Description

Communication Network Diagram
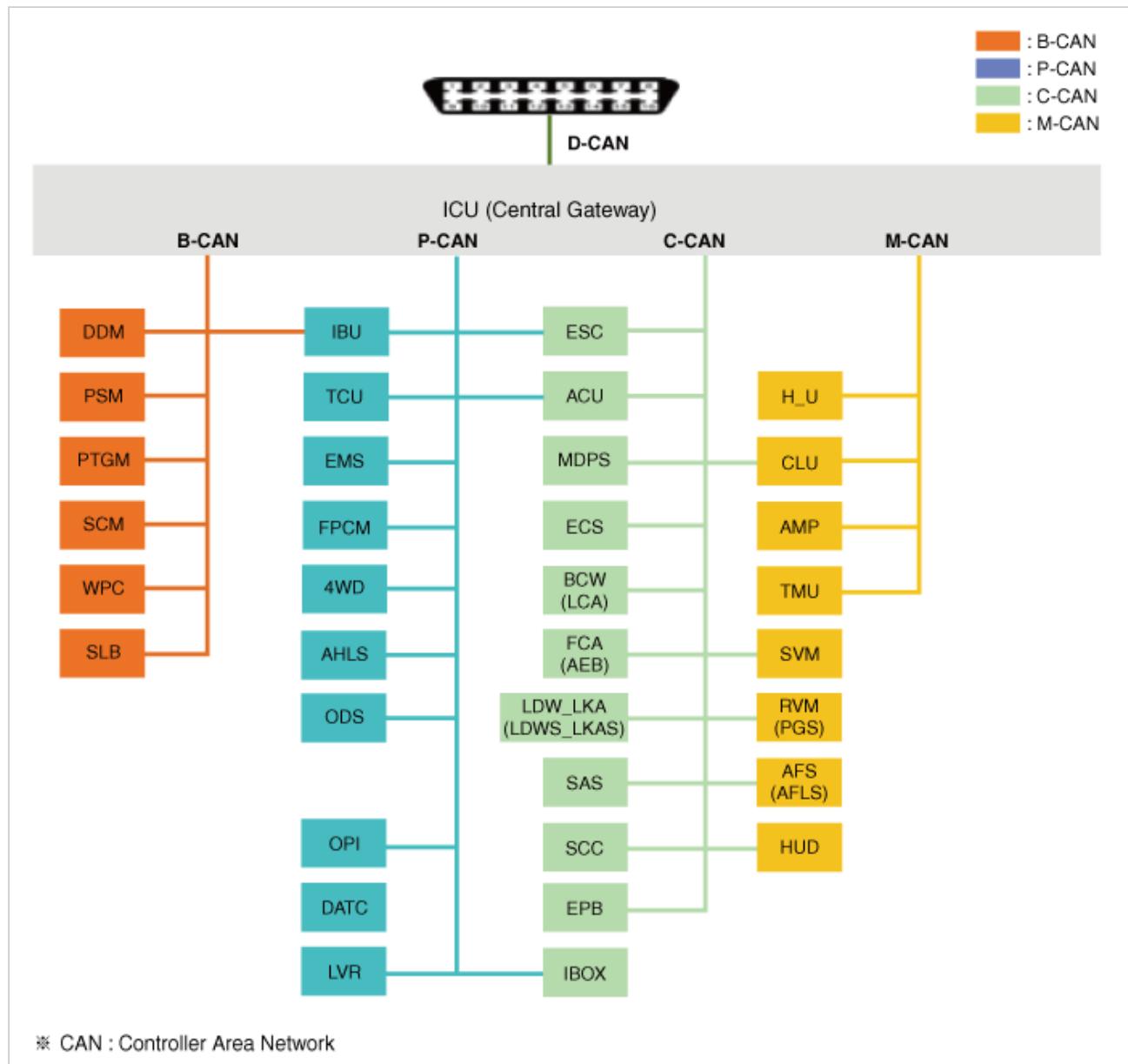
Abbreviation	Explanation
ACU	Airbag Control Unit
AFL	Adaptive Front-Lighting System
AMP	Amplifier
AUDIO	Audio Head Unit
SVM	Surround View Monitor
B_CAN	Body Controller Area Network
BCW	Blind-Spot Collision Warning
C_CAN	Chassis Controller Area Network
CDP	Compact Disk Player
CLU	Cluster Module
DATC	Dual Automatic Temp Control
DDM	Driver Door Module

ECM	Engine Control Module
F_PUMP	Fuel Pump Control Module
HUD	Head Up Display
IBU	Integrated Body Control Unit
ICU	Integrated Central Control Unit
IFB	Interface Box
IMS	Integrated Memory System
LDW	Lane Departure Warning
LKA	Land Keeping Assist
M_CAN	Multi media Controller Area Network
MDPS	Motor Driven Power Steering
MFC	Multi Function Camera
MTC	Manual Temp Control
ODS	Occupant Detection System
P_CAN	Powertrain Controller Area Network
PCM	Powertrain control module
PTG	Power Liftgate Module
RVM	Rear View Monitor
SCC	Smart Cruise Control
SCM	Steering Column Module
TCM	Transmission Control Module
VDC	Vehicle Dynamic Control
WPC	Wireless Power Charger

Cluster Variant Coding

As we have more options (ESC, MDPS etc.) in the car, the dashboard now has more information to display depending on the chosen options.
For this reason, we need to learn which options the vehicle has when replacing the dashboard.
To address this issue, a course of learning based on the option required for the vehicle when replacing the dashboard should be carried out.
This is called Variant Coding.

Function

1. High speed CAN communication (C-CAN)
    – Custom Function : car seats linked to getting on/off motion, Welcome Light
    – LDW : Lane Departure Warning
    – LKA : Lene Keeping Assist
    – PA : Parking Assist
    – PDW : Parking Distance Warning

2. Low speed CAN communication (M-CAN)
    – AV : Audio / Video Multimedia information Display
    – TBT : Turn By Turn Navigation Information Display

3. Various source control
    Various alarms and sound effects are issued through the external speakers connected to the instrument cluster.

Sound	Description and function (CAN data receiver)
Welcome	Welcome (Key out and door open/closed state checked by IBU
Goodbye	Goodbye (Cluster)
Door Open warning	Key reminder warning (IBU), Vehicle speed is 5km/h or below & IGN switch is ACC or IGN or engine start & when vehicle speed is below 5 km/h or when the driver side door is opened
Seat belt warning	Driver seat belt warning (IBU)
PDW System warning	PDW sensor fault warning (IBU)
Gear R	PDW warning when shift gear R (IBU and PA)

Parking Brake	Parking brake warning (IBU)
Start button	SSB button warning (IBU)
Rheostat light information	Rheostat warning when select the max or min degree (Cluster)
Smart Key departure	Smart key out warning (IBU)
Smart Cruise	Change from the conventional cruise to the smart cruise (SCC)
Smart cruise driving information	Smart cruise function cancel (SCC)
Conventional cruise	Change from the smart cruise to the conventional cruise (SCC)
Turn signal lamp (Tick)	Turn signal lamp warning (IBU)
Turn signal lamp (Tock)	Turn signal lamp warning (IBU)
Smart key battery low voltage	Warning when driver push the SSB button with low voltage battery smart key (IBU)
EPB warning	Warning when change from Auto Hold to EPB lock (EPB)
Coolant temperature alarm	When the engine temperature is over 120 °C (EMS)

4. User Setting Mode (USM)

Setting can be changed by using the haptic switch menu, and CW, CCW, OK buttons (or the UP, Down, Left, Right and OK button of the generic switch). There are total of 24 items (for example, In/Out Seat Synchronization, In/Out Steering Wheel Synchronization, Auto Door Lock, Auto Door Lock Deactivate, Head Lamp Escort, Welcome Light, Welcome Sound, Triple Turn Signal, Average Fuel Consumption Auto Reset, HUD Height Adjustment, Brightness, and Content Setup) that can be set and customized. The signal flow during setting is as follows.

(1) USM settings are set, they are transmitted to IBU.

(2) IBU transmits the settings via B-CAN to the relevant modules.

(3) The module completes setting and transmits the modified setting to IBU.

(4) IBU transmits the final settings via C-CAN to the cluster.

> **ℹ Information**
>
> The cluster communicates directly with C-CAN units.