ADAS DEVKIT

The ADAS Devkit is a comprehensive development platform designed to accelerate the creation and testing of advanced driver assistance systems (ADAS). Built around the NVIDIA Orin SoC with 275 TOPS of performance, this kit provides real-time AI-powered perception and decision-making, with lane centering reference design based on OpenPilot. The system includes an AR0234-based forward camera, onboard SSD storage for logging, and full drive-by-wire integration initially for the Ford Mach-E.

Its modular architecture supports up to 8 GMSL2 cameras and is ready for integration with other vehicle platforms.

Features

◢ **Data Logger**
Forward camera + CAN

◢ **Drive-by-Wire API**
Validated on 100m miles

◢ **Lane Centering**
Validated on 100m miles

◢ **20 FPS**
Run camera and AI inference at 20Hz

◢ **Forward Camera Module**
AR0234 with GMSL2 camera support

Technical Specs

System Specs

Processor	12-core Arm Cortex-A78AE CPU
GPU	NVIDIA Jetson AGX Orin SoM
Forward Camera	1920x1080 at 20Hz | M12 lens
Mass Storage	1 TB SSD
Connectivity	LTE, WiFi, USB, CAN-FD
Camera Inputs	Up to 8x GMSL2 cameras with Sunex M12 lenses
CAN-FD	100Hz processing rate

Physical

Size	234 mm x 193 mm x 56 mm

NVIDIA Inception Program

ADAS Software Modules

Accelerate time-to-market for Nvidia Automotive Platforms

Leverage Deepview's 6+ years of experience designing and implementing production software for Nvidia platforms. Deepview's ADAS DevKit accelerates ADAS development with a robust real-time architecture and native support for Python, Rust, OpenCV, TensorRT, CUDA, ONNX, and PyTorch.

The DevKit comes pre-configured with a flexible reference architecture that includes forward camera input via GMSL2 at 20 FPS, AI inference at 20Hz, and 100Hz CAN-FD drive-by-wire control[1]. All CAN data is aligned with 1080p video frames for frame-accurate playback and API-driven replay control. Data is easily pushed to your datacenter with a single API call.

Software Modules Available Now

- Real-time Camera Interfacing at 20FPS
- Hardware-accelerated video encoding
- Real-time AI Inference using TensorRT
- Lane Centering OpenPilot AI Model
- Drive-by-Wire at 100Hz
- In-Car Display - Development UI
- Log CAN/Video to Datacenter

Software Modules In Development

- Multi Camera - 8 Cameras at 20 FPS
- Multi Camera - 8 Camera Video Encode
- Depth Processing with Radar and Lidar interfaces
- Emergency Braking reference design
- Automated Highway Navigation
- In-Car Display - 3D Visualization
- Functional Safety ISO26262

Lane centering reference design featuring OpenPilot AI Model running on Nvidia Orin

[1] Production automotive hardware is typically locked-down and difficult to iterate on. The DevKit offers a flexible environment for development and testing. Once complete, designs can be transitioned to production systems through your Tier 1 supplier.

Development UI

The ADAS DevKit features a real-time development UI designed for in-vehicle display via CarPlay or Android Auto. This interface visualizes live vehicle control states, including manual override flags, gas/brake inputs, CAN/MPC validity, and AI model predictions such as steering angle and cruise status. The overlay includes synchronized camera feed and telemetry, enabling developers to verify system behavior on the road without external tools.

Wiring Diagram
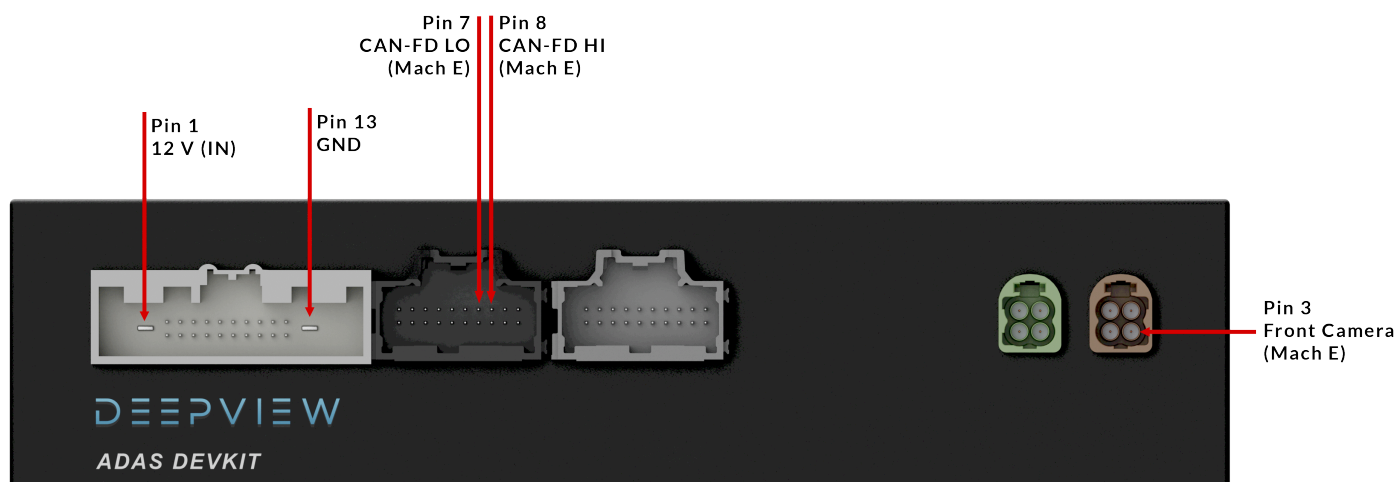
Technical Drawings

Dimensions are in mm.