

ACTi

Physical Security End-to-End Solution Provider

White Paper | Analog Cameras

ANALOG CAMERAS

A practical white paper for cost-effective upgrades,
coaxial infrastructure, and hybrid video operations

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Document purpose

This white paper explains the value of analog cameras for professional security projects and positions ACTi analog cameras as part of a practical hybrid video surveillance ecosystem. It is written for system integrators, consultants, security managers, facility managers, and procurement teams.

1. Executive Summary

Analog cameras remain relevant in professional security because many sites already have coaxial cabling, basic monitoring requirements, and budget-sensitive upgrade priorities. For these projects, a high-definition analog camera deployment can improve image quality and operational reliability without requiring a full IP camera replacement at every camera point.

For end users, the value is practical: reuse existing infrastructure, simplify camera-point setup, maintain familiar installation methods, and improve evidence quality in everyday scenes. For system integrators and consultants, analog cameras create a cost-effective path for retail, small commercial, residential, parking, warehouse, restaurant, and branch-site projects where coaxial cabling is already present or network design should remain simple.

ACTi describes its analog camera portfolio as dome and bullet type analog cameras supporting TVI, AHD, CVI, and CVBS formats. The product page highlights high-definition analog surveillance cameras with up to 5MP image quality, exceptional low-light sensitivity, support for major global formats, fixed lenses, plug-and-play installation with no network-related setup at the camera point, popular dome and bullet form factors, and compliance options such as NDAA and TAICS. [1]

Core message

Analog cameras should not be evaluated only as older camera technology. They should be evaluated as a practical upgrade layer for sites where coaxial infrastructure, installation simplicity, budget control, and hybrid DVR workflows are important.

Key takeaways

- Analog cameras are valuable when the project can reuse coaxial cabling and avoid camera-side network setup.
- High-definition analog formats can support meaningful image-quality upgrades for price-driven security applications.
- Fixed lenses simplify installation and reduce field adjustment effort for standardized views.
- Hybrid DVR architecture can connect analog camera infrastructure to recording, playback, export, and remote viewing workflows.
- System design must confirm format compatibility, cable quality, power, distance, lighting, DVR capacity, storage, and operational workflow.

Procurement principle

Do not specify analog cameras only by resolution. Specify the upgrade outcome: which existing cabling will be reused, which signal format is required, what evidence quality is needed, how the video will be recorded, and how operators will access and respond to events.

2. About ACTi Corporation

ACTi Corporation is the writer and publisher of this document. ACTi is a Taiwan-based international company founded in 2003 and serving customers in more than 100 countries. ACTi states that it has more than 20 years of security-industry experience and has been a pioneer in video-based security technology development and innovation. [2]

ACTi positions itself as a physical security end-to-end solution provider. Its ecosystem includes IP cameras, analog cameras, network video recorders, hybrid DVR, VMS software, workstation applications, web clients, access control, central management, system health management, and integration with third-party systems. This matters for analog projects because existing camera infrastructure becomes more valuable when it can be recorded, reviewed, exported, and managed through a complete security workflow.

ACTi also emphasizes AI-enabled security and broader video management. Even when an analog project is selected primarily for cost-effective installation, the overall system should still be planned as part of a reliable security operation that supports live view, playback, investigation, escalation, and long-term migration planning. [2]

Why ACTi is relevant to analog camera projects

ACTi strength	Project relevance
End-to-end system scope	Analog cameras can be planned together with hybrid DVR, NVR/VMS, CMS, clients, access control, alarms, and third-party systems instead of being treated as isolated devices.
Security-industry experience	ACTi corporate information states more than 20 years of experience and adoption across vertical-market requirements. [2]
Hybrid upgrade path	Analog projects can reuse coaxial infrastructure while preserving a path toward modern recording, remote access, and system management.
Integrator-friendly portfolio	Analog bullet and turret/dome-style form factors help system integrators match budget, installation environment, and common security scenes.

3. Definition of "Analog Cameras"

An analog camera is a video surveillance camera that sends video over analog cabling infrastructure, typically coaxial cable, to a recorder such as a DVR or hybrid DVR. Unlike an IP camera that communicates directly over a network, an analog camera usually relies on the recording device to receive, encode, store, and provide access to the video.

In modern professional surveillance, analog cameras are often high-definition analog devices rather than legacy low-resolution cameras. ACTi describes its analog camera category as dome and bullet type analog cameras supporting TVI, AHD, CVI, and CVBS formats. The portfolio is positioned for cost-effective surveillance applications with up to 5MP image quality, fixed lenses, and no network-related setup required at the camera point. [1]

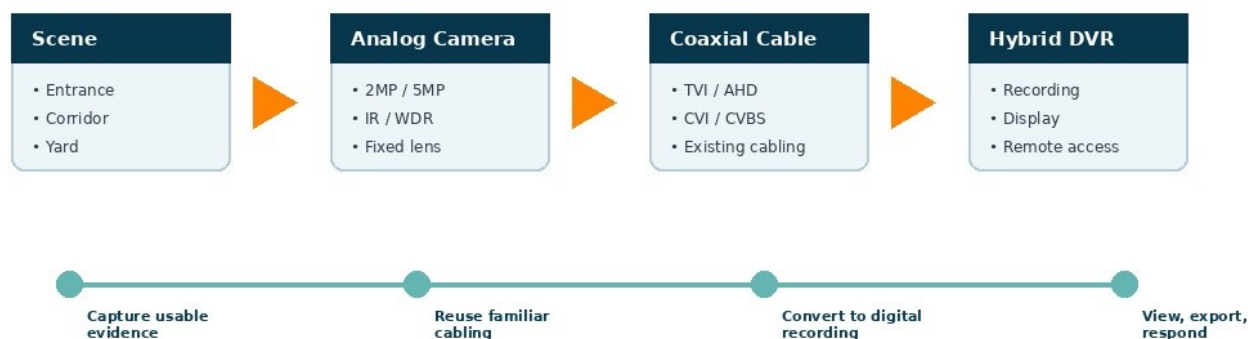
Analog cameras vs. related camera concepts

Term	Meaning	Common misunderstanding
Analog camera	Camera that sends video using analog signal formats over coaxial infrastructure.	Analog does not automatically mean low resolution; high-definition analog formats can support higher image quality.
Coaxial cable	Common cable type used in many existing CCTV installations.	Cable reuse depends on cable condition, distance, connectors, power design, and signal format.
Hybrid DVR	Recorder that receives analog camera signals and may also support selected network camera workflows.	It is not only a storage box; it defines playback, export, remote access, and system usability.
TVI / AHD / CVI / CVBS	Common analog video signal formats used across different surveillance systems.	Format compatibility must be confirmed between camera and recorder before deployment.
IP camera	Network camera that sends digital video over Ethernet/IP networks.	IP is not always the only upgrade path; analog can be practical where coaxial infrastructure is already in place.

Visual concept

How analog cameras create surveillance value

From fixed scene capture to hybrid DVR recording and operator response



Design principle: analog projects are strongest when cable reuse, simple installation, image quality, hybrid recording, and remote operation are planned together.

4. Core Technical Concepts

Analog camera selection should combine signal format, cabling, image quality, environmental design, recorder compatibility, and operational workflow. The following concepts help procurement teams compare products accurately and avoid under-designed analog upgrades.

Concept	Practical meaning
Signal format compatibility	ACTi lists support for major formats including TVI, AHD, CVI, and CVBS. Camera and recorder format support must be confirmed before deployment. [1]
Resolution	ACTi lists 2MP and 5MP as analog camera resolution options. Resolution should be matched with scene size, target detail, and recorder support. [1]
Fixed lens design	Fixed lenses simplify installation and reduce field adjustment work, but the scene and mounting position must be planned carefully.
Coaxial cable condition	Existing cable can reduce upgrade cost, but long runs, old connectors, interference, or poor installation can degrade signal quality.
Extreme WDR	Wide Dynamic Range helps maintain visibility in scenes with bright and dark areas, such as entrances and windows. ACTi highlights Extreme WDR for the category. [1]
Low-light sensitivity and IR	Low-light performance and IR illumination support nighttime and dim-scene operation. Site testing should confirm usable evidence quality.
Hybrid DVR integration	Recorder capacity, channel count, storage, playback, export, remote access, and display workflows determine system usability.
Compliance and environment	NDAA, TAICS, weatherproofing, operating temperature, mounting, and maintenance access should be confirmed for the specific project.

Specification interpretation

A single specification rarely determines real-world performance. A 5MP analog camera may still produce weak evidence if the scene is too wide, cable quality is poor, lighting is difficult, or the recorder is not configured correctly. Site design should validate signal format, cable condition, field of view, lighting, recorder settings, storage, export workflow, and operator access.

Procurement warning

Do not compare analog cameras only by megapixel count. Compare the complete evidence chain: camera, lens, signal format, coaxial cable, power, DVR compatibility, image enhancement, storage, playback, export, and operator workflow.

5. High-Value Applications

Analog cameras are especially valuable in price-driven projects, upgrade projects, and sites with existing coaxial infrastructure. ACTi positions high-definition analog surveillance cameras as suitable for cost-effective security applications and as an option when comparing IP vs. analog cameras or upgrading an existing system. [1]

Application	Operational value	Typical locations
Existing CCTV upgrade	Improve image quality while reusing coaxial cable and familiar installation practices.	Small businesses, retail chains, restaurants, offices, residential buildings
Budget-sensitive perimeter views	Provide directional outdoor coverage with practical installation cost.	Entrances, alleys, parking edges, loading areas, gates
Retail and restaurant monitoring	Support general live view and playback for daily security and incident review.	Sales floors, counters, kitchens, storage rooms, entrances
Parking and building exterior views	Monitor vehicle areas and building approaches where coaxial infrastructure already exists.	Parking lots, driveways, building perimeters, service entrances
Branch and small-site security	Standardize a simple recorder-based solution across multiple smaller locations.	Branches, shops, clinics, schools, local offices
Migration planning	Use hybrid DVR architecture as a bridge between existing analog cameras and future network-based systems.	Sites moving gradually from analog CCTV to IP surveillance

Value by stakeholder

Stakeholder	Main benefit
Security manager	Improved everyday coverage and evidence quality without replacing every cable run.
Control room operator	Familiar live view, playback, and export workflow through a recorder or client interface.
Facility / operations manager	Lower disruption and easier upgrade planning for existing buildings.
System integrator	Practical project option for sites with coaxial infrastructure and budget constraints.
Consultant / procurement team	Clearer specification language for format compatibility, cable reuse, recorder capacity, and evidence workflow.

6. System Architecture

From a recorder and monitoring perspective, analog cameras should be treated as part of a complete hybrid architecture. The field camera captures the image, the coaxial path carries the video signal, the hybrid DVR receives and records the video, and operators use local or remote clients to view, search, export, and respond.

Analog value increases when installation simplicity is connected to a reliable recorder workflow. Project teams should confirm format compatibility, cabling, power, DVR storage, local display, remote viewing, video export, user access control, and long-term migration planning.

Reference system architecture

Reference system architecture



Analog video travels from field cameras through coaxial infrastructure into a hybrid DVR.

Design principle: preserve the upgrade budget while keeping evidence accessible for operators.

Architecture layers

Layer	Role in analog camera surveillance
Field layer	Analog bullet cameras, turret/dome-style cameras, fixed lens views, IR illumination, WDR, low-light imaging, and site mounting accessories.
Transmission layer	Coaxial cabling, connectors, power design, format compatibility, cable distance, grounding, and signal quality.
Recording layer	Hybrid DVR receives analog video signals, records evidence, manages playback, export, local display, and remote access.
Management layer	Client software or CMS aggregates live view, event review, user access, multi-site monitoring, and investigation workflows.
Response layer	Operator SOPs, guard dispatch, escalation, incident export, access control action, third-party integration, and reporting.

7. ACTi Product Portfolio Overview

ACTi's analog camera page positions the portfolio as high-definition analog dome and bullet type cameras supporting TVI, AHD, CVI, and CVBS formats. The page highlights up to 5MP image quality, Extreme Low Light Sensitivity, Extreme WDR, plug-and-play installation, fixed lens simplicity, common analog formats, popular form factors, and compliance options such as NDAA and TAICS. [1]

Portfolio categories

Category	Where it fits	Use-case fit
Analog bullet cameras	Directional outdoor analog form factor for visible coverage of specific areas.	Entrances, gates, exterior walls, parking edges, loading areas, and perimeter views.
Analog turret / dome-style cameras	Compact outdoor form factor for common fixed-view monitoring with a lower-profile appearance.	Building entrances, corridors, small public areas, storefronts, schools, and branch sites.
Fixed lens analog cameras	Simple installation approach for standardized scenes where the field of view can be planned in advance.	Repeatable camera points, small sites, retail branches, restaurants, and general monitoring.
High-definition analog cameras	Analog upgrade option for improved image quality while keeping analog infrastructure.	Existing CCTV upgrades, budget-sensitive projects, and practical migration plans.
Hybrid DVR solution	Recorder-based architecture that receives analog camera signals and supports storage, playback, display, and access workflows.	Small and mid-size sites, multi-camera upgrades, and analog-to-digital transition projects.
Compliance-ready options	Project-specific camera and recorder selections where compliance, security requirements, or regional availability must be confirmed.	Government-related projects, regulated sites, and compliance-sensitive procurement.

Portfolio-level capabilities to confirm

- Required analog signal format and recorder compatibility.
- Resolution, frame rate, fixed lens field of view, WDR, low-light performance, IR distance, and actual evidence quality.
- Existing cable type, distance, connector condition, grounding, interference risk, and power design.
- Hybrid DVR channel count, storage, playback, export, local display, remote access, user access control, and retention period.
- Environmental ratings, operating temperature, mounting accessories, maintenance access, and vandal/weather exposure.
- Cybersecurity and compliance requirements such as NDAA, TAICS, firmware policy, secure remote access, and regional availability.

Project note

Product availability, detailed specifications, compliance status, recorder compatibility, and regional part numbers should be confirmed from the latest ACTi product pages, datasheets, firmware release notes, and quotation documents before project submission.

8. Related Keywords and Terminology

The following keyword reference groups collect common terms related to analog cameras, high-definition analog surveillance, coaxial infrastructure, hybrid DVR workflows, security operations, and project procurement.

Core topic keywords

analog cameras, analog security camera, analog surveillance camera, analog CCTV camera, HD analog camera, high definition analog camera, analog video surveillance, coaxial security camera, cost-effective security camera, fixed lens analog camera, professional analog camera, CCTV upgrade camera

Form factor keywords

analog bullet camera, analog dome camera, analog turret camera, outdoor analog camera, indoor analog camera, fixed lens camera, weatherproof analog camera, vandal-resistant camera, compact analog camera, day night analog camera, IR analog camera, low light analog camera

Signal and infrastructure keywords

TVI camera, AHD camera, CVI camera, CVBS camera, coaxial cable camera, coax CCTV upgrade, analog camera format compatibility, analog camera to DVR, analog camera cable reuse, hybrid DVR camera, DVR surveillance system, analog camera installation

Technical specification keywords

2MP analog camera, 5MP analog camera, Extreme WDR camera, low light surveillance camera, IR LED camera, fixed focal lens camera, plug and play camera, no network setup camera, high definition CCTV camera, analog camera image quality, analog camera frame rate, weatherproof security camera

Application keywords

retail CCTV camera, restaurant security camera, small business security camera, parking lot analog camera, building entrance camera, warehouse CCTV camera, residential CCTV camera, office security camera, school CCTV camera, branch security camera, existing CCTV upgrade, budget surveillance project

Hybrid system keywords

hybrid DVR, analog camera hybrid DVR, DVR playback, CCTV remote viewing, analog camera recording, video export, CCTV evidence review, hybrid surveillance system, analog to IP migration, recorder-based surveillance, multi-site CCTV monitoring, CMS surveillance

Procurement and project keywords

best analog security camera, analog camera for system integrators, analog camera for consultants, analog camera for end users, analog camera specification, CCTV upgrade specification, camera selection for coaxial infrastructure, ACTi analog camera, ACTi analog bullet camera, ACTi analog turret camera, analog camera white paper

Common question phrases

what is an analog camera, how does an analog camera work, analog camera vs IP camera, TVI vs AHD vs CVI vs CVBS, when should I use analog cameras, can I reuse coaxial cable for CCTV, how to upgrade analog CCTV, how to choose an analog camera, what is a hybrid DVR, analog camera installation checklist

Source notes

This white paper is based on ACTi public source pages and general video surveillance system-design practices. Product details should always be reconfirmed against the latest ACTi datasheets, firmware release notes, regional availability, and quotation documents before formal project commitment.

Ref.	Source
[1]	ACTi Corporation, "Analog Cameras," official product category page. URL: https://www.acti.com/products/analog-cameras . Accessed: June 2, 2026.
[2]	ACTi Corporation, "About ACTi," official corporate page. URL: https://www.acti.com/corporate/about . Accessed: June 2, 2026.

Revision note: This document is a marketing and technical education white paper. It is not a regulatory certification, safety standard, or final project design. Always validate signal compatibility, cable condition, evidence quality, recorder settings, and operator workflow in the target scene before deployment.

Prepared by ACTi Corporation

For analog camera projects, confirm camera type selection, analog format, cable condition, recorder compatibility, mounting accessories, and regional availability with your ACTi sales contact or authorized system integrator.

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