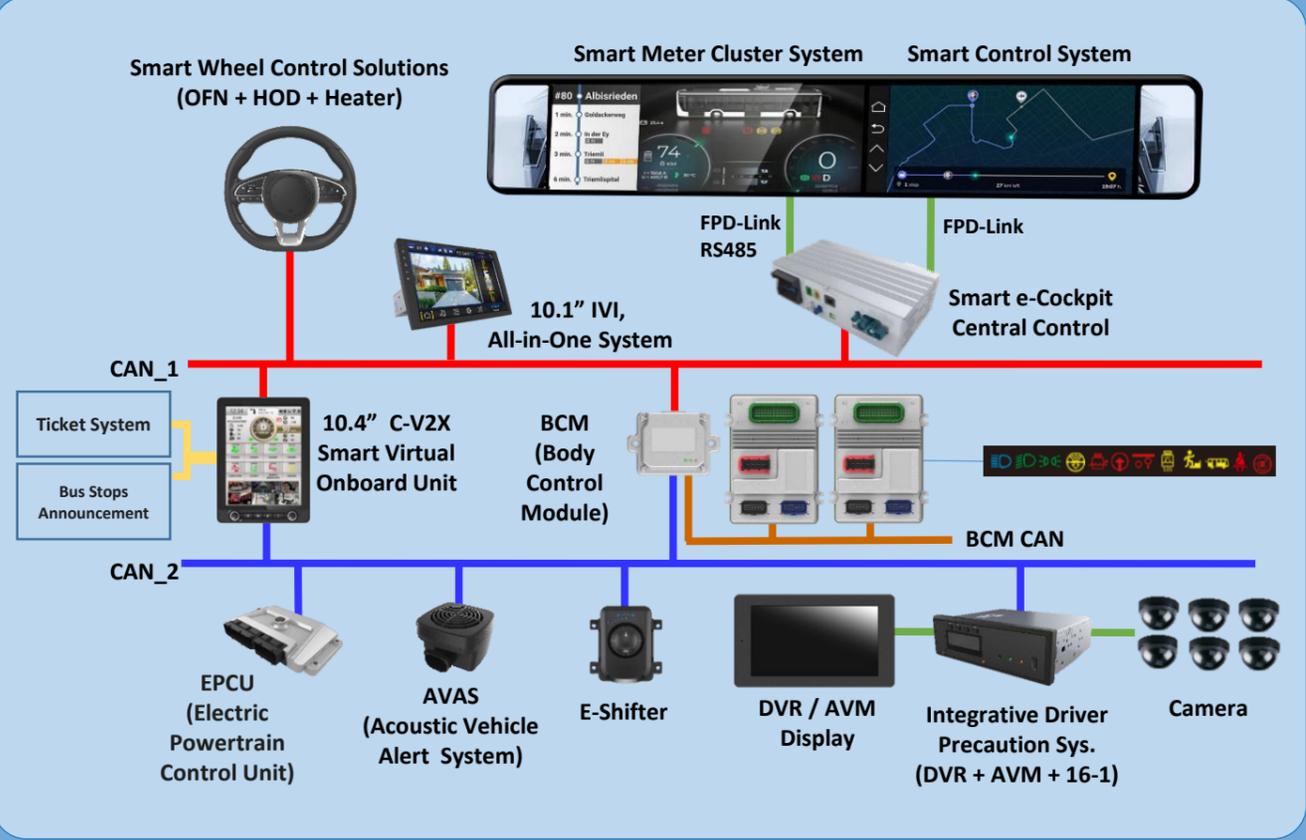
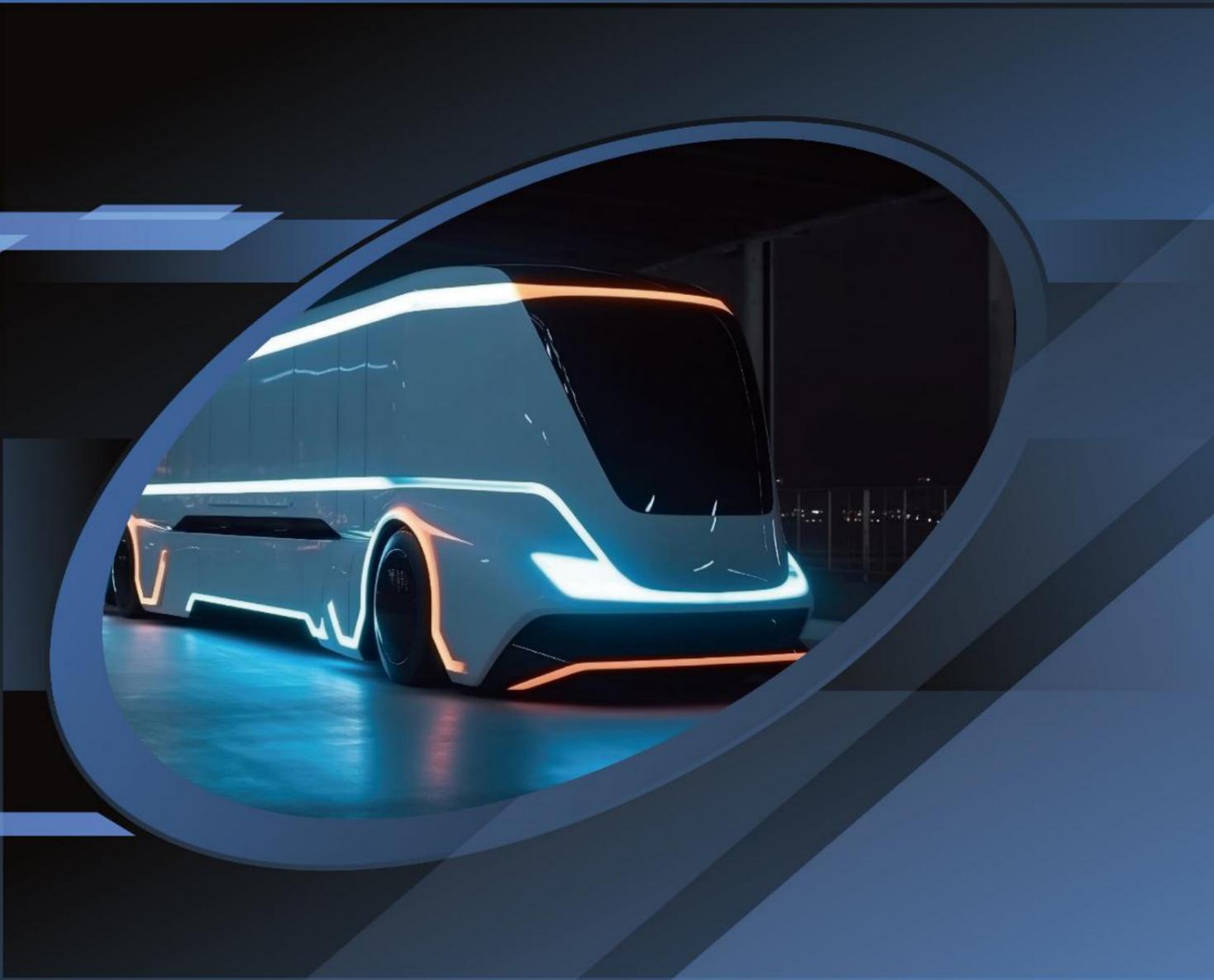


# Smart Cockpit of Electric Bus

Clientron, based in Taiwan, is a dedicated leader in the automotive industry, specializing in system integration services. With extensive expertise in integrating subsystems to enable seamless communication between all components and applications within electric vehicles, Clientron stands at the forefront of innovation.

At the heart of our offerings are advanced in-vehicle infotainment systems, complemented by cutting-edge developments in Advanced Driver Assistance Systems (ADAS) and Cellular Vehicle-to-Everything (C-V2X) applications. These innovations have enabled us to support manufacturers in creating smart e-Cockpits, earning the trust and recognition of leading automakers across various regions.

At Clientron, our unwavering commitment is to be a trusted partner in delivering user-friendly, secure, reliable, and durable solutions for the automotive industry.



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## Smart Meter Cluster System



- With 12.3" 、1920x720 Display
- Support 5"/7"/10"/12.3" Sizes
- Customization GUI
- Using RTOS on 24V system
- Support CAN BUS, USB, PWM
- With Buzzer inside

## Smart Control System



- With 12.3" 、1920x720 Display
- Base on BCM sys. could digitalized the analog signals of the electronic component
- User-friendly Human Machine Interface and GUI
- Support Touch Screen
- Support CAN BUS, USB, AHD input
- With RTOS on 24V system
- With Buzzer inside

## 10.1" One Din IVI, All-in-One Sys.



- With 10.1" Touch Display, Buttons
- Using Android Auto O.S. and Supporting redevelopment
- Support BT/WiFi, GPS, 4G, CAN BUS, UART, and video input/output
- Support BT Hands Free(MIC inside)

## Vehicle Data Recorder



- Recording the driver's working hours and vehicle-related driving data
- Providing the supervision department to regularly check the driving record of the vehicle
- Providing evidence for investigation by retrieving the vehicle's data
- Applicable to the Taiwanese Digital Driving Recorder regulation: 16-1.

## IDPS (Integrative Driver Precaution Sys.)



- High-resolution cameras
- Support TVI Video out to Display
- Support AI algorithm such as:
  - DVR ( Digital Video Recorder )
  - AVM 、BSIS 、FCW 、LDW 、DMS
  - IDR ( Identify Driving Recorder )
- Support CAN BUS, 4G Module, Printer, SD Card
- Support Taiwanese VDR/16-1

# Smart Cockpit of Electric Bus



## BSD Box, (Blind Spot Detection Box )



- Video Switch with AI Algorithm
- Support TVI in\*2 、TVI out\*1
- Support Object recognition Algorithm ex. Vehicle, People
- Buzzer inside or out line
- Support CAN BUS

## IBDS ( Intelligent Blind Detection System )



## Steering Wheel Control Solutions



- Control Unit solution for steering wheel :
  - OFN ( Optical Finger Navigation )
  - HOD ( Hands Off Detection )
  - Heating/ Vibration
  - Including sensor mate
- Apply to L2 or higher Autopilot level

## BCM (Body Control Module)



- Control the electronics system: air-conditioning control, the onboard lighting system, Door Control, relay power, ECAS (Electronically Controlled Air Suspension), etc.
- Support 18V - 32V DC
- Support diagnostic and BT ( Optional )
- Support 1 master with 6 Slave local CAN BUS network and redevelopment ( Master unit )
- Support A/D interface including :
  - CAN BUS
  - wake-up I/O ( 20A, 9A, 3.2A, 2A, etc. )

## E-Shifter



- E-Shifter is shifted by wire
- Apply to development of APS (Automated Parking System) and ADAS (Advanced Driver Assistance Systems)
- Support CAN BUS interface

## AVAS (Acoustic Vehicle Alert System)



- Support CAN BUS interface
- Comply with automotive-grade test
- Ingress Protection Rating: IP67

## EPCU (Electric Powertrain Control Unit)



- EPCU is the Vehicle Control Unit integrating BMS (Battery Management Sys.), MCU (Motor Control Unit)
- Support A/D I/O Control
- Apply to buses, passenger vehicles, and all-terrain vehicles (ATV)
- Adopt the Model-Based Design(MBD) to implement the AI algorithm and logic structure
- Support to redevelop