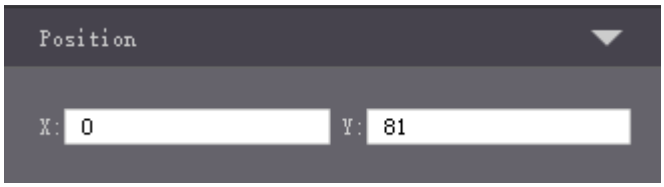


Displays different images based on the actual value of the bound data, such as weather, week, and date.



Description of operations in the attribute area:

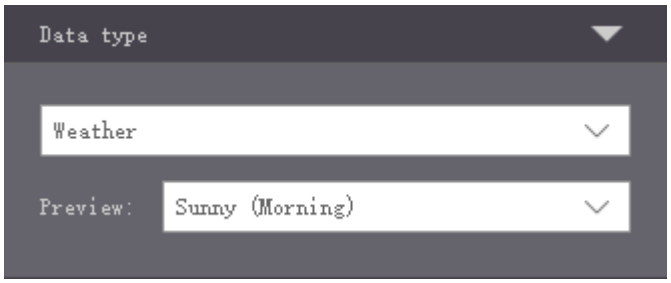
1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

2) Data Type: Specifies the type of data displayed on the watch system by the image selection control binding.

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Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the image selection control, different data types can be selected to display different images.

Data types supported by the image selection control on the watch are as follows:

Data Name	Value range	Number of images	Description
Morning Afternoon	[0-2]	3	0:am 1:pm 2: A transparent blank image (required in 1.0 and 2.0)
month		12	1: january; 2: february; 3: march; 4: april; 5: may; 6: june; 7: july; 8: august; 9: septembe; 10: octo October 11: november 12: december
Weekly data		7	1: Monday 2: Tuesday Tuesday 3: Wednesday Wednesday 4: Thursday Thursday 5: Friday Friday 6: Saturday 7: Sunday Sunday

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Weather Type	[0-10]	11	0: unknown: weather unknown due to network disconnection; 1: sunny_day; 2: sunny_night; 3: overcast; 4: cloudy; 5: rain; 6: thunder; 7:s Now snow 8:dust_storm; sandstorm 9: hazy; sunny day; 10: forg; cloudy day
Battery Enumeration	[0-10]	11	0 to 10: 0%, 10%, 20%, 30...100%
High-order bits of the clock	[0-2]	3	Indicates the ten-digit value of the hour. The value can be 0 or 2 in the 24-hour or 12-hour format.
Clock low bit	[0-9]	10	Indicates the ten-digit value of the hour. The value can be in the 24-hour or 12-hour format. The value ranges from 0 to 9.
Minute High Bit	[0-5]	6	Ten-digit number of minutes.
Minute Low Bit	[0-9]	10	minute number
Second High Bit	[0-5]	6	Ten-digit number of seconds
Second low	[0-9]	10	Number of bits in seconds
Date High Bit	[0-3]	4	Ten-digit number of a date.
Date Low	[0-9]	10	Number of digits of a date.
lunar month		12	1: first month 2: February 3: March 4: April 5: May 6: June 7: July 8: August 9: September 10: October 11: Winter 12: Lama
Yesterday's Date High	[0-3]	4	Ten digits of yesterday's date
Yesterday's Date Low	[0-9]	10	Single digit value of yesterday's date
Tomorrow's date high	[0-3]	4	Ten digits of tomorrow's date
Tomorrow's date low.	[0-9]	10	One-digit number of tomorrow's date
Lunar calendar date high		5	Ten-digit number of the date of the lunar calendar (early/ten/20/3/2)
Lunar Date Low		10	Lunar calendar date (10/1/2/3/4/5/6/7/8/9)
24 Top 12 of the 24		13	Small cold, big cold, spring, rain, stinging, spring equinox, Qingming, Gu rain, summer beginning, small full, busy seed, and summer solstice (the first picture is blank)
24 Mid-Term 12		13	Light heat, heavy heat, beginning of autumn, summer heat, white dew, autumn equinox, cold dew, frost

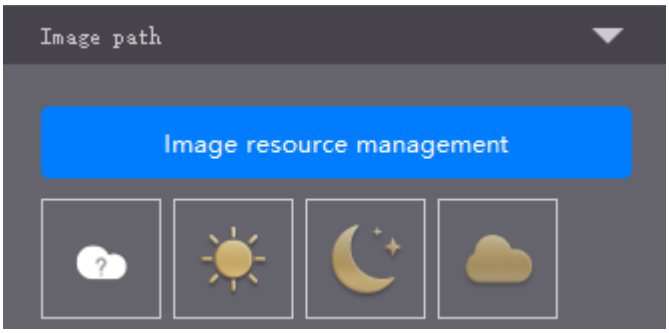
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			fall, beginning of winter, light snow, heavy snow, winter solstice (the first picture is blank)
Which of the first 12 solar terms is before the lunar calendar?		13	First 12 Terms Before Which Term (ex: Little Cold Big Cold) (The first picture is blank)
Which of the last 12 solar terms is before the lunar calendar?		13	Last 12 Terms Before Which Term (ex: between the beginning of autumn) (the first picture is a blank picture)
12 hours		12	Zi, U, Yin, Miao, Chen, Si, Wu, Wei, Shen, You, Xu, Hai
Upper bits of the dual time zone clock	[0-2]	3	Ten-digit value of the dual-time zone clock
Lower bits of the dual time zone clock	[0-9]	10	Single-bit value of the dual time zone clock
Dual Time Zone Morning/Afternoon		3	0:am 1:pm 2: A transparent blank image (required in 1.0 and 2.0)
High-order bits of the minute in dual time zones		6	Ten-digit number of minutes in dual time zones.
Minute Low Bits of Dual Time Zone		10	Single-digit number of minutes in dual time zones
Temperature Type	[0-1]	2	0 degrees Celsius, 1 degrees Fahrenheit
AQI Air Quality Class	[0-5]		Air quality level for sixth gear
heart rate interval	[0-5]	5	Five-level heart rate range. (If the value is less than 96 or 255, the range is invalid and is displayed as 0 as a blank image.)

Note: 24 Images added to solar-related controls cannot be the same (including blank images).

3) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.

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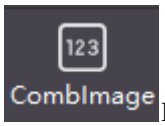


Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 188 x 460 watch face, the picture width and height cannot be greater than 188 x 460px.

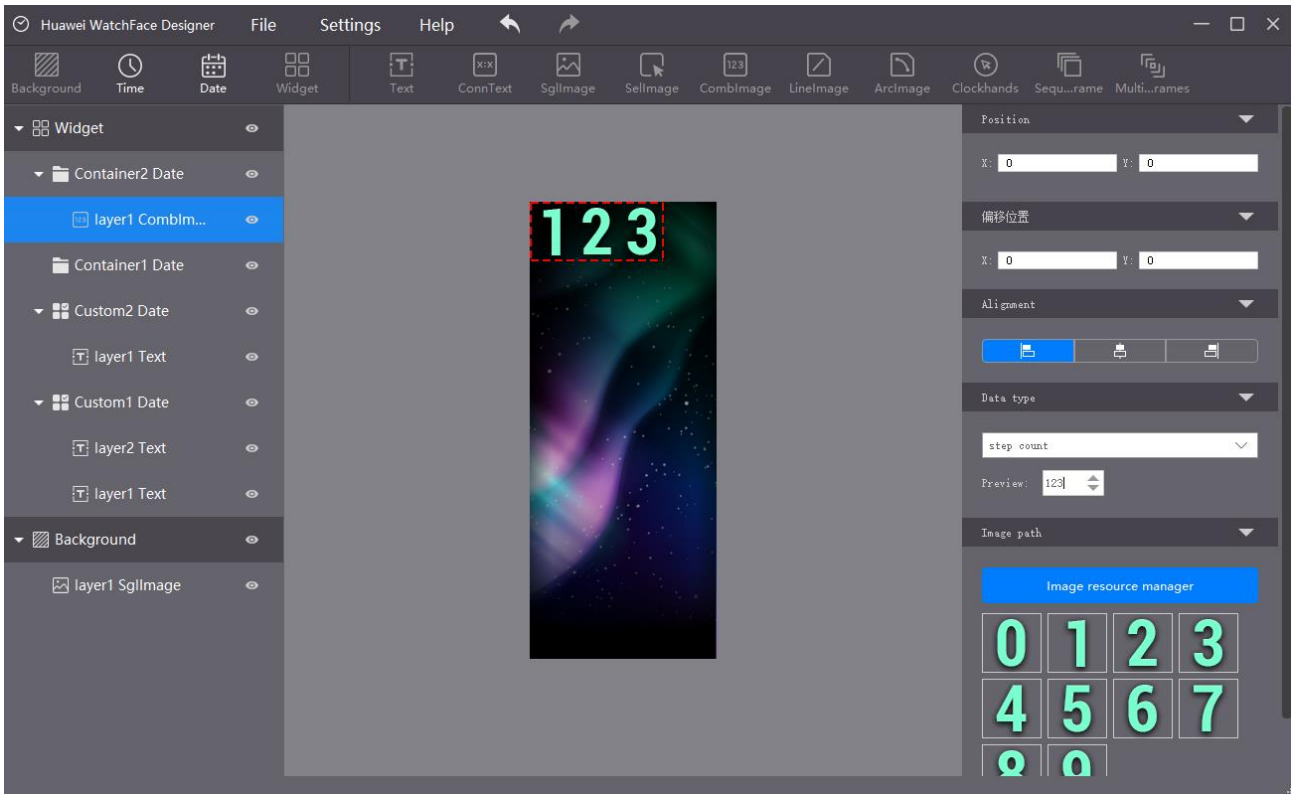
Note:

When Data Type is set to Morning Afternoon or Double Time Zone Morning, Afternoon, the first two images are morning and afternoon in sequence. A transparent blank image must be added to the third image so that the image is not displayed in the 24-hour format.

combination chart

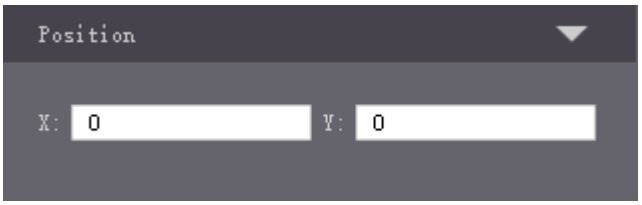


Draw a combination of 10 digits (0 to 9) to draw a number, such as the number of steps.



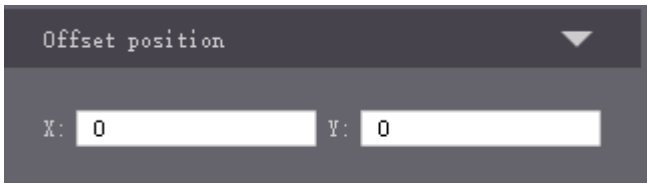
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.

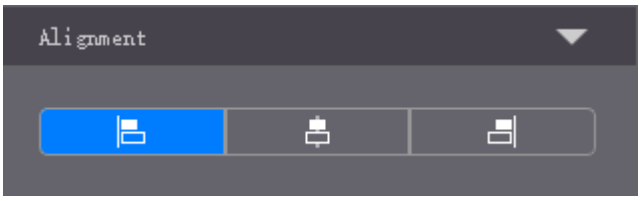


Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

2) Offset position: x indicates the horizontal offset, and y indicates the vertical offset. (When x and y are not 0, the offset effect can be previewed in the preview area.)



3) Alignment: Three alignment modes are supported: left, center, and right.



Note: Alignment rules

d. Align left: Align with the x axis in the upper left corner of the first image on the left.

e. Align: Align with the center point of the most combined chart.

f. Right-align: Align the image with the x axis in the upper right corner of the first image on the right.

4) Data Type: Specifies the type of data displayed on the watch system by the image selection control binding.



Preview Data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the image selection control, different data types can be selected to display different images.

Data types supported by the combination chart control on the watch are defined as follows:

Data Name	Value range	Number of images	Description

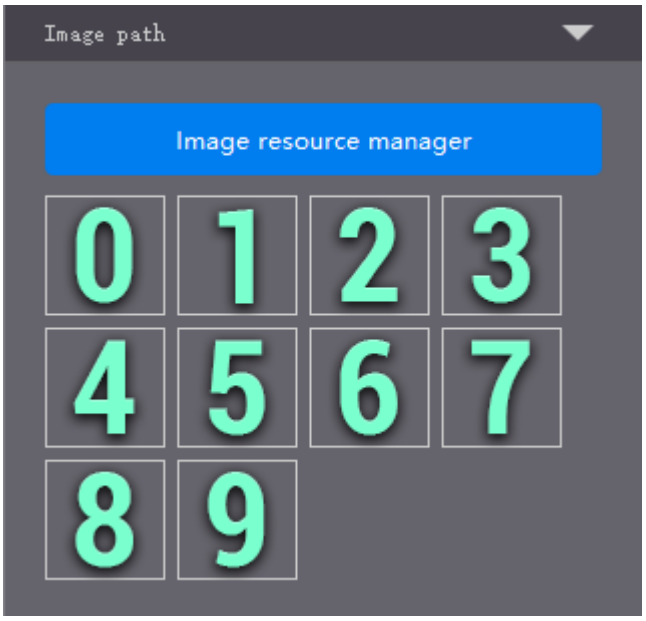
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Steps	[0-999999]	10 (0-9)	Steps
calorie	[0-65535]	10 (0-9)	calorie
heart rate	(0-255]	11 (0-9, --)	heart rate
Medium-high intensity time	[0-65535]	10 (0-9)	Medium-high intensity time
AQI	[0-500]	11 (0-9, --)	air pollution index
barometric pressure	[0-65535]	11 (0-9, --)	barometric pressure
Electricity	[0-100]	10 (0-9)	Electricity
Standing times	(0-255]	10 (0-9)	Standing times
temperature	[-32678-32678]	12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
maximum temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
Lowest temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
critical high temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the temperature is below zero.
critical low temperature		12 (0-9, --, -)	-- After 0 to 9, the hyphen (-) is added at the end. This parameter is displayed when the

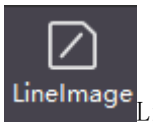
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			temperature is below zero.
Date	[1-31]	10 (0-9)	Date
Yesterday Date	[1-31]	10 (0-9)	
Tomorrow's date	[1-31]	10 (0-9)	
Monthly data	[1-12]	10 (0-9)	

5) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.

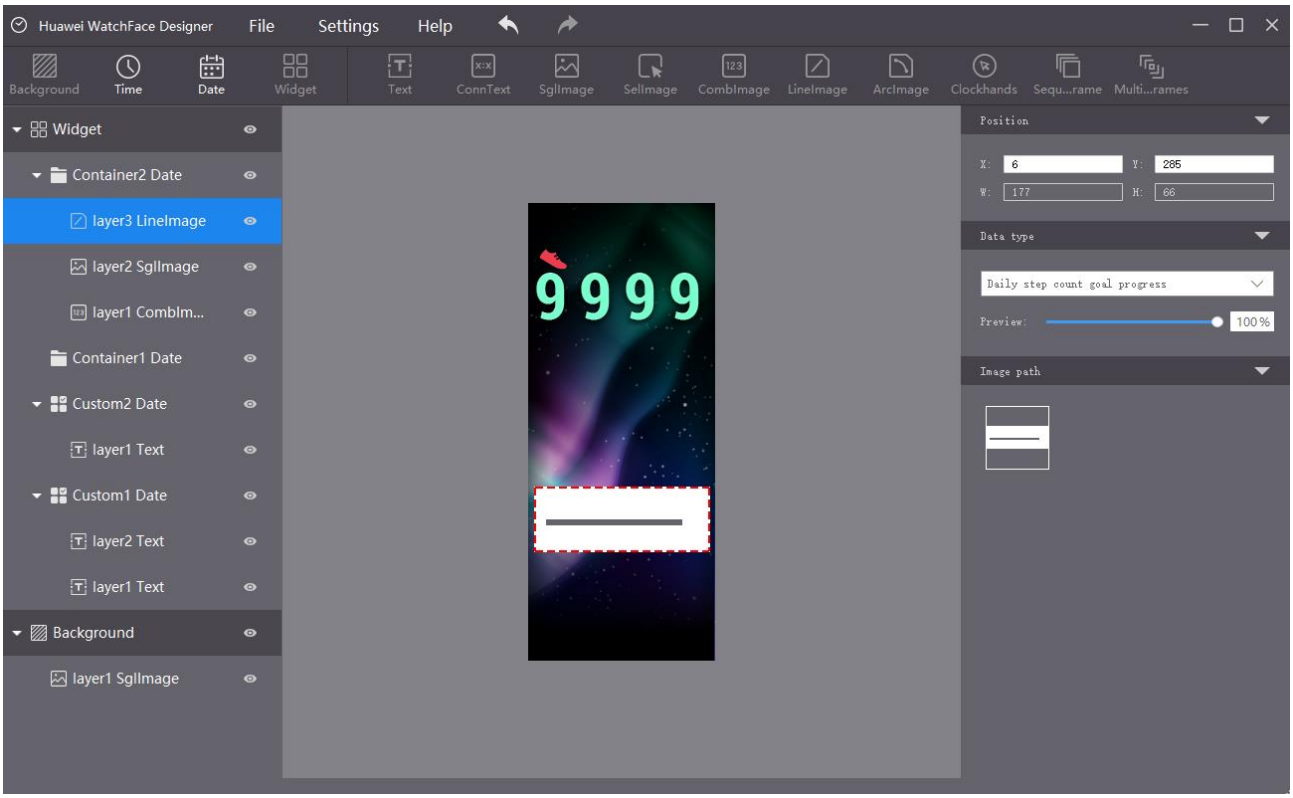


Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 188 x 460 watch face, the picture width and height cannot be greater than 188 x 460px.



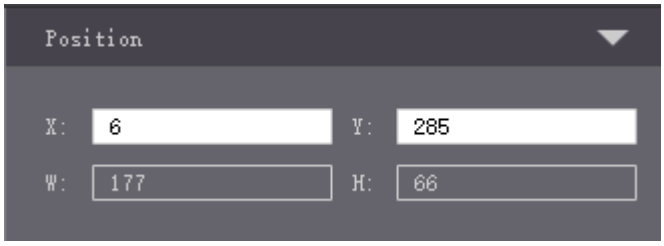
Line chart: Draw a progress bar, for example, step completion. Only the horizontal progress bar from left to right is supported.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

2) Data Type: Specifies the type of data displayed on the watch system by the linear progress bar binding.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

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Data types supported by the line-shaped progress bar control on the watch are as follows:

Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.
heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.

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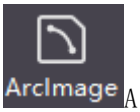
air index ratio	[00%-100%]	100% at 500, aqi/500
pressure index	[00%-100%]	(pressure-300) /800
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

3) Image path: Click the + icon to select a straight-line progress bar image.



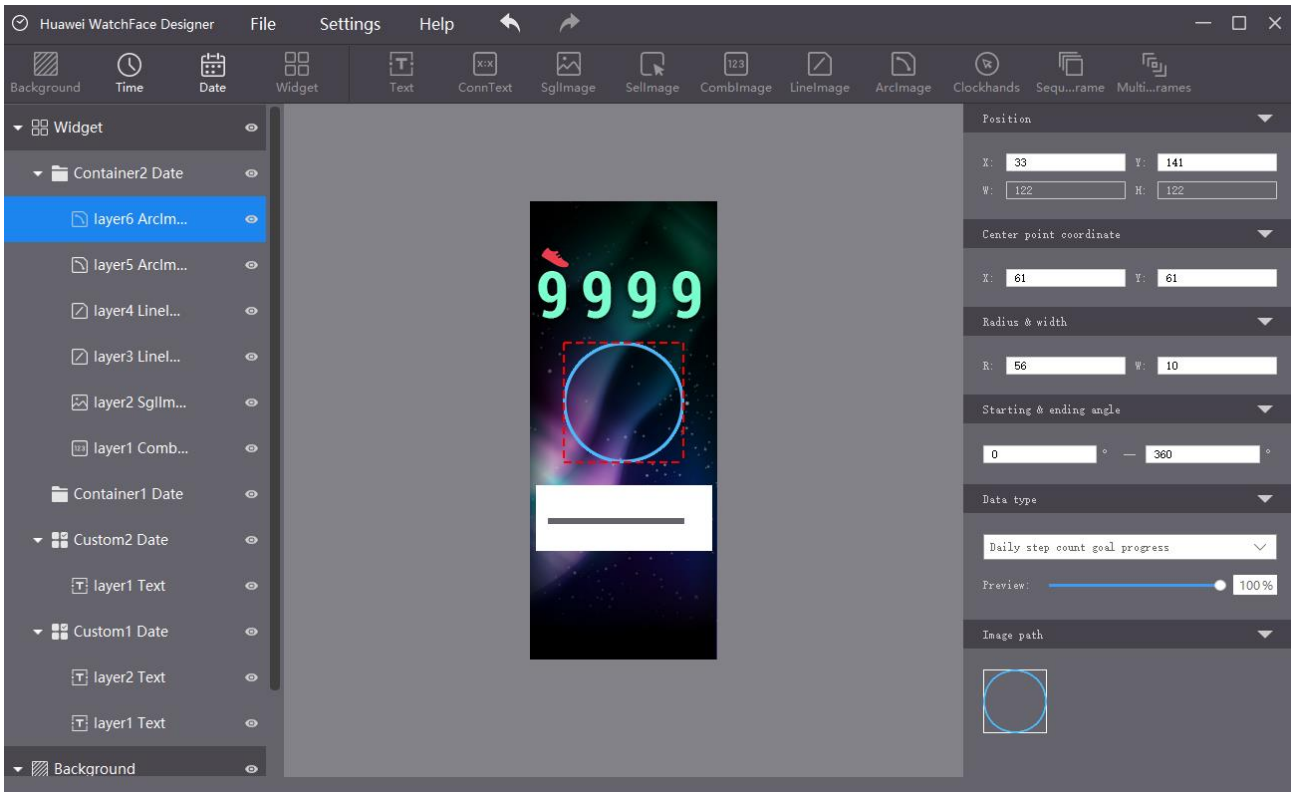
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 188 x 460 watch face, the picture width and height cannot be greater than 188 x 460px.

arc chart



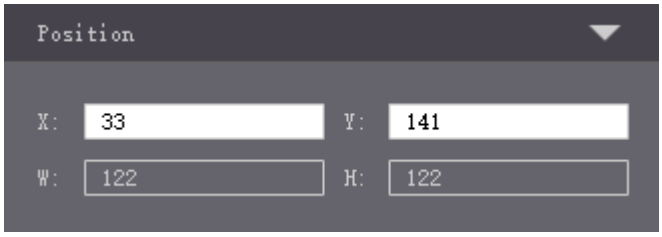
A curve chart. You can draw a curved progress bar, such as the power percentage and step completion degree.

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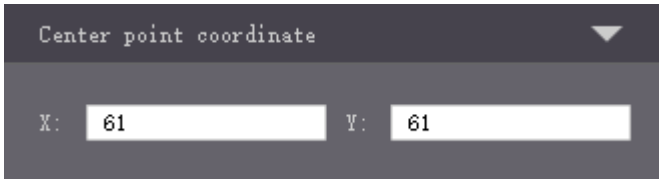
Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188 x 460 watch face, the width and height of the image cannot be greater than 188 x 460px.

2) X and Y: coordinate of the center of the round progress bar in the image coordinate system.



Note: The origin (0, 0) of the image coordinate system is the upper left corner of the image. It is recommended that the center coordinate of the circle be the center point of the image. For example, if the image size is 100 x 100, the recommended center coordinate is (50, 50).

3) Radius and Width R. W:R indicates the radius of the circle progress bar (distance between the center of the circle and the middle line of the progress bar); W indicates the width of the progress bar.

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Note: It is recommended that the value of R be less than or equal to (image side length – W)/2. It is recommended that the value of W be less than the value of R.

4) Start and End Angle: indicates the angle range of the round progress bar with the center as the center. The start angle is the start point of the progress bar, and the end angle is the end point of the progress bar.



Note: The angle value cannot exceed 0-360.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

5) Data Type: Specifies the type of data displayed on the watch system by the circular progress bar binding.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For the round progress bar control, 0% to 100% correspond to the range of the start angle to the end angle.

The following table lists the data types supported by an arc chart on the watch.

Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.

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heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.
air index ratio	[00%-100%]	100% at 500, aqi/500
pressure index	[00%-100%]	(pressure-300) /800
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

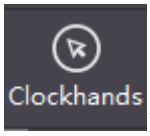
6) Image path: Click the + icon to select the background texture image of the round progress bar.

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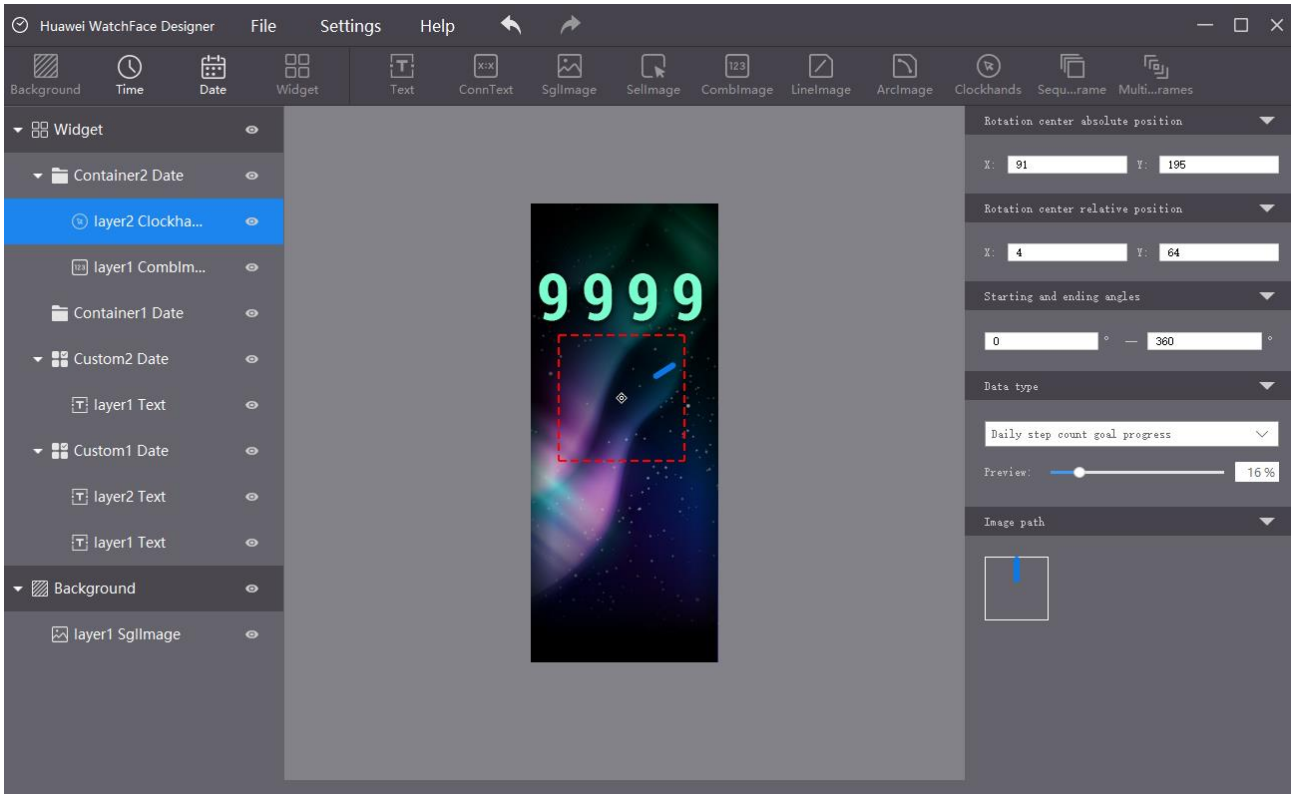


Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 188 x 460 watch face, the picture width and height cannot be greater than 188 x 460px.

pointers



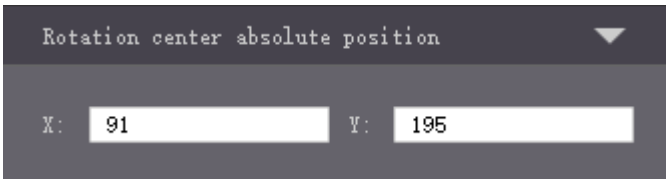
Draw pointers, such as hour, minute, and second. For example, the power percentage can also be used as a pointer effect.



Description of operations in the attribute area:

1) Absolute position of the rotation center X,Y: coordinates of the rotation center of the pointer image in the watch face coordinate system. For example, the pointer control generally rotates based on the center of the watch face. For example, a 188 X 460 watch face is used as an example, the value of X and Y is (94, 230).

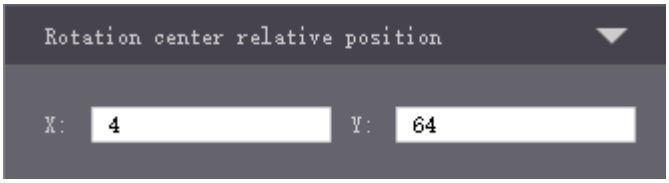
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Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

Note: The rotation center point is the point around which the pointer picture rotates.

2) Relative positions X and Y of the rotation center: coordinates of the rotation center of the pointer picture in the pointer picture coordinate system. For example, the sample pointer picture rotates by using the position (14, 280) of the picture coordinate system as the rotation center.



Note: The origin (0, 0) of the coordinate system of the pointer image is the upper left corner of the pointer image. The values of X and Y cannot exceed the width and height of the picture. For example, if the size of the pointer picture is 50 x 300, the value of X cannot exceed 50 and the value of Y cannot exceed 300.

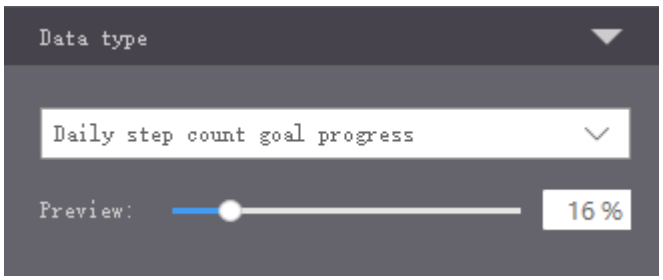
3) Start and End Angles: The angle range of the pointer picture to rotate around the rotation center. When the start angle is smaller than the end angle, the rotation is performed clockwise. When the start angle is greater than the end angle, the rotation is performed counterclockwise.



Note: The angle value must be within the range of －360 to 360. The value can contain four decimal places.

Note: The difference between the start and end angles corresponds to 100% of the bound data.

4) Data Type: Specifies the type of data that the pointer binding displays for the watch system.



Preview data: Simulates watch data. Designers can adjust the preview data to preview the preview effect in different data scenarios. For pointer controls, 0% – 100% correspond to the range of the start angle to the end angle.

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The data types supported by the watch pointer control are as follows:

Data Name	Value range	Description
Clock ratio 12	[00%-100%]	Percentage of the current clock to 12 hours (100%)
Clock ratio 24	[00%-100%]	Percentage of the current clock to the total number of 24 hours
Minute Ratio	[00%-100%]	Percentage of the current minute to 60 minutes.
Ratio of Seconds	[00%-100%]	Percentage of the current second to 60 seconds.
Date Ratio	[00%-100%]	Percentage of current logs to 31 days (100%)
Week Rate	[00%-100%]	Percentage of the current week to the seven days.
heart rate ratio	[00%-100%]	Percentage of the current actual heart rate to 255. The maximum heart rate is 255.
Calorie Ratio	[00%-100%]	The calorie target converted from the step count target obtained from the app is 100%. The current calorie value is the percentage of the current calorie value to the target value. If the current calorie value exceeds 100%, 100% is regarded as the calorie target.
Standing Times Ratio	[00%-100%]	The percentage of the current standing times to the standing times target 12 is 100%. If the current standing times exceeds 100%, 100% is considered.
Medium-to-high intensity time ratio	[00%-100%]	The percentage of the current medium- and high-intensity target time to the medium- and high-intensity target is 100%. If the current medium- and high-intensity target time exceeds 100%, the percentage is 100%.
Steps Target Achievement	[00%-100%]	Percentage of the step quantity obtained from the app to the step quantity target. If the step quantity exceeds 100%, 100% is used.
Battery Ratio	[00%-100%]	Percentage of the actual battery level to 100 when the battery level is 100
Clock ratio of two time zones: 12	[00%-100%]	Percentage of the current dual-time zone clock to 12 hours (12 hours)
Clock ratio of two time zones: 24	[00%-100%]	Percentage of the current dual-time zone clock to 24 hours.

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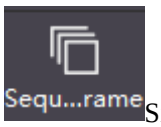
air index ratio	[00%-100%]	100% at 500, aqi/500
pressure index	[00%-100%]	(pressure-300) /800
Altitude Ratio	[00%-100%]	(Current Altitude - (-800))/(8848-(-800))
Minute Ratio of Dual Time Zones	[00%-100%]	minute/60
barometric index ratio	[00%-100%]	The maximum pressure is 1100, the minimum pressure is 300, and the percentage of the current pressure is as follows:
maximum oxygen uptake ratio	[00%-100%]	The maximum oxygen uptake is 80 as 100%, and the current maximum oxygen uptake data is the percentage of the maximum oxygen uptake.

5) Image path: Click the plus sign (+) to select a pointer image.



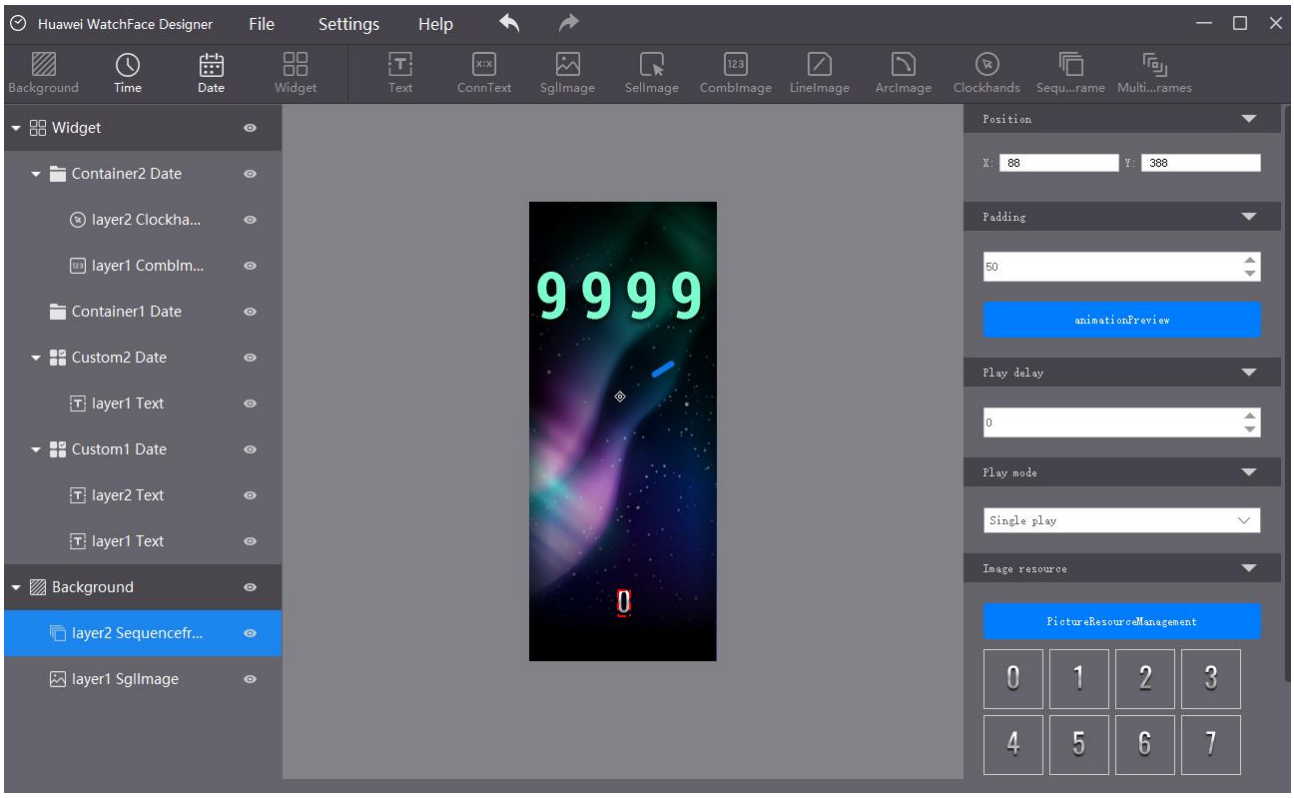
Note: The picture size cannot exceed the DPI size of the selected watch face. For example, if you select 390 X 390 watch face, the picture width and height cannot be greater than 390 px.

single sequence frame



Single-group sequence frame controls are typically used to draw dynamic background images.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

2) Frame interval: interval for switching sequence frames, in milliseconds. 50 ms indicates 20 frames (50 to 80). You can click the animation to preview the playback speed.

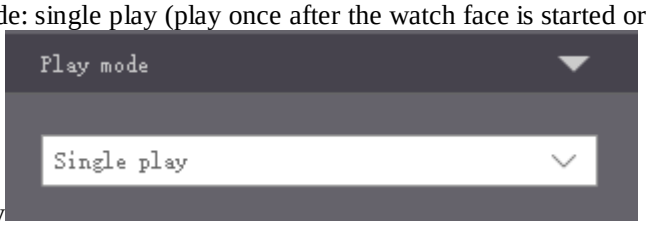


3) Playback delay: delay for starting the playback, in ms. For example, if the playback starts after the screen is on for 200 ms, this parameter can also be used to set the pause duration between two cycles in loop mode. The default value is 0, and the value can be changed before the interval ranges from 0 to 200.

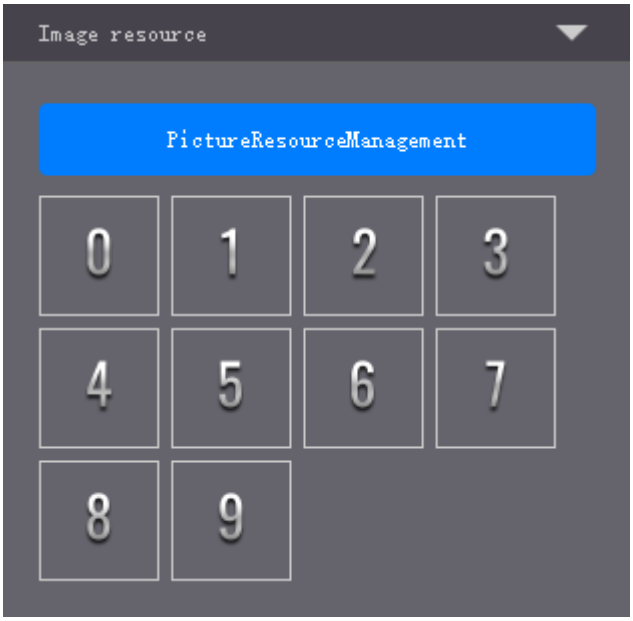
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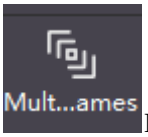
4) Play mode: sequence frame play mode: single play (play once after the watch face is started or the screen is turned on) or cyclically



5) Image resource: Click the image resource management icon to select an image. Images must be added in sequence. The selected images must be of the same resolution (for BMP images, only 16-bit or 24-bit depth is supported).

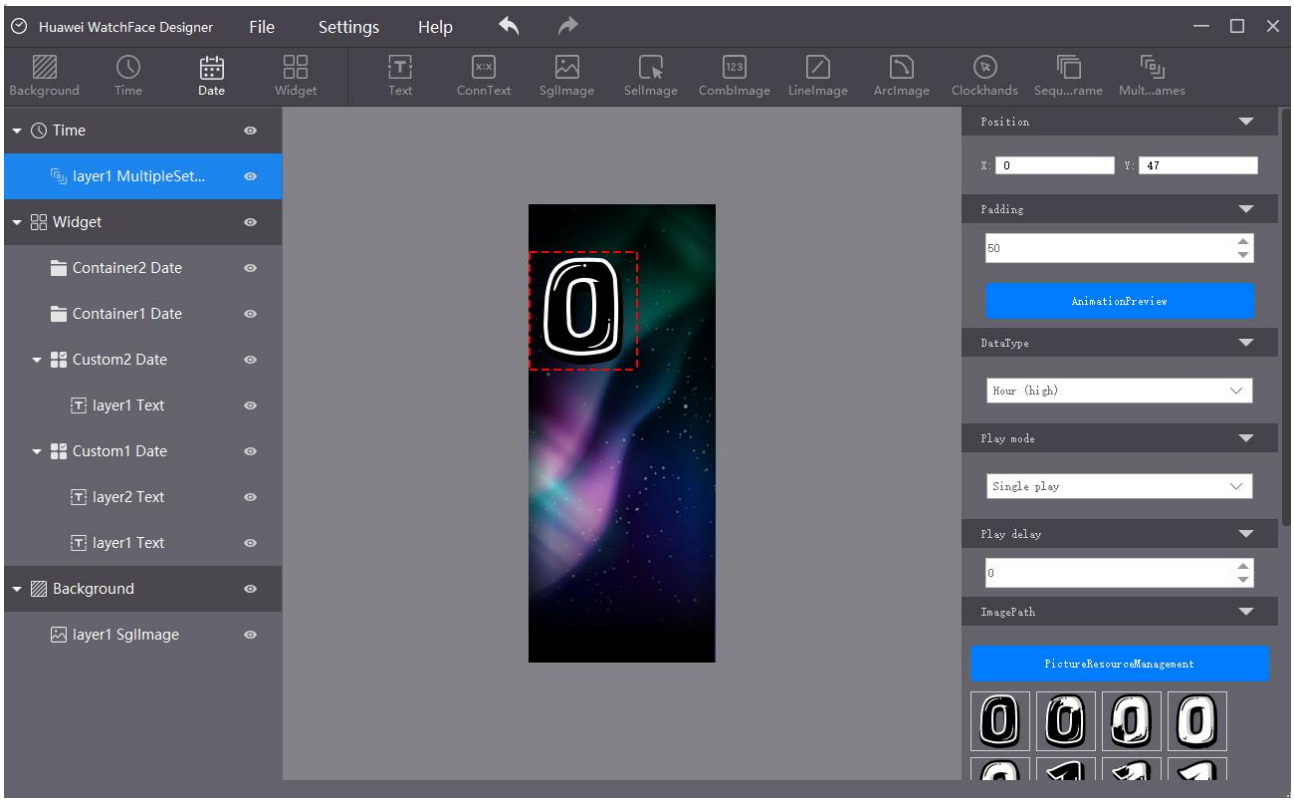


Multiple groups of sequence frames



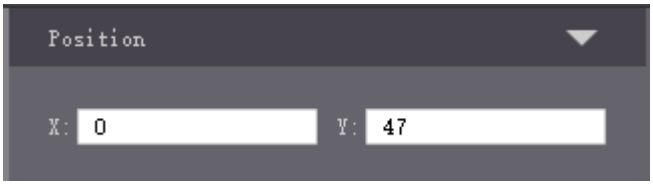
Multi-group sequence frame controls are generally used to draw the dynamic effect of each data type under the time element.

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Description of operations in the attribute area:

1) Position X and Y: coordinate of the upper left corner of the image in the watch face coordinate system.



Note: The origin (0, 0) of the watch face coordinate system is the upper left corner of the circumscribed square of the watch face. The values of X and Y cannot exceed 0 to DPI. For example, if you select 188x460 watch face, the value of this field cannot exceed 188 to 460.

2) Frame interval: interval for switching sequence frames, in milliseconds. 50 ms indicates 20 frames (50 to 80). You can click the animation to preview the playback speed.



3) Data Type: Specifies the type of data displayed on the watch system by multiple sequence frame control bindings.



Data types supported by the image selection control on the watch are as follows:

Data Name	Value range	Number of images	Description
Minute Low Bit	[0-9]	10x2	The value is a 10-digit number ranging from 0 to 9. The value ranges from 2 to 5 for each digit.
Minute High Bit	[0-5]	6x2	The value ranges from 0 to 5. The value ranges from 2 to 5.
Clock low bit	[0-9]	10x2	Hour. The value ranges from 0 to 9. The value ranges from 2 to 5.
High-order bits of the clock	[0-2]	3x2	Ten-digit number of hour. The value ranges from 0 to 2. The value ranges from 2 to 5.

Note: The number of images to be added for each numeric element must be the same. For example, if you select the least significant bit of minute, if there are three images for any of the digits 0 to 5, the other four digits must also be three images.

4) Play mode: single play (play once after the watch face is started or the screen is turned on) or cyclic play

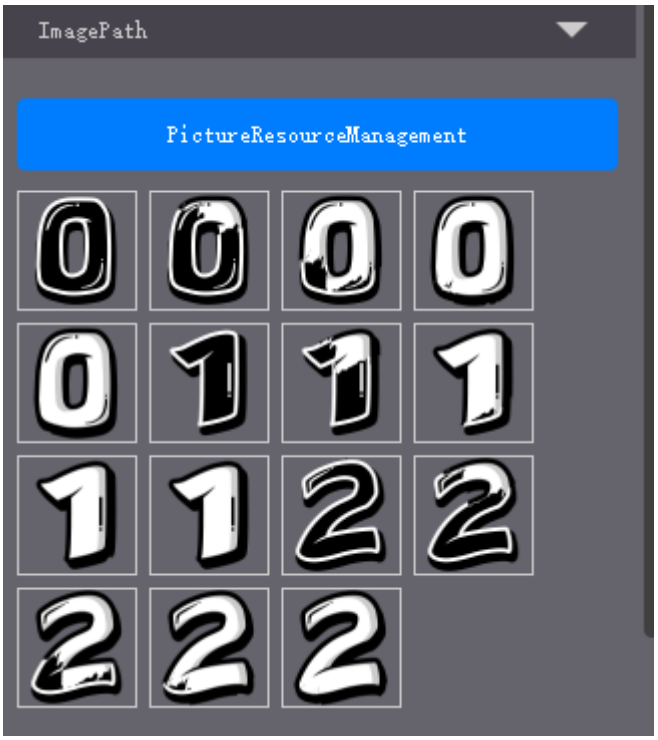


5) Playback delay: delay for starting the playback, in ms. For example, if the playback starts after the screen is on for 200 ms, this parameter can also be used to set the pause duration between two cycles in loop mode. The default value is 0, and the value can be changed before the interval ranges from 0 to 200.



6) Image path: Click the image resource management icon to select an image. Images must be added in sequence. Add images strictly based on the description and required number and sequence of images in the data type definition.

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Note: The number of images to be added for each numeric element must be the same. For example, if you select the least significant bit of minute, if there are three images for any of the digits 0 to 5, the other four digits must also be three images.

5 Recommended Procedures for Making a Watch Face

1. Designers use professional graphics design tools in the industry to design the style, size, position, and layer sequence of each watch face control element, and prepare pictures and effect drawings for each control. For details about the picture requirements, see section 3.2.1 and chapter 4.

2. Use this software to create a watch face resource package.

1. Start the software and create a watch face project. For details, see section 3.2.1.

2. Add controls based on the design and edit the attributes of each control. For details, see chapter 4.

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3. Export the watch face resource package. For details, see section 3.2.5.

3. Test the watch face resource package.

Copy the exported watch face resource package (.hwt file) to your Huawei phone, connect your phone to your watch using Huawei Health, and import the watch face resource package to your watch. For details, see the Huawei Health software description.

4. Upload the watch face resource package to the watch face market. For details, see the HUAWEI Developer.

6 FAQ

6.1 Export

6.1.1 Detailed Export Process

After you click the export button, the TemleteWatch.exe, TemleteWatch.exe parameter is the directory where the project file is stored (that is, the input file of the emleteWatch.exe file).

The TempleteWatch will do the following:

1. Invoke GuiPack_1.4.1.exe to convert the image to the binary file gui01.bin. During the conversion, the BitmapMapping.cpp, BitmapMapping.xml, and gui01.bin files are generated.

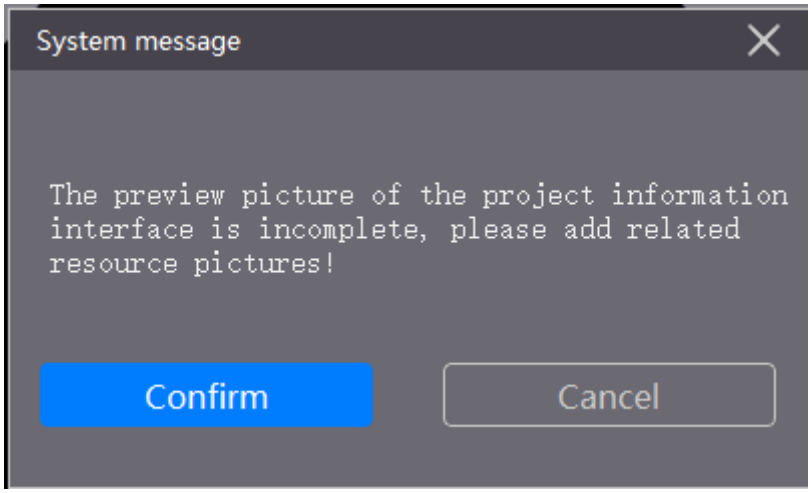
2. Parse the XML file to generate nanopb binary data, which describes all controls on the watch face.

3. Write the gui01.bin and nanopb data and header information into the com.huawei.watchface file.

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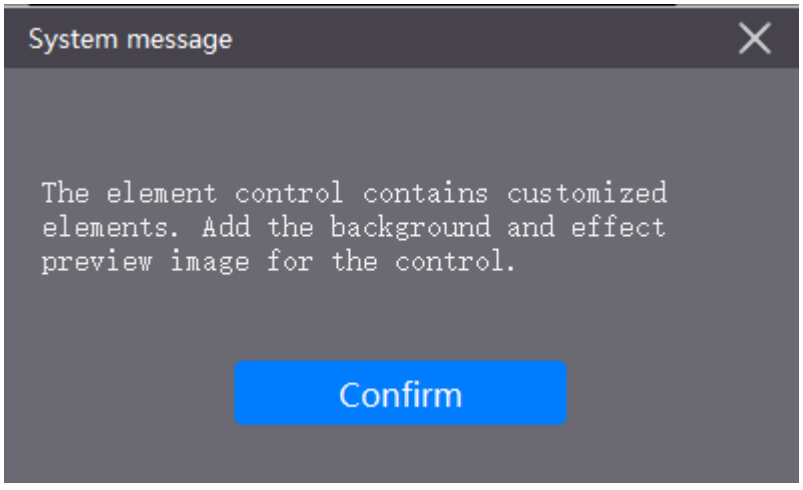
4. Compress the watchface (7z.dll and 7z.exe are used during the compression) to generate the hwt file.
5. The tool displays a message indicating that the export is complete.

6.1.2 The preview image on the project information page is incomplete.



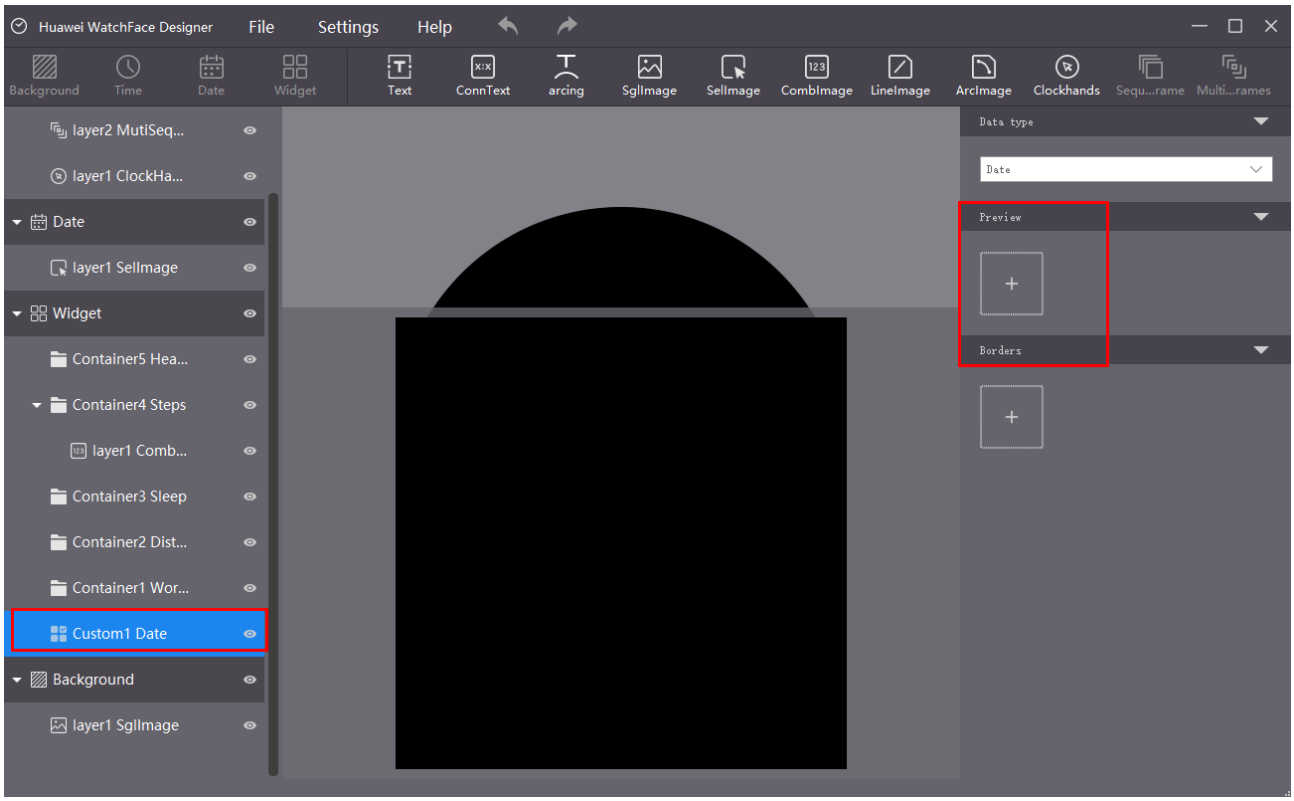
Choose File > Watch Face Info from the main menu to add the three images. Click Modify and export the images again.

6.1.3 The element control has customizations. Please add the background and preview images under the control at the same time.

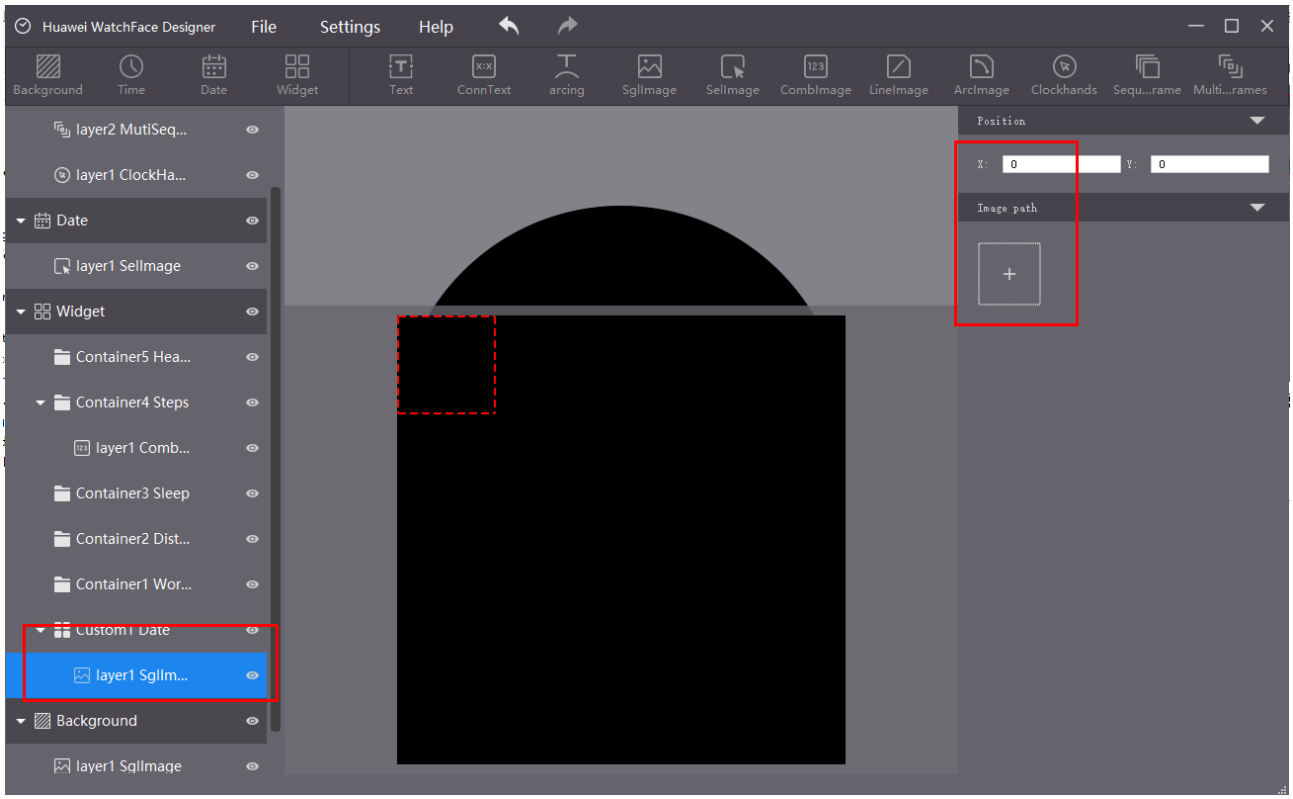


Find the customization and supplement the preview image.

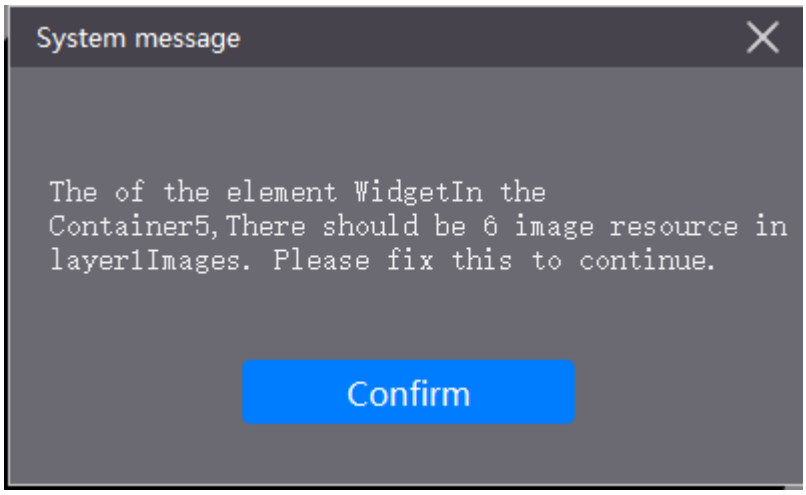
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Find the customization and supplement the background. Right-click the customization, click Add Single Image, and click the location of the image in the left box to add the background. Then try exporting the data.

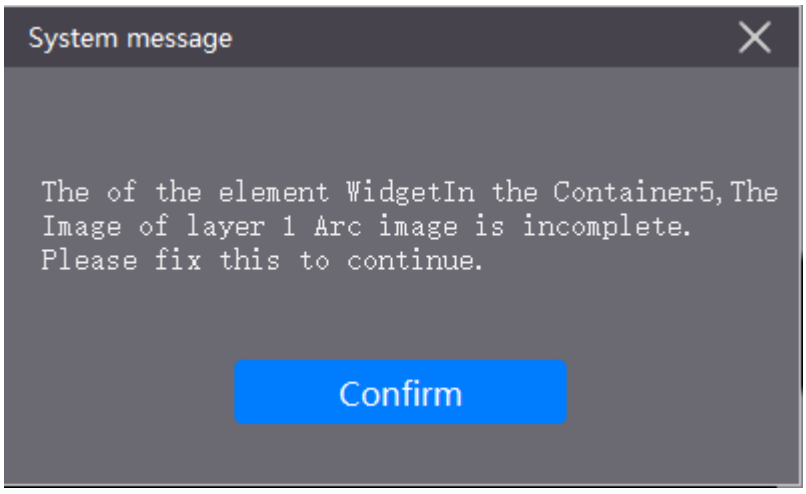


6.1.4 In the container/customized XX of the element control, the image resources of the selected/combined image of Layer XX must be XX. Please modify.



Find the selected image, add the corresponding number of images as prompted, and export the image again.

6.1.5 In the container/customized XX of the element control, the image resources of the LayerXX pointer, line chart, and arc chart are incomplete. Please modify.



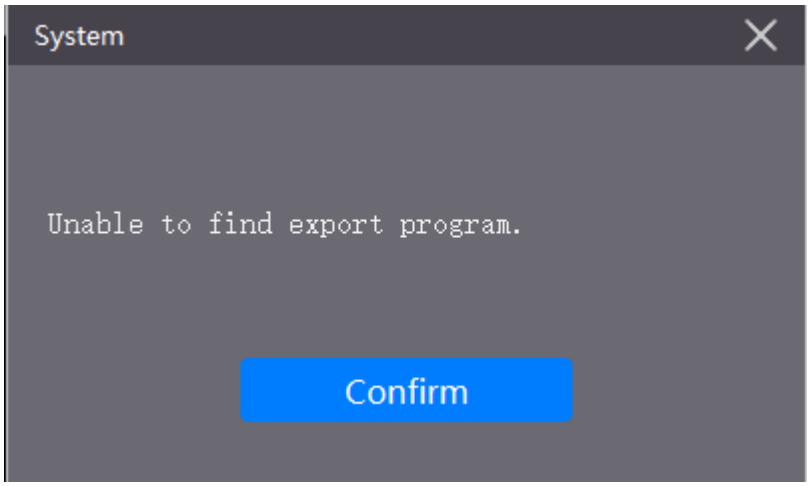
Locate the problem as prompted, add the corresponding image as required, and export the image again.

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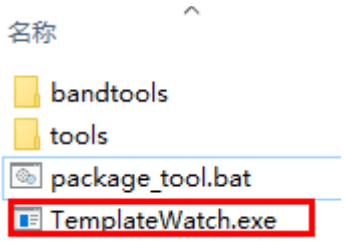
6.1.6 The resource package is too large. To avoid device running exceptions, reduce the number of controls and image size and try again.

Check whether the number of resources to be added is too large and control the number and size of resource images.

6.1.7 The export tool cannot be found.

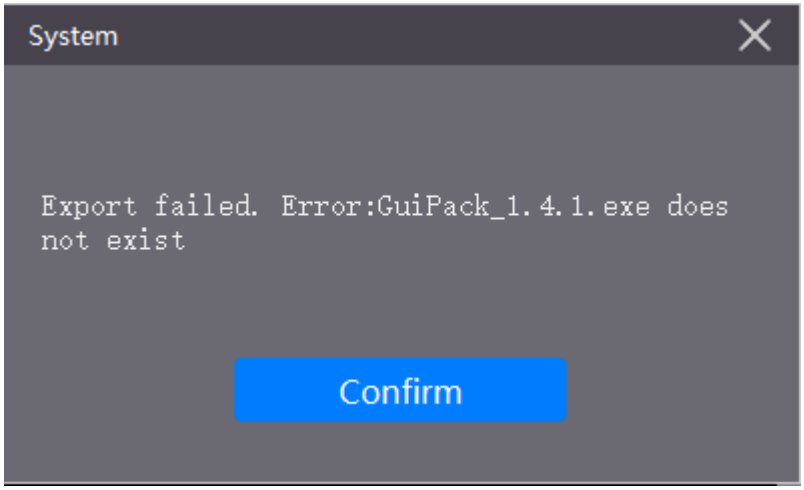


Check whether the watch face tool exists in the export directory, as shown in the following figure.

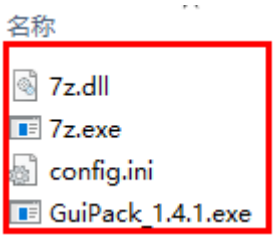


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6.1.8 Export failed. Error message: GuiPack_1.4.1.exe does not exist



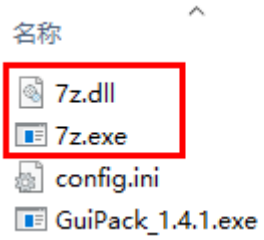
Check whether the tool exists in the /export/tools/ directory. Ensure that the tool exists and its name is the same as the displayed information, as shown in the following figure.



None of the preceding four files is required.

6.1.9 The export is successful. The [.bin] file is generated, but the [.hwt] file is not generated.

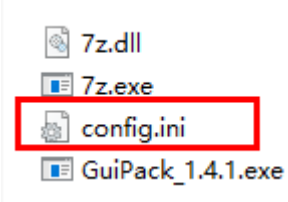
Check whether the 7z.exe and 7z.dll files in the /export/tools/ directory exist and have the same names.



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6.1.10 The generated [.hwt] package cannot be displayed on the watch face,

Ensure that the attributes are added and can be displayed or meet the display criteria (for example, arc charts and line charts can be displayed only when they are greater than 0). Ensure that no other blocking problem causes the display failure. Check whether the config.ini file exists in the /export/tools directory and is correctly configured.



The content is as follows:

[gui01.bin]

name=gui01.bin

version=1.0.0.1

app_list=A001,A100

6.1.11 Width of a 16-bit BMP image

The number of bytes occupied by a scanned line must be a multiple of 4. If the width of a 16-bit BMP picture is an odd number, the total number of pixels in each line (one pixel occupies two bits) is not an integer multiple of 4.

Therefore, the width of the 16-bit BMP image must be an even number.

6.1.12 Limitation on the number of controls added to the watch face tool

The number of layers on the GT2/Hector/Fides/Hestia/Kanon/Vidar watch face tool page does not exceed 45 (30 for the Arragorn watch face). The number of layers will be verified when you add them.

The number of controls is verified when the export is saved. The restrictions are as follows:

For example, if the number of combined images is x, the number of sequence frames (single or multiple groups) is y, and the number of other controls is zaragorn: $x + y + z < 30$ (verification when adding) and $10x + 3z < 100$ (verification when saving and exporting). Other products: $x + y + z < 45$ (verification when adding) $10x + 5y + 3z < 100$ (verification when saving and exporting)

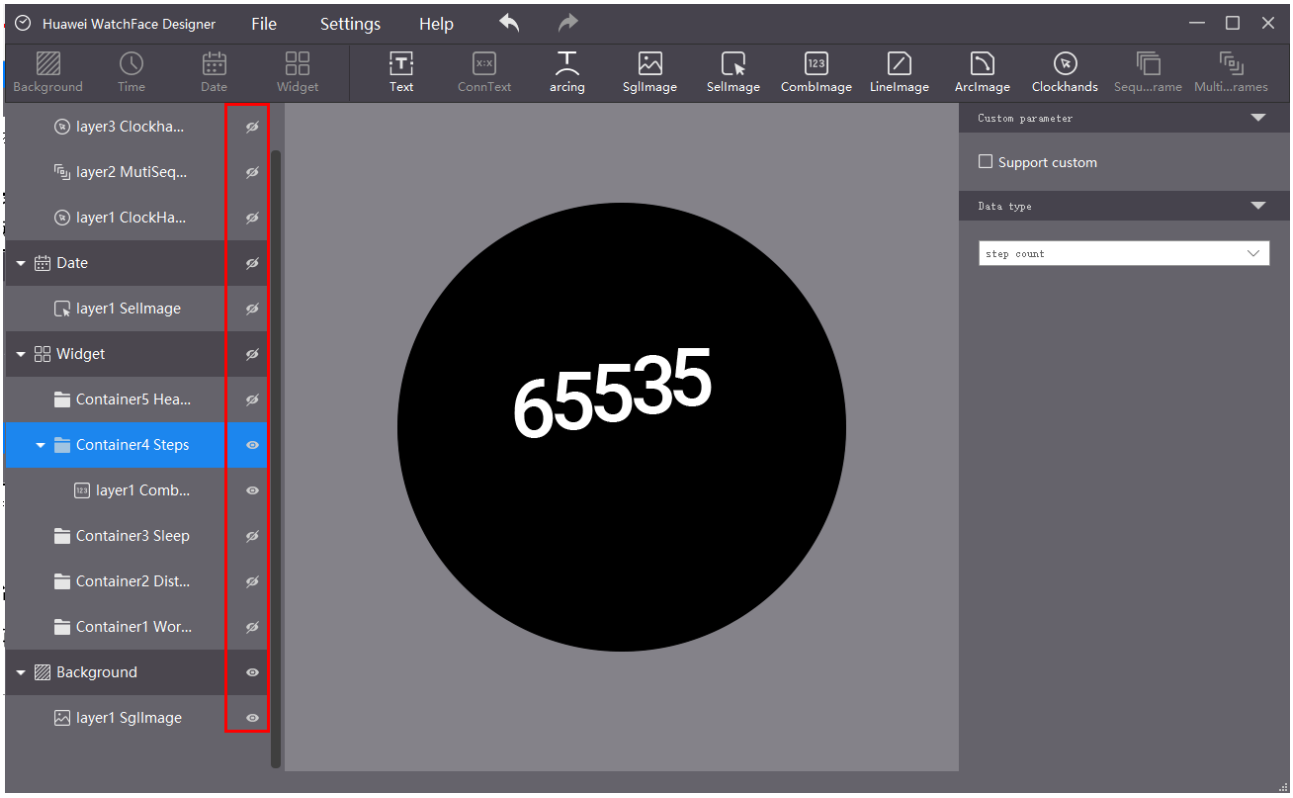
6.2 Other issues

6.2.1 Why is the preview area of the edited content invisible?

The possible causes are as follows:

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1) Hidden. Click the Hidden button again to display the layer.



2. The map layer is blocked.

This is mainly caused by the incorrect sequence of layers. For example, if a large image is placed on the upper layer, the sequence of layers before the image is covered or overwritten. As a result, the image cannot be displayed.

7 Version information

10.1.2.29 (2020-12-17)

New feature: The tool adapts to the new product Aragorn. · Added the restriction on the number of options and layers. · Shield 24 solar-related attributes. · Added the restriction that images selected during week, background, and 12-hour images cannot be reused.

10.1.2.28 (2020 -11-2)

New features: The band 4 (Andes) is added to the band. · In GT2, the 454 resolution is adapted to the new products vidar and Canon, and new features are added. · The added BMP image preview is optimized. The combined image fails to be saved in the BMP. Add arc text. Modified features: Features related to dual time zones can be implemented only in containers and customization. · Chinese week and Chinese month preview texts are consistent with those on your watch. · The preview effect in the morning and afternoon is changed to AM and PM. · The step count (bits, tens, hundreds, thousands, and tens of thousands) in B6 (Fides) is shielded. · Updated the user manual: Added the arc text control, FAQs (How To), updated many pictures under GT2, and added the software download address. · Changed the preview image name of the weather map: sunny fog to haze; cloudy fog to fog. Shield multiple groups of sequence frames.

1.0.2.16 (2020-09-16)

New feature: The tool adapts to the new product Hector and B6 (Fides). · The tool supports the sequence frame dynamic watch face. · Data types are added to the tool (added for the Fides watch face). ·DATA_DISTANCE=238; //Select the decimal point of the image. ·STEPS_SELECT_RATIO = 239; // step selection progress; Image selection progress of the ·STANDUPTIMES_SELECT_RATIO = 240; // standing times; ·STRENTHTIME_SELECT_RATIO = 241; // medium- and high-intensity image selection progress; ·DATA_DUAL_ZONE_AM_PM_TEXT = 242; // dual time zones + AMPM; Select

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the ·DATA_POWER_STATUS_ENUM = 243; // battery level and charge level. Modified the feature: shielding the combination chart alignment mode.

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