

Crime-Fighting Cameras that Communities can Afford



Flock Safety

Case Study Highlights

- **Background:** Most property crime goes unresolved due to a lack of evidence, and existing technological solutions to capture evidence are often ineffective or too expensive for most to justify. Flock Safety saw the need for an effective crime-fighting solution that communities can afford.
- **Solution:** Lantronix helped Flock Safety develop the core layer of their platform, allowing them to design an infrastructure-free automated license plate recognition (ALPR) system that captures the evidence needed to fight non-violent crime without compromising privacy.
- **Results:** Flock Safety's system combines effectiveness and affordability to help citizens and law enforcement combat non-violent crime and make their communities safer.

Introduction: Capturing evidence in non-violent crimes

[Flock Safety](#) helps neighborhoods, schools, and businesses fight the crime affecting their lives. They developed a passion for fighting crime when they experienced it in their own communities and—like the majority of non-violent crime cases—had insufficient evidence to resolve it. Being technically oriented, they were inspired to build technology to capture the evidence needed to lead to a world where we eliminate non-violent crime.

Non-violent crimes often go unresolved simply due to a lack of evidence. Various technological solutions that capture evidence are often ineffective. Home security systems tend to raise too many false alarms, and pictures of suspects' faces taken by outdoor cameras are usually insufficient evidence on their own. Even facial recognition technology is considered unreliable in many situations, as well as controversial from a privacy standpoint.

With so many crimes involving the use of a vehicle, a license plate is often the best evidence for pursuing a crime. Camera systems with automated license plate recognition (ALPR) technology are available but pose an infrastructure cost too high for most neighborhoods to justify. Flock Safety recognized the need for an affordable, effective ALPR system capable of giving the public the evidence they need to solve crime without compromising the privacy of citizens.

Solution: The most flexible ALPR system available

Recognizing early on that Qualcomm Technologies, Inc. (QTI) technology offered high performance with a low power requirement, Flock Safety's first prototypes were made on off-the-shelf phones based on Qualcomm® Snapdragon™ technology. [Lantronix](#), an innovator in product development services and edge computing modules, used their expertise with QTI's technology to help Flock Safety set up the core layer of their platform, allowing Flock Safety to focus on the application layer where their core innovation lies.

Lantronix provided Flock Safety with the [Open-Q™ 624A System on Module \(SoM\)](#) running Android. This SoM is based on the [Qualcomm® APQ8053 Lite](#) which couples custom hardware with modern software to offer high performance with a low power requirement. Combined with a custom carrier board designed by Lantronix's engineering team to Flock Safety's specifications, a cost-effective, purpose-built platform was quickly realized. This included camera software, cellular data connectivity to the cloud, sensor support, low-power hibernation, and device

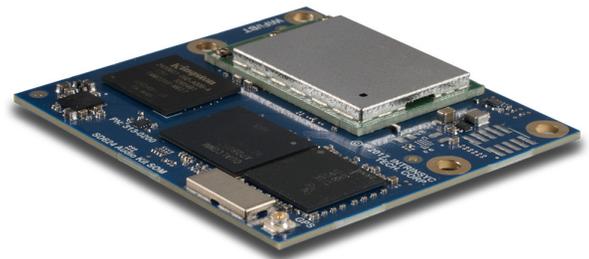


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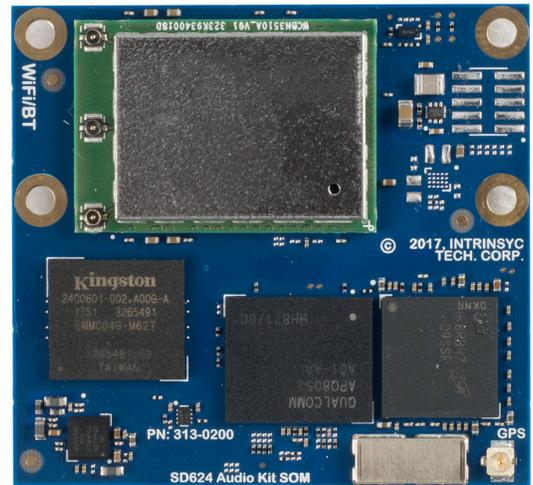
management support for remote software updates. Without having to worry about this foundation, Flock Safety was able to start innovating on their solution extremely quickly.

The affordability of Flock Safety ALPR system primarily comes from its lack of infrastructure. Thanks to its efficient smartphone hardware and modern software solutions, it is powered entirely by solar and battery with a discrete design intended for neighborhoods. It can be installed in under thirty minutes in any area with solar and cellular coverage and receive software updates over the air to further reduce maintenance costs. This flexibility makes it a viable option for communities that cannot afford existing solutions.

Despite its affordable cost, Flock Safety's camera system is extremely powerful from a processing perspective. A single camera can capture 15,000 vehicles per day and send real-time alerts to law enforcement when it spots a license plate on the FBI's NCIC list of stolen vehicles. Using passive infrared motion detection, it can read the license plates of vehicles traveling at a speed of up to 75 MPH and up to 75 feet away from the camera during the day or night. The images it captures are analyzed with a proprietary machine learning algorithm using Vehicle Fingerprint™ technology to extract relevant data such as the license plate number and state of issue, the vehicle's make/type/color, and even additional objects caught in the image. The customer can search their database of footage using these details—even a partial license plate number—to filter through the images for easier identification.



Lantronix Open-Q™ 624A System-on-Module



Safety technology that respects privacy

A primary concern with surveillance systems is privacy, so Flock Safety factored privacy into every decision along the way, and they have even continued to learn about protecting privacy thanks to their exposure with organizations and projects focused on providing public safety in a transparent and democratic manner.

Flock Safety's camera system uploads the footage to the Cloud soon after it's captured and wipes it from the device's own storage so it cannot be stolen by someone physically tampering with the camera. The footage is stored on the Cloud fully encrypted, and is automatically deleted after thirty days. No facial recognition is used.

The customer owns the data, so only they decide who may see it. Flock Safety does not access the data without explicit permission from the customer. Finally, the system includes a Safelist feature in which the system is instructed to label a particular vehicle as a resident or automatically delete any footage taken of it.



As affordable as Flock Safety's camera systems are, they offer performance that has translated to real-world success.

Results: Less crime and safer communities

As affordable as Flock Safety's camera systems are, they offer performance that has translated to real-world success. They are currently being used in over 700 cities across 38 states to help solve up to five crimes every hour. Law enforcement agencies have reported reductions in crime as high as 60% or more.

The camera systems have given police crucial leads in many types of crime such as carjacking, burglary, and theft, as well as helped them locate stolen property and people with outstanding warrants. In DeKalb County, Georgia, Flock Safety's cameras even helped police recover a kidnapped 1-year-old boy and arrest the suspects.

Flock Safety's ALPR systems offer an effective crime-fighting solution to people that otherwise wouldn't be able to afford one. Communities and law enforcement have a new tool to make their neighborhoods, businesses, and schools safer while protecting privacy.

About Flock Safety

- **Company Name:** Flock Safety
- **Description:** Flock Safety offers affordable ALPR camera systems to help citizens and law enforcement fight non-violent crime in their communities.
- **Headquarters:** Atlanta, Georgia
- **Website:** www.flocksafety.com

flock safety

About Lantronix

- **Company Name:** Lantronix
- **Description:** Lantronix is a global provider of hardware and software solutions for the Internet of Things (IoT) and Out of Band Management (OOBM).
- **Headquarters:** Irvine, California
- **Website:** www.lantronix.com

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