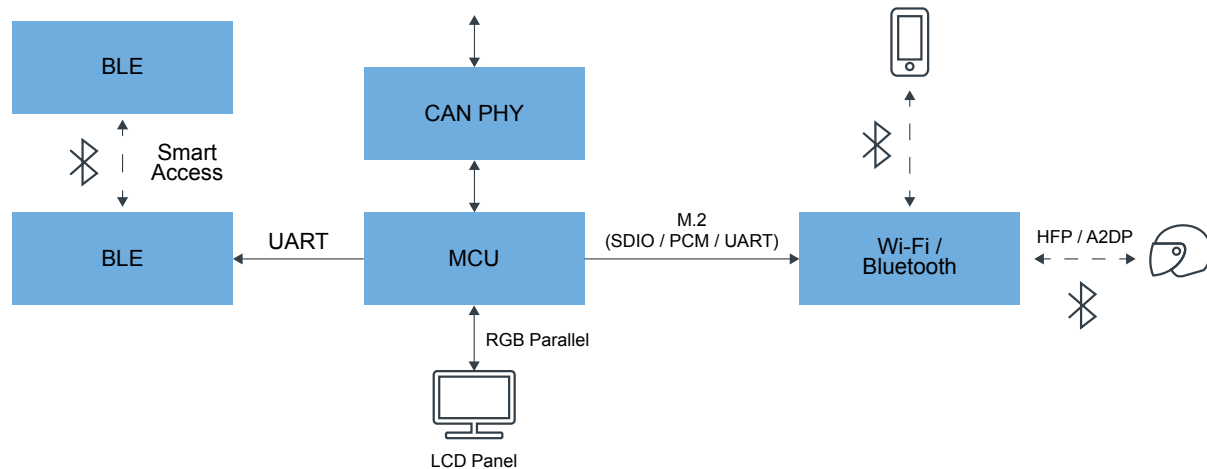# Two-Wheeler Digital Connected Cluster

Last Updated: Mar 11, 2025

The two-wheeler digital connected cluster (DCC) reference platform delivers high-performance, automotive-grade, graphics and rich connectivity experience for an enhanced two-wheeler driving experience. Our advanced DCC is powered by the i.MX 95 processor, providing AI/ML acceleration and Functional Safety capabilities for digital clusters targeting mid- to high-end two-wheelers, while the i.MX RT1170 crossover MCU, which powers our entry level DCC, enhances connectivity and multimedia experiences at low costs. This combination enables features such as three-way Bluetooth pairing, secure vehicle access, and phone projection capabilities for a seamless and intelligent riding experience.

DCC 1.0 (i.MX RT1170-based) Block Diagram

BLE

Smart Access

BLE ← UART → MCU ← M.2 (SDIO / PCM / UART) → Wi-Fi / Bluetooth → HFP / A2DP

CAN PHY

RGB Parallel

LCD Panel

■ NXP Technology   ☐ Non NXP Technology   ⬚ Optional Technology

Recommended Products for DCC 1.0 (i.MX RT1170-based)	
BLE	• KW45: KW45: 32-Bit Bluetooth® 5.3 Long-Range MCUs with CAN FD and LIN Bus Options, Arm® Cortex®-M33 Core
MCU	• i.MX-RT1170: i.MX RT1170: 1 GHz Crossover MCU with Arm® Cortex® Cores
Wi-Fi / Bluetooth	• AW611: 2.4/5 GHz Dual-Band 1x1 Wi-Fi® 6 (802.11ax) + Bluetooth® 5.4 Automotive Solution
CAN PHY	• TJA1044: High-Speed CAN Transceiver with Standby Mode - Mantis Family

DCC 2.0 (i.MX 95-based) Block Diagram

Legend: ▮ NX Technology ▯ Non NX Technology ⬚ Optional Technology
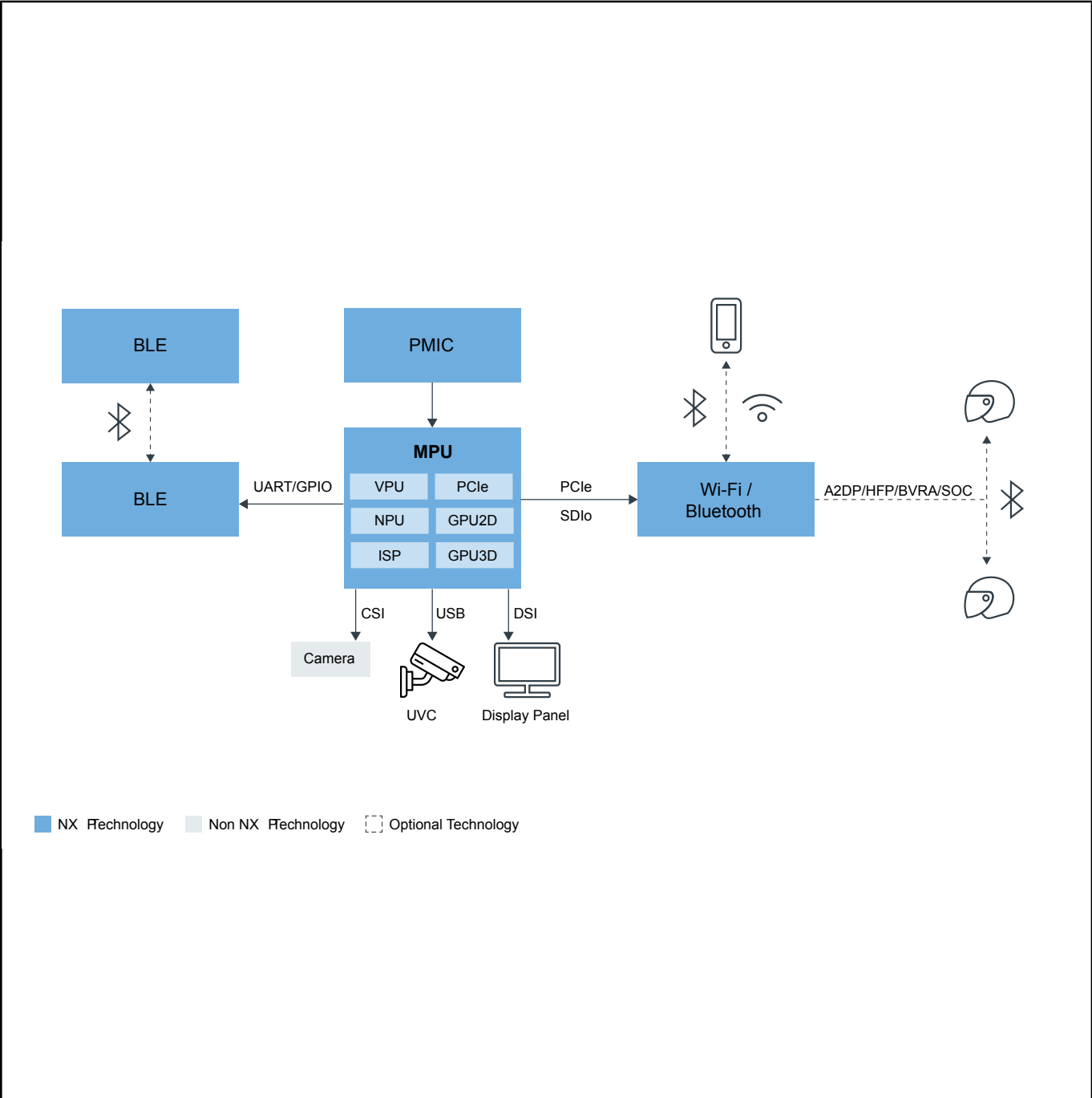
Recommended Products for DCC 2.0 (i.MX 95-based)	
BLE	• KW45: KW45: 32-Bit Bluetooth® 5.3 Long-Range MCUs with CAN FD and LIN Bus Options, Arm® Cortex®-M33 Core
PMIC	• PF53: 12 A / 8 A / 15 A Core Supply Regulator with AVP and Watchdog
Wi-Fi / Bluetooth	• AW693: 2x2 Dual-Band (5-7 GHz), 1x1 (2.4 GHz) Concurrent Dual Wi-Fi 6/6E and Bluetooth 5.3 Combo Solution

MPU	• i.MX95: i.MX 95 Applications Processor Family: High-Performance, Safety Enabled Platform with eIQ® Neutron NPU

View our complete solution for Two-Wheeler Digital Connected Cluster.

Note: The information on this document is subject to change without notice.

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