

Dec. 2021

Welcome to read Winstar Newsletter issue no.154, the last E-News for 2021. Christmas is a good time to think about all we have to be thankful for. We would like to take this opportunity to thank you for your valuable collaboration during all these years. Without doubt, Winstar will break revenue records high this year, we would not have come this success without your support and business. And we are very proud to be and continue being part of your success. We wish you all and your family have a HAPPY ending of 2021 and wish you and Happy New Year of 2022!

This year, Winstar HQs has a very special Christmas art installation displayed at our lobby. We set up two metal triangular towers wrapped by layers of silk fabric that presents the element of fruition as integral to the artwork itself which the immediate and direct aesthetic impact; just being simply for joy, beauty and a creative way of decoration for Christmas Tree. We would like to take this chance to show our fully gratitude and blessing just like the layers of golden fabric and shiny lights on this Christmas tree to all customers and colleagues will have beautiful and joyful wishes for coming new year!

Thanks to Winstar top management, we had a very special Christmas party this year. Except the sumptuous cuisine, we invited a live band to celebrate this meaningful year for us. We enjoyed the party and had a wonderful time, we strongly believe that Winstar will stronger together and stronger than ever. Below is the Christmas tree setting up video, we would like to share our happiness with you and wish you have a Merry Christmas and Happy New Year.

► [Watch the Christmas Tree set up Video](#)

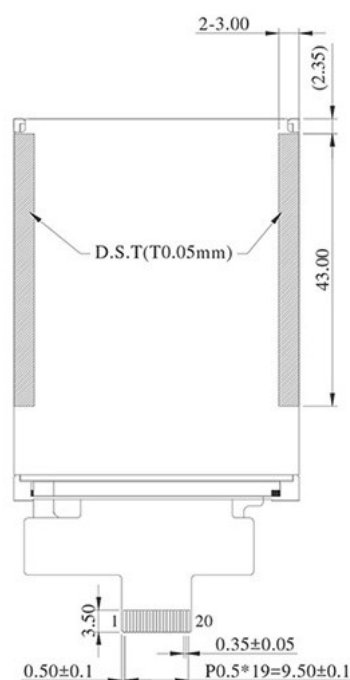
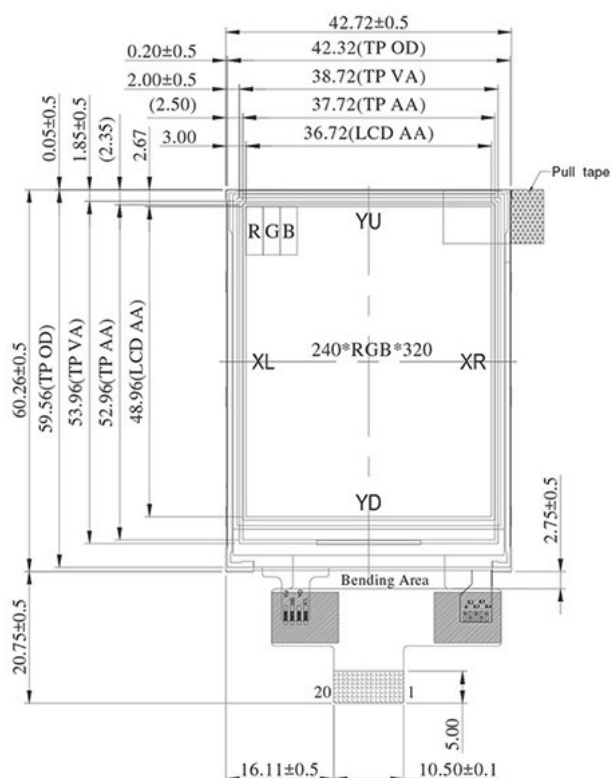


## 2.4" Portrait TFT WF24MTLAJDNT0 with Resistive Touch

WF24MTLAJDNT0 is a 2.4 inch portrait mode SPI TFT-LCD module with Resistive Touch Screen (RTP); resolution 240x320 pixels. This module is built-in with ST7789V IC; it supports 4-Line SPI interface, supply voltage for analog (Vcc) range from 2.4V to 3.6V, typical value 3.3V. This module is having anti-glare surface panel, view direction 6 o'clock, gray scale inversion 12 o'clock, contrast ratio 500:1.

WF24MTLAJDNT0 module is a Portrait mode TFT-LCD featured with brightness 350 nits (typical value). The module also is available for without touch screen option part no. WF24MTLAJDNN0. The working temperatures for WF24M model is from -20°C to +70°C; its storage temperatures range from -30°C to +80°C.

WF24MTLAJDNT0	Dimension
Size	2.4 inch
Dot Matrix	240×RGB×320(TFT)
Module dimension	42.72(W)×60.26(H)×3.43(D) mm
Active area	36.72×48.96 mm
Pixel Pitch	0.153×0.153 mm
LCD type	TFT, Normally White, Transmissive
TFT Interface	SPI
TFT Driver IC	ST7789V or Equivalent
View Direction	6 o'clock
Gray Scale Inversion Direction	12 o'clock
Aspect Ratio	Portrait
Backlight Type	LED, Normally White
Touch Panel	Without / RTP optional
Surface	Anti-Glare

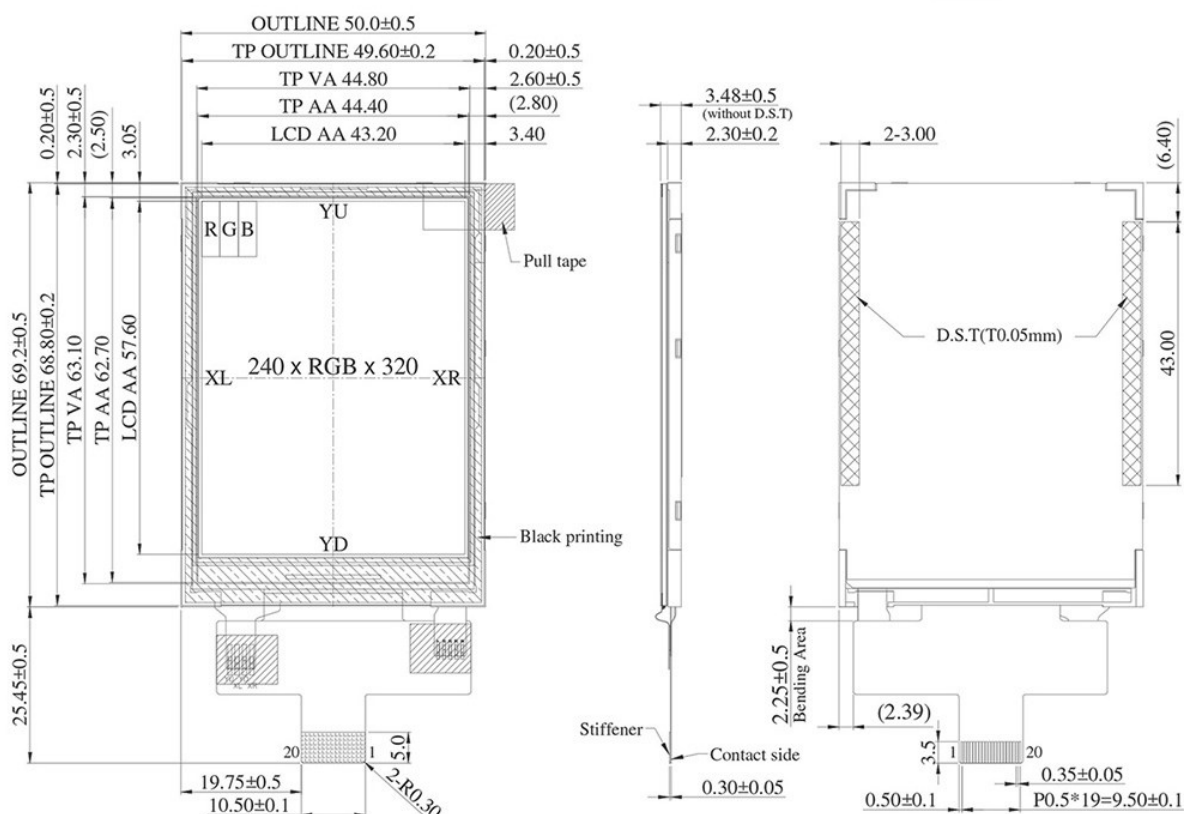


## 2.8" Portrait TFT WF28KTLAJDNT0 with Resistive Touch

WF28KTLAJDNT0 is a 2.8 inch portrait mode SPI TFT-LCD module with Resistive Touch Screen; resolution 240x320 pixels. WF28K module is built-in with ST7789V IC; it supports 4-Line SPI interface, supply voltage for analog (Vcc) range from 2.4V to 3.6V, typical value 3.3V. This module is having glare surface panel, view direction 6 o'clock, gray scale inversion 12 o'clock, contrast ratio 500:1.

WF28KTLAJDNT0 is Portrait mode TFT-LCD featured with brightness 350 nits (typical value). WF28K can be operated at temperatures from -20°C to +70°C, its storage temperatures range from -30°C to +80°C. It is ideal for mp4 players, security door system, mini audio player, and baby monitor, etc.

WF28KTLAJDNT0	Dimension
Size	2.8 inch
Dot Matrix	240×RGB×320(TFT)
Module dimension	50.0(W)×69.2(H)×3.48(D) mm
Active area	43.2×57.6 mm
Pixel pitch	0.18×0.18 mm
LCD type	TFT, Normally White, Transmissive
TFT Interface	SPI
TFT Driver IC	ST7789V or Equivalent
View Direction	6 o'clock
Gray Scale Inversion Direction	12 o'clock
Aspect Ratio	Portrait
Backlight Type	LED, Normally White
Touch Panel	Without / RTP optional
Surface	Glare

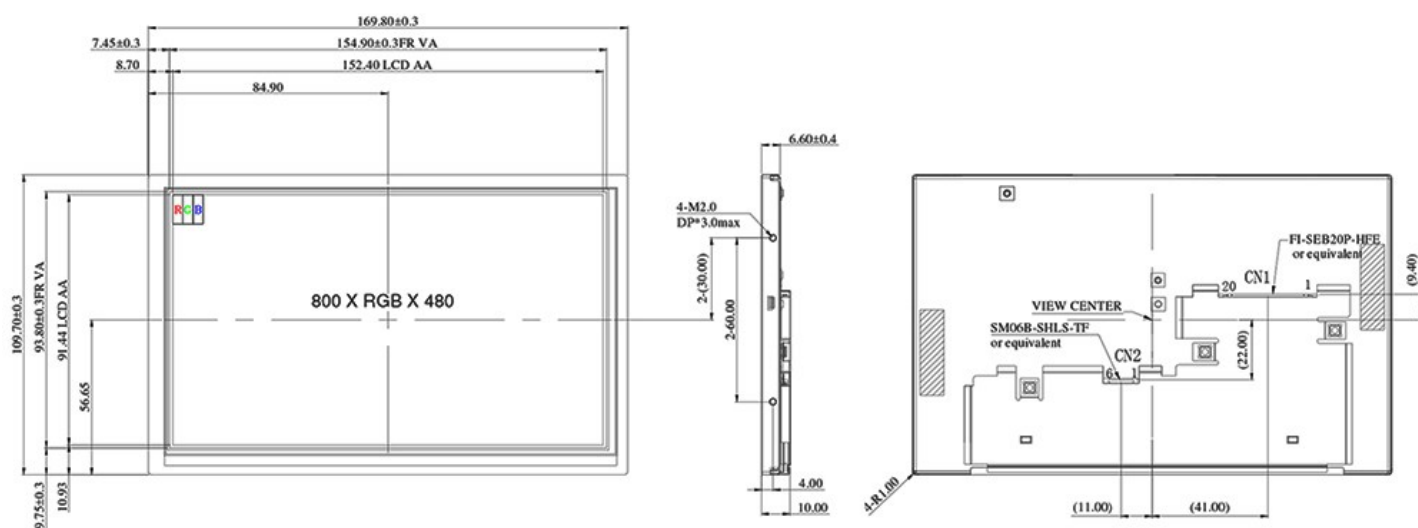
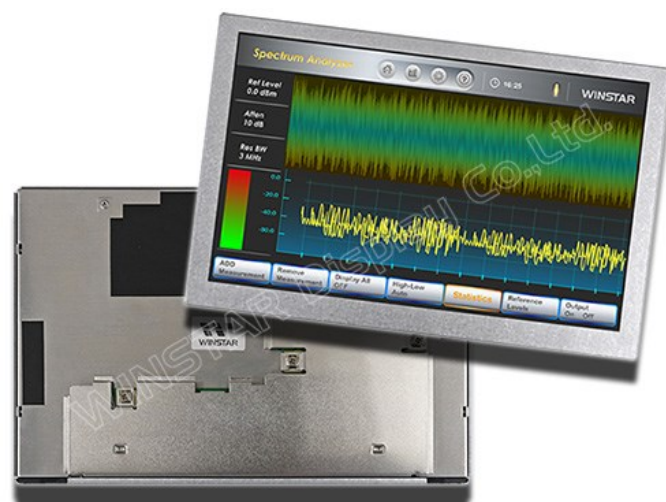


## 7" High Brightness LVDS IPS TFT WF70B6SWAGLNN0

WF70B6SWAGLNN0 is a 7 inch 800 x 480 LVDS interface IPS TFT-LCD module. It is an alternative of Mitsubishi 7" TFT Part No. AA070ME11. Mitsubishi announced in June 2020 that it will end of production of TFT-LCD modules manufacturing by its wholly owned subsidiary Melco Display Technology Inc. Customers can choose WF70B6SWAGLNN0 as a replacement for Mitsubishi AA070ME11.

WF70B6SWAGLNN0 is featured with IPS technology which is having the advantages of wider viewing angle of Left:80 / Right:80 / Up:80 / Down:80 degree, contrast ratio 1000:1 (typical value), high brightness 1100 nits, anti-glare surface panel, aspect ratio 15:9. This module is built-in with HX8249-A and HX8678-C driver ICs, it supports LVDS interface. The LVDS (Low-Voltage-Differential-Signaling) becomes more popular for TFT LCD display. WF70B6SWAGLNN0 module was designed to use LVDS interface which is a popular choice for TFT LCDs and peripherals in need of high bandwidth, like high-definition graphics and fast frame rates. It is a great solution because of its high speed of data transmission while using low voltage and improved noise performance. The supply voltage (VDD) of WF70B6SWAGLNN0 is from 2.7V to 3.6V, typical value 3.3V. It can be operated at temperatures from -30°C to +80°C and storage temperatures from -30°C to +80°C.

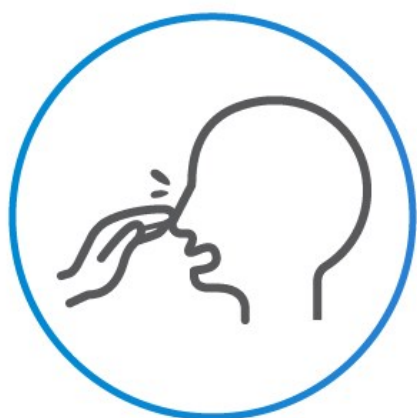
WF70B6SWAGLNN0	Dimension
Size	7 inch
Dot Matrix	800×RGB×480(TFT)
Module dimension	169.8(W)×109.7(H)×10.0(D) mm
Active area	152.40×91.44 mm
Pixel pitch	0.1905×0.1905 mm
LCD type	TFT, Normally Black, Transmissive
View Direction	80/80/80/80
TFT Interface	LVDS
TFT Driver IC	HX8249-A+HX8678-C or Equivalent
Aspect Ratio	15:9
Backlight Type	LED, Normally White
Touch Panel	Without TP
Surface	Anti-Glare



## Anti-Epidemic Operations- Winstar offers antibacterial solutions for display

COVID-19 virus broke out globally in 2019. A large-scale epidemic caused casualties, affecting daily life and economic activities. The risk of infection will be increased through close droplets, direct or indirect contact with people or objects carrying viral oral and nasal secretions, or staying in a confined space within 2 meters of the confirmed patient for a long time without respiratory protection.

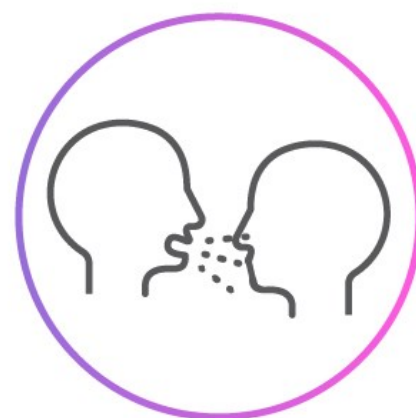
### Routes of disease transmission



Transmitted through noses & eyes



Transmitted through mouths



Transmitted through droplets

[Figure 1]

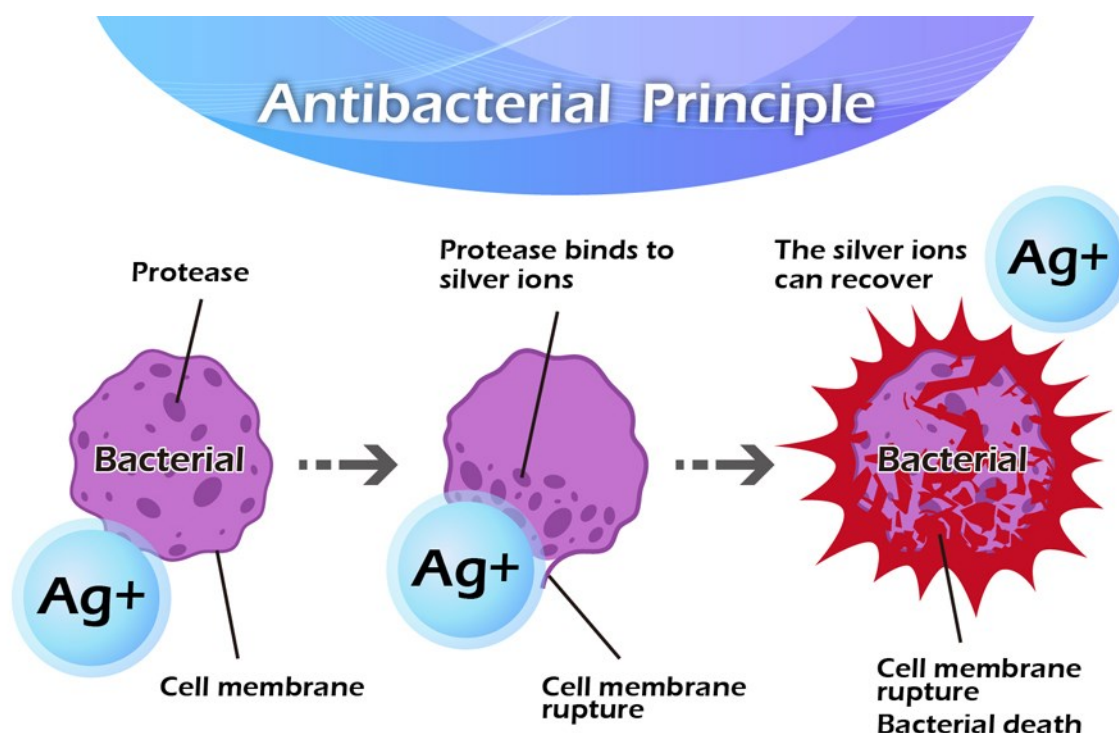
In the surrounding environment of life, which is very easy for you to contact the related public facilities like: ticket purchasing machine, food ordering machine, medical system, ATMs. etc. If inadvertently touching these facilities, you will be exposed to the risk of infection. Disinfection cannot be performed immediately, it can easily lead to a large scale pandemic. Nowadays, in such an advanced-technology environment, 3C products are everywhere. Everyday use in 3C products will leave sweat or skin grease on them which will breed bacteria or infections causing diseases.

Therefore, Winstar Group comes up with a solution, which is to destroy bacteria or germs tissues before spreading, or the general environment that is difficult for bacteria to survive. Weaken its infectious power, and effectively control the possibility of infection. Winstar actively develops a variety of product options with antibacterial effects, which can inhibit the growth of bacteria and germs on the surface of related products. Please feel safe when using related antibacterial series products, because Winstar will protect your health and safety.

### Antibacterial principle:

When bacteria or germs touch the surface of the product, the silver ions on the product surface will contact the cell membrane of the bacteria or germs. The silver ions will undergo a biochemical reaction with the protease of the cell membrane, resulting in biological inactivation (bioinactivation). During the reaction of the two, silver ions will quickly and effectively destroy bacteria and germs; afterward, silver ions will be released from dead bacteria and germs, and then continue to carry out repeated biochemical reactions to other contacting live bacteria and germs until the bacteria and the germs are eliminated. As shown in Figure 2. The effect of silver ions is a long-term bactericide with a long-lasting effect.

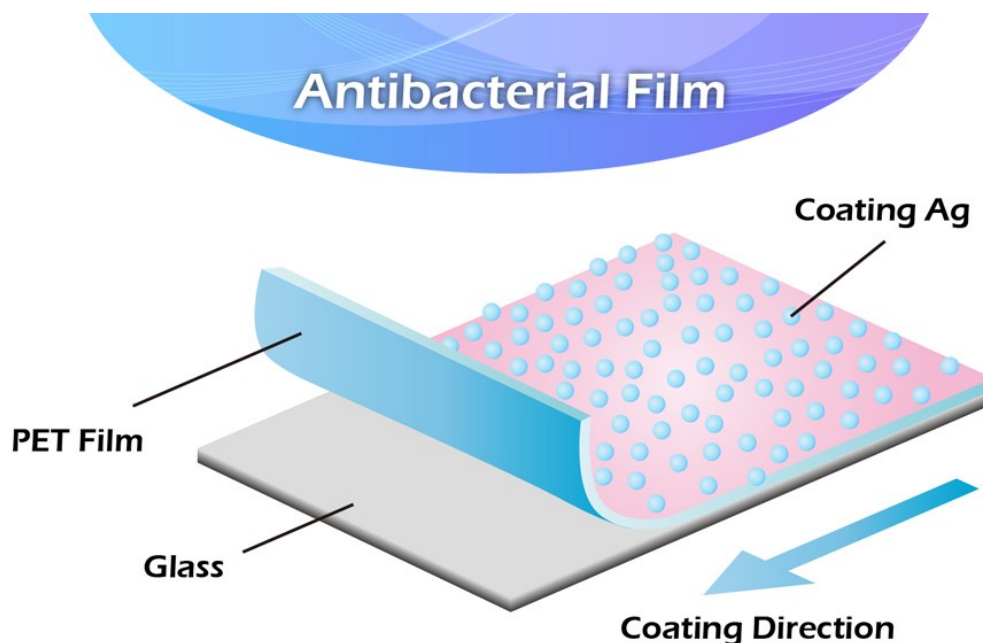
Winstar launches related antibacterial series products, which will retain antibacterial effect after long-term use. The biological test results show that it is effective in inhibiting *Escherichia coli* and *Staphylococcus aureus*, and the antibacterial effect reaches more than 99%, and the antibacterial ability won't decrease as time goes by.



[Figure 2: Principle of antibacterial]

### Antibacterial Film:

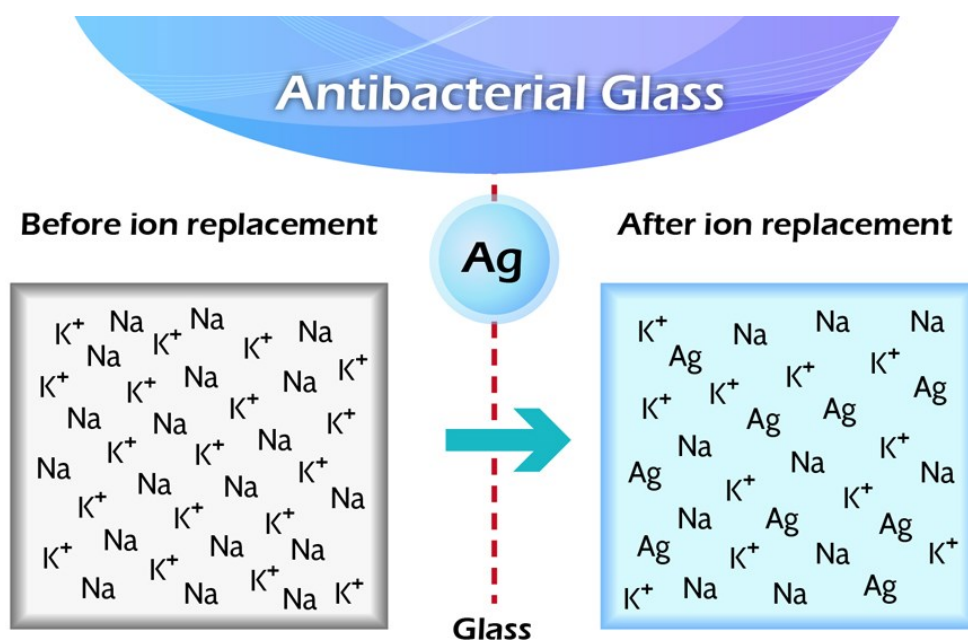
The silver ion material is evenly spread on the PET substrate in a coating process. The silver ion coating layer is tightly combined with the PET after thermal curing treatment to form an antibacterial protective film, as shown in Figure 3.



[Figure 3: Antibacterial Film]

### Antibacterial Glass:

It is formed by using high-temperature ion exchange method to exchange and combine silver ions with other ions in glass. As shown in Figure 4, the antibacterial effect of the antibacterial glass is very good. At the same time, its optical characteristics and surface scratch resistance both have excellent performance. For product portfolio, design considerations can be integrated with cover glass.



[Figure 4: Ion exchange principle of antibacterial Glass]

### Antibacterial product solution: (as shown in Figure 5)

- ◆ Plan and design with antibacterial display and related products according to customer requirements.
- ◆ Plan and design of LCM/CTP/RTP products with antibacterial film.
- ◆ Plan and design of LCM/CTP/CG products with antibacterial glass.
- ◆ Provide suggestions considering product environment and applications.



[Figure 5: Antibacterial display product plan]

## Antibacterial product applications:

Regarding antibacterial issues, whether it is for general household use, industrial control, medical care, mass transportation systems, personal 3C products, etc. (as shown in Figure 6), the Winstar team can provide suitable product solutions and professional services, which are superior to other peers in the industry. Including users and applications circumstances, operating functions, special environments and other needs are considered, providing material selection, human factor design, high-quality photoelectric characteristics, best product combination, software firmware design, optimized operating interface, etc, to meet specification requirements, and innovate antibacterial optimization product solutions. Winstar is willing to achieve win-win-win benefits with you and your customers.

### Medical care



### Mass transportation systems



### Industrial control



### Personal 3C products

[Figure 6: Application areas of display products]