

# QUALITY AND RELIABILITY

At BIX, we know that high quality and unmatched customer service are values that turn shoppers into loyal customers and purchases into relationships.

From our warranty to our unparalleled customer service, we have built our business around helping yours succeed.

Our manufacturing process is built on quality methods and materials, not cutting corners. We only use the most reliable, best performing components available. From top-tier LEDs selected with minimal color variations (typically a fraction of a bin) to automotive grade cables, we design our product to last longer and look better than any other LED backpack product on the market. Through our state-of-the-art whole-sign calibration process, we ensure every digital billboard and led sign displays smoothly and brilliantly, without tiling or quilting. From superior weather and water resistance to strong, lightweight cabinets, our displays are designed to provide years of worry-free performance.

Both mechanically and electronically, our LED backpack boast a streamlined design, low parts-count and simplified construction that minimizes maintenance and enhances reliability. These features give BIX products unparalleled field uptime.

Our design is focused on uptime and reliability, featuring a patented multi-channel data configuration that helps keeps messages readable in the event of a service issue.

We have engineered our displays to operate in all climates — from coastal regions with high humidity and salty sea air to desert areas with intense heat, high solar intensity and vast temperature changes. Before a BIX product goes to market, it must pass a battery of stringent tests for structural stability, windload, heat management, corrosion resistance and of course, water resistance.

Some of our most stringent tests include:

## Temperature extremes

We design all our electrical components to withstand temperature cycling in our environmental chambers from -40°C to +60°C (-40°F to +140°F).

## High heat and humidity

We ensure that all our LED modules can withstand 1000 hours at 85°C (185°F) and 85% relative humidity.

## Salt fog

All modules pass the ASTM B117 salt fog test, which was originally designed to test corrosion resistance for automotive finishes.

#### High Accelerated Life Testing (HALT)

This process applies controlled thermal and mechanical stress to identify design weaknesses and avenues for product improvement.

#### Electrical disturbances

We perform a variety of electrical disturbance testing, such as EFT (electrical fast transient) and surge testing.

#### Underwater operation

For years, we've been proving the reliability of our modules by running them underwater for months at a time.

#### Energy efficient

Operating costs are an important, and often overlooked, consideration in choosing an electronic sign or billboard manufacturer. BIX LED backpack uses only high efficiency components. The average energy usage of a BIX sign is about 1/3 of the maximum amperage requirement.