

## See The Ocean Like Never Before

### Harsh Marine Environments

Marine technology demands rigorous specifications and requirements. Our marine-grade monitors offer IP rated touchscreen designs, sunlight readability, dimming capabilities and more.



### Marine Display Challenges

Sea water is corrosive and needs to be kept well away from the internal electronics. At the same time, devices get exposed to extremes of heat and cold. The display needs to be easily and quickly readable to users in bright sunlight or complete darkness.

#### Exposure to water

It can damage the display's electronics and cause it to malfunction.

#### Extreme temperatures

Marine displays must be able to withstand extreme temperatures, both high and low.

#### Solar damage

It can damage the display's electronics and cause it to malfunction.

#### Compatibility with marine electronic

Marine displays need to be compatible with a range of marine electronics, such as GPS, radar, and sonar systems.



### Solution

Thermal management needs to be carefully considered with a display that is likely to be exposed to the sun. A marine or other outdoor system needs to be sealed to IP66.

- . Extreme UV, solar
- . Extreme temperature ranges
- . Exposure to Salt-water, Humidity
- . Touch with gloved hands
- . Regardless of rain, dust and dirt build-up

### **High Brightness**

### **UV Resistive**

### **IP Grade**

### **Waterproof touch**

## **Do More Outside And Driving Safe**

### **Displays & Instruments**

The display is exposed to high demands and therefore particularly in industrial and special purpose vehicles, it must be extremely resistant. Our sturdy solutions are quality certified and combined with the fitting field site application they provide the necessary flexibility for every type of vehicle and task.



### **Vehicle Display Challengers**

Vehicle displays have specific requirements, such as durability, weather resistance, and visibility under various lighting conditions that offer vehicle displays and may be considered challengers in this space.

### **Weather Conditions**

Outdoor vehicles are often exposed to extreme weather conditions, rough terrain, and heavy use, which means that displays need to be rugged and durable enough to withstand these conditions.

### **Exceptional readability**

Drivers need to clearly monitor the progress of their Speedometer and this requires a user interface that is easily readable in the most adverse conditions.

## **Solar radiation, UV**

It can damage the display's electronics and cause it to malfunction. automotive parts and vehicles are susceptible to the damaging influences of daylight, heat, and moisture.

## **Extreme Reliability**

Our comprehensive automotive weathering testing Lab. help ensure that your products achieve ever longer lifetimes.

The degree of our product to which a system or component can function correctly in the presence of invalid inputs or stressful environmental conditions.



## **Solution**

In order to experience this outdoor journey to the fullest, our display needs to be long life operation, Anti- Glare, viewed in full sunlight, meet IP66 standard, used with wet or gloved hands. With these rugged designs, you will have no worries to go on a long journey in sunny day or rainy day.

- . High Brightness
- . Water-proof
- . Touch with gloved hands
- . Regardless of rain, dust and dirt build-up

## **UV Resistive**

## **IP Grade**

## **High thermal stability**

## **Gloves touch**

## **Enriching and secure in-vehicle infotainment**

Driving isn't just about getting from point A to B anymore. Drivers expect a total driving experience – and with good reason. They now have more features to choose from advanced graphical displays, and device connectivity alongside comfort, convenience, fuel efficiency, and safety.

## One Control For All

Outdoor rugged displays offer features such as durability, high-brightness displays, automatic brightness adjustment, anti-glare coating, smart power management, and remote monitoring and management.



## Industry Display Challenges

One of the biggest challenges in the outdoor industry display market is the need for displays to be able to withstand harsh environmental conditions such as extreme temperatures, moisture, and direct sunlight. To address this challenge, manufacturers use specialized materials and coatings to protect displays from the elements.

### Weather Resistance

Be able to withstand extreme weather conditions such as high heat, cold, rain, snow, and direct sunlight.

### Visibility and Readability

Outdoor displays need to be bright and clear enough to be visible in different lighting conditions, including direct sunlight.

### Maintenance

Outdoor displays require regular maintenance and cleaning to keep them running efficiently.

### Vandalism and Security

Outdoor displays are more vulnerable to vandalism and theft, especially in public areas.



## High-Performance Solution for Harsh Industrial Environments

- . EMI shielding
- . UV, IR shielding

- . Wide temperature and humidity range solutions
- . Optical enhancements(AG, AR, AF etc.)
- . Hovering Touch Solution

#### **Anti-Shock**

#### **Anti-Shattering**

#### **Vandalproof**

#### **Waterproof touch**

### **Surgery Begins With A Clear View**

A surgical display LCD screen is a specialized display designed for surgical settings, with features such as high brightness, anti-reflective coatings, and compatibility with surgical equipment and sterilization procedures.



#### **Medical Display Challengers**

Maintaining accurate color representation, ensuring high image quality and resolution, addressing compatibility with various medical imaging systems, and adhering to stringent regulatory standards for medical device safety and performance.

#### **Viewing angle**

The surgeon needs to be able to see the medical images clearly from their position at the operating table, but the display screen may be positioned in a way that makes it difficult to view at certain angles.

#### **Image quality**

The quality of the images can be compromised by factors such as poor lighting, reflections, or low-quality display screens.

#### **Reflection**

Reflection can be a significant challenge for surgery displays, as it can interfere with the surgeon's ability to see the medical images clearly.

## Anti-Bacterial Sterilization

During surgery, all equipment and surfaces must be kept sterile to prevent the spread of infection. This can be challenging with display screens, which may not be designed to withstand the harsh cleaning agents used in surgical settings.



### Solution

We understand cleanliness and touchless are critical within the medical market, as is product robustness, this solution was implemented and is now part of the final design. Our optical bonding solution can improve light leakage from LCD panel, enhance contact ration. The adhesive is completely transparent, the structure and color of the adhesive will not transform through the use of time.

### Longevity

### Anti-Corrosion

### EMC Proof

### Anti-Bacterial