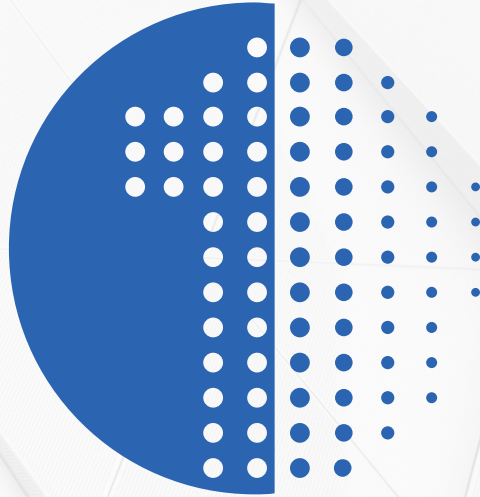


# LED IP PRIMER

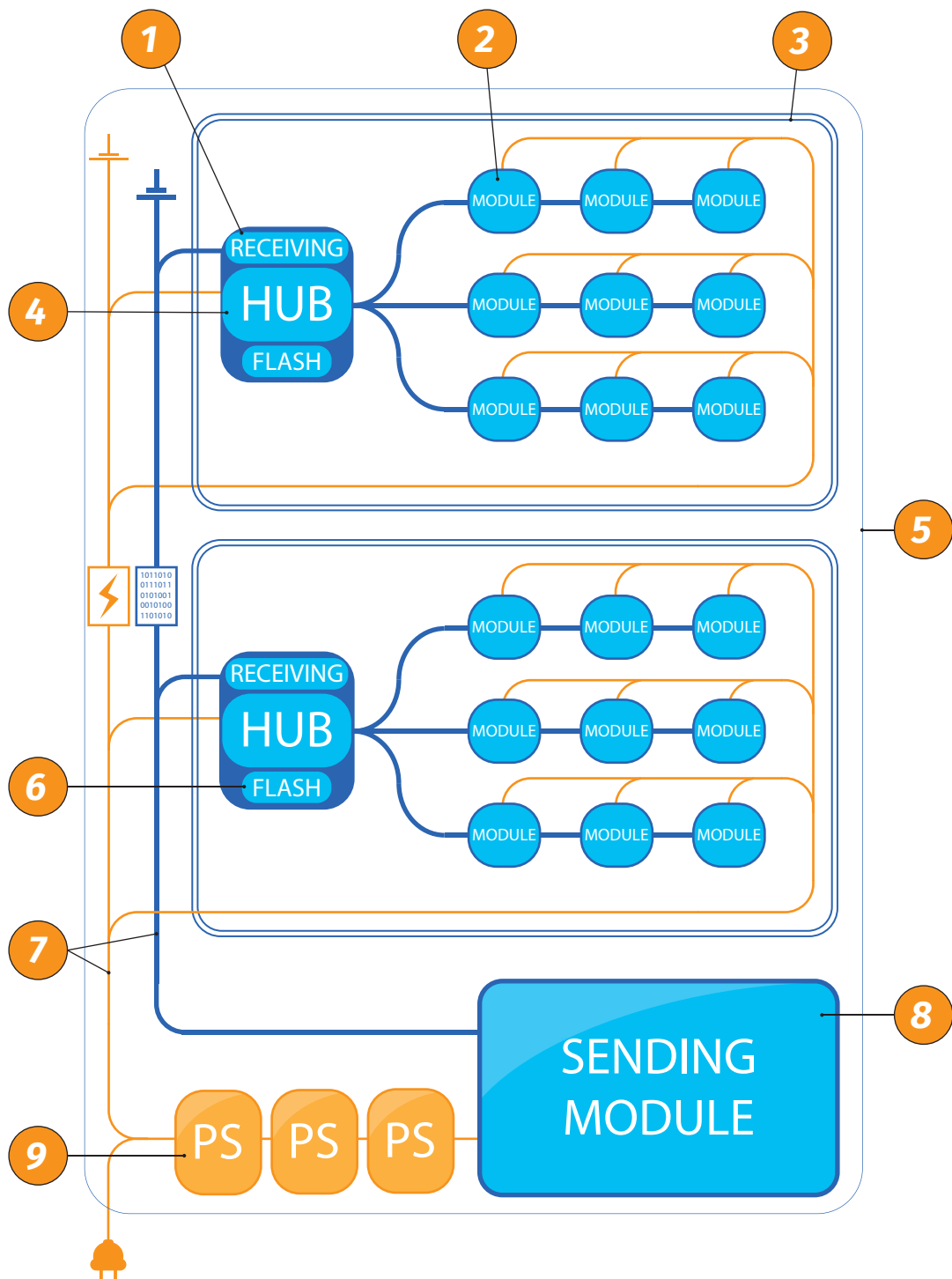


## ONE WORLD LED

LED DESIGN, MANUFACTURE & WHOLESALE

This brochure provides a quick overview of the patented innovations by One World LED and our partners around the world. The systems and methods invented by patents granted to One World LED show our commitment to development of technology and engagement in joint research with other industry leaders to advance the technology and production of intellectual property for the benefit of all.

## Main Components of a LED Display



1. Receiving Card  
2. LED Module  
3. Display

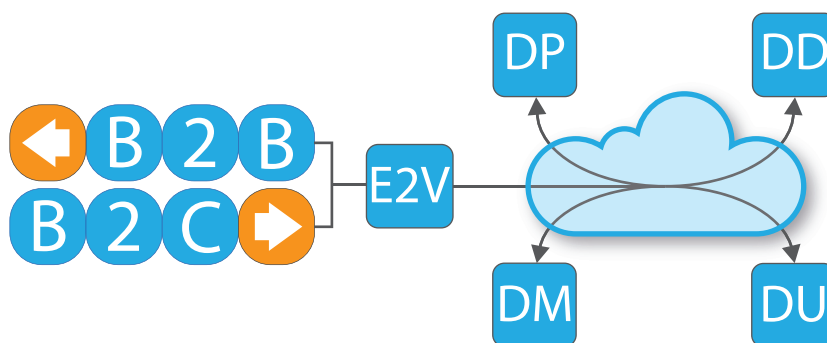
4. HUB Card  
5. Cabinet  
6. Flash Storage

7. Cables  
8. Sending Module  
9. Power Supply

## Virtual Commerce and LED Systems

Virtual Commerce System is based on a multiparty and multilink digital commerce model comprised of Data Providers (suppliers), Data Managers (agent or distributor), Data Displays (DD) and Data Users (DU) in a global interactive environment to facilitate delivery of information and processing of transactions.

One World LED and our partners have worked together for over the last 10+ years developing systems related patented technologies. These patents are all designed to work with our LED products and provide a robust technological framework to support our users' virtual commerce applications such as our E-Commerce & V-Commerce bridged with E2V shown below. The remaining document aims to highlight some of our key innovations and how they tie into the overall picture.



### ARV - AUS 2017204785

Components Involved: 3, 8.

Ambient Responsive V-Commerce changes how advertisers schedule content on displays. Currently advertisers have to choose where to display content and hope that it engages with the target audience. ARV uses the combination of ambient sensors on the displays and parameters supplied by the advertisers to determine the optimum content to be displayed. In combination with Adverpost, it allows for content on a screen to adjust dynamically based on ambient factors, including weather, time, temperature, socioeconomic demographics, and even the buying patterns of local consumers.



### E2V - AUS 2016260749

Components Involved: 3, 8.

E-Commerce to V-Commerce (E2V) is another patent that bridges E-Commerce with Virtual Commerce. E2V describes how one can take already existing content, such as products for sale, and convert that data into a ready for advertising medium. E2V further allows for advertisements to sync with existing product catalogues, and allows for advertising to update in real time with product changes. As the advertising works and products sell, the advertising changes on the fly. Integration with Adverpost and ARV allows transformation of outdoor advertising to virtual storefront operations. Advertisers can take products and services to their desired markets and deliver them to the correct target audience rather than blind advertising.



## VCB - AUS 2014350720

Components Involved: 1, 2, 3, 4, 5, 8.

The Virtual Commerce Bazaar (VCB) provides for more interactivity with advertisements. A degree of separation currently exists between an advertisement and the product or service it is trying to sell. VCB allows for each advertising screen to become a virtual storefront, and for end users to directly connect transact with. VCB can further, in conjunction with Softpanel, divide the advertising screen up and allow for multiple advertisers to present themselves on the same screen at the same time allowing screens to act as a virtual mall.



## SMART DISPLAY - AUS 2015263573

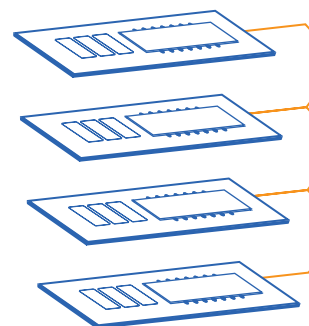
Components Involved: 1, 2, 3, 4, 5, 8.

Smart display further enhances LED displays to better detect nearby viewers. Like ARV, it detects nearby people and adjusts its displayed contents and functions based on those around it. People can interact with the display and share their interests, allowing for tailored advertising. This in conjunction with ARV and other AI innovations can transform the LED displays into intelligent sales robots accessing customers' public social media to engage and interact on a personal level.

## FMAS - CN 200710171787.8

Components Involved: 2, 6.

Flash Module Array Systems is a fundamental design patent used in many systems with distributed modular storage controllers. It teaches how to manage a large collection of flash memory based controllers. In our LEDs, each piece of storage is associated with a section of the LED display, usually in a 1:1 relation of cabinet to flash memory. Combined with this, FMAS provides the LEDs with means to display content and act as an advertising medium without the need for a permanent physical server at the screen. Combined with Softpanel, an LED is able to be remotely managed through the internet or other communication method.



## ADVERPOST - AUS 2016200472

Components Involved: 3, 8.

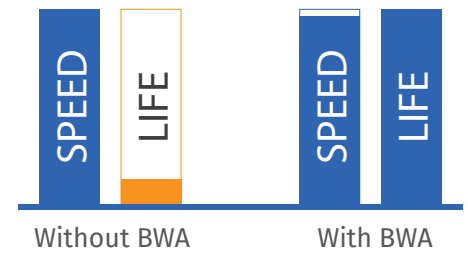
The Adverpost patent is best seen in our integrated software system Adverpost. Adverpost is a web based content management system that provides easy access to advanced control features of advertising displays. Adverpost is best used as a central management system for a distributed network of advertising screens. Adverpost allows both managers and users to quickly and easily schedule advertising in advance, among many other useful features.



## BLOCK WEAROUT AVOIDANCE - CN ZL200710171786.3

Components Involved: 6.

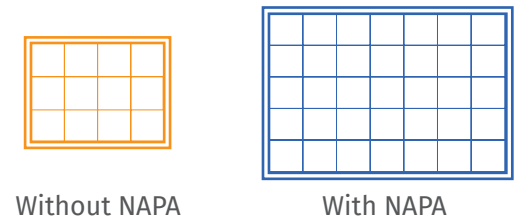
While flash based storage brings many benefits, including higher speeds and reliability, it also comes with a restricted life. Data can only be written to a storage block a certain number of times before that block cannot be used anymore. Block Wearout Avoidance teaches how to avoid this end limit by introducing additional space to quickly swap data. This results in very high read/write speeds while maintaining additional life, at the cost of storage space. This allows for the data storage behind the LEDs to live longer and require less maintenance.



## NAPA - CN 201510151935

Components Involved: 9.

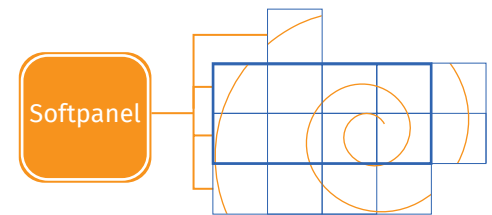
Node Arranged Power Array (NAPA) drastically reduces the power demand and consumption of large screens. Currently in order to power large screens, the entire screen is powered up and supplied with maximum power before the software/firmware can take control and manage aspects such as brightness. This is a common problem known as inrush current, which NAPA solves with logic circuits that break up the power to each section and delays power input by fractions of a second. The end result is a near instantaneous power on of large scale screens and LEDs with minimum power demand.



## SOFTPANEL - AUS 2015207570

Components Involved: 1, 4, 6.

Softpanel is our invention that lets managers better interact with the LED displays. Softpanel allows for direct and remote set up and modification of the LED screens. Authorised users and management programs can quickly reconfigure or swap the LED into performing different functions, thus a screen can provide advertising to users at certain times of the day, and then quickly and easily swap out into another virtual commerce purpose as required. Softpanel can be utilized with other patents to better enhance their functionality and use.



## FLASH ARRAY HUB, CASCADING - ZL201010244777.9

Components Involved: 1, 4, 6.

This invention teaches the modular design of the large LED Screens based on HUBs for interconnecting display modules and other control subsystems.

## FIRMWARE BASED FLASH ARRAY MANAGEMENT - ZL201010149051.2

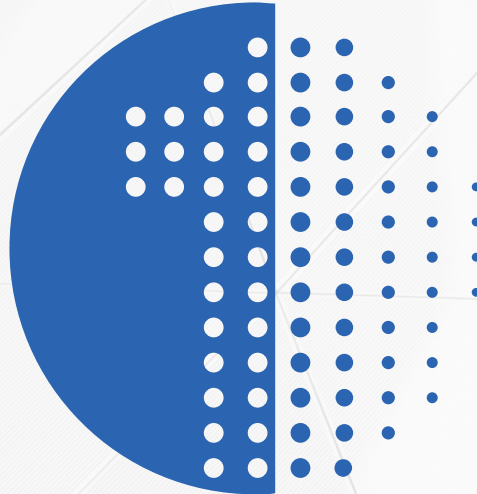
Components Involved: 1, 4, 6.

This invention allows independent operation of Flash Module Arrays and Hubs for large LED screen subsystems from computer-based controls of prior art display systems.

## CONTROL MODULE CLUSTERS - ZL201010234704.7

Components Involved: 1, 4, 6.

This invention provides the foundation for Smart Display integration of other key technologies for advanced V-Commerce implementation.



Other One World LED related patents include:

CN 101276311, CN 101373441, CN 101419560, CN 101825994, CN 101916584, CN 201804563, CN 101976574, CN 102542493.

ZL 200710132636.1, ZL 200710135058.8, ZL 200810037133, ZL 200810200121.5, ZL 200810204083, ZL 201010149051,  
ZL 201010234704, 201020268635.7, ZL 201010274777.9, ZL 201210015905.

US 15/648018, US 09/285147, US 7356677, US 09/376825, US 6401183, US 6690400.