

PIXIM REVIEW

Light Rail and Bus Security

Pixim-Powered Cameras Overcome Security Challenges of Traditional Cameras

London. Honolulu. Singapore. Boston. Istanbul. Vancouver. These are just a few of the cities worldwide that have installed security cameras on at least some of their buses or light-rail trains. In some cases, it is passengers concerned for their safety who lobby for the installation of cameras, believing that the cameras will deter criminals. Other times, city governments advocate security cameras as a way to reduce crime against people and property, to lower the costs associated with vandalism, and to encourage ridership by providing a safe environment for passengers and drivers.

If these vehicles use traditional CCD-based security cameras, however, they risk being less than effective as both deterrents and prosecuting tools – because if potential criminals find out how poorly these cameras

perform in sub-optimal lighting conditions, they will realize they might get away with their actions without repercussions.

Common surveillance camera problems for transit authorities include:

- › Lack of detail in backlight, high-contrast light, or outdoors, including at bus or train doorways and windows
- › Low clarity in shadows, such as inside the bus or train
- › Image washes out due to glare and reflections from glass and metal
- › Color inaccuracies in varying lighting conditions, such as while the bus or train is moving or at transit stations
- › Low-quality Digital Video Recorder (DVR) recordings

Continued on back →

At-A-Glance:

Pixim Digital Pixel System[®] (DPS) Technology

- › Widest Dynamic Range (WDR): Captures up to 1024 times more data (dynamic range) than standard CCD cameras
- › Signal-to-noise ratio (SNR): >50 dB (max)
- › Sensitivity: <0.5 lux (CMY) minimum illumination f/1.2, 50 IRE
- › Resolution: 540 horizontal TV lines (HTVL) equivalent



Pixim-Powered Cameras Overcome Security Challenges of Traditional Cameras [continued]

Pixim's Digital Pixel System® (DPS) ultra-wide dynamic range technology, a true breakthrough in imaging technology, delivers unprecedented image quality in all lighting conditions. Cameras powered by Pixim's specialized image processing chipsets can significantly enhance security on buses and light-rail trains through the following capabilities:

- › **Widest dynamic range:** Captures highlight and shadow detail in the same scene.
- › **Highest total resolution:** Makes it easy to distinguish image features and details, even in highly variable lighting conditions.
- › **Superior color rendering:** Accurately displays color even in difficult lighting such as backlight, high-contrast scenes, glare, and reflection.
- › **No "camera blindness":** Eliminates the vertical smear, pixel blooming, and other image artifacts commonly encountered in high-contrast scenes.
- › **High image compression:** Improves image quality with smaller file size – allowing DVRs to record with higher frame rate or higher resolution, or both, while maintaining the same total recording time.



› Loss of detail

› Superior image quality

Security cameras based on Pixim technology capture details of passengers and activities inside buses and light-rail train cars. Whether the cameras are located outside facing inward to the passenger compartments, or situated so they're pointing toward doorways or windows, the Pixim-Powered security cameras clearly capture the people and activities within the buses or trains, as well as in the immediate surroundings, such as at transit stops. In part, the cameras act to deter people from causing problems. If people do commit crimes or vandalize the buses or light-rail trains, however, the accurate, high-resolution images made possible by Pixim's ultra-wide dynamic range technology help officials to identify and prosecute the perpetrators. And once potential criminals realize that they can't avoid recognition by the cameras by hiding in the shadows or counting on glare to obscure their facial details, the security cameras will become even more effective as deterrents.

PIXIM®
DIGITAL PIXEL SYSTEM

1395 Charleston Road
Mountain View
CA 94043

P: 650.934.0550
F: 650.934.0560

www.pixim.com