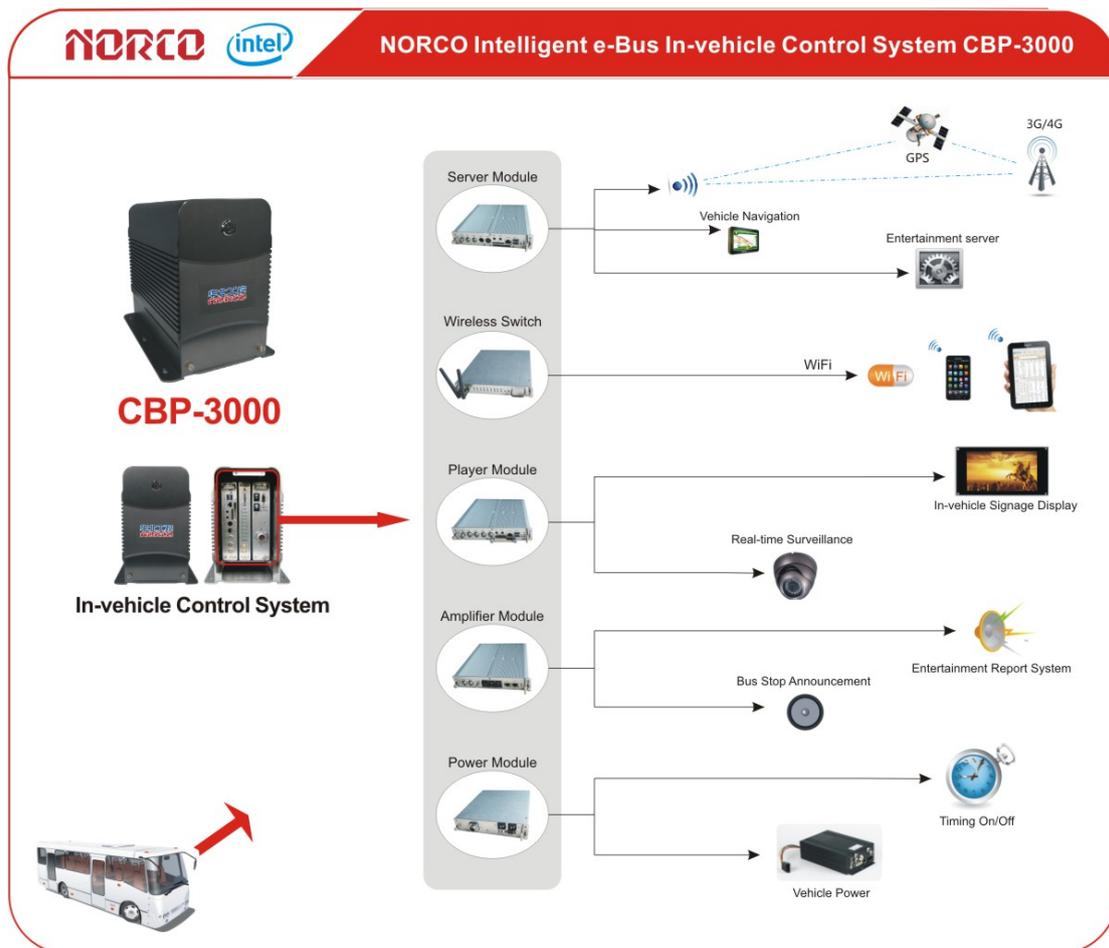


NORCO Intelligent e-bus In-vehicle Control System CBP-3000

Overview:

NORCO is working with a BUS-ONLINE company to deliver an Intel® Atom™ processor based, intelligent in-vehicle control system ideal for municipal and inter-urban bus fleets. CBP-3000 is just the new high performance in-vehicle control system from NORCO. System inherits rugged industrial-grade stability with modular design, inbuilt modules including amplifier, server, player, switch, UPS and the backplane. System passed ISO-7637-2-2004 power standard and ISO-16750-3-2003 vibration standard and can work in an extended automotive grade temp rang (-30 up to 70° C) and provide higher processing performance with industrial CF card and Intel low power Atom N2800/D2700/D2500 embedded CPUs . With 3G/WiFi support and one BNC/AV port, offering redundant network connectivity for in-vehicle infotainment and network. Powered by Intel low power Atom N2800/D2700/D2500 embedded CPUs, this in-vehicle control system offers high computing power, multiple I/O and low-noise operation for a range of in-vehicle markets such as police cars, taxis, buses, emergency vehicles, trucks, trains, industrial vehicle fleets and transport trucks. With in-vehicle certification, low power Intel CPUs, different functional modules, vehicle vibration design, UPS power and easy installation design, CBP-3000 speeds up system integrators' time-to-market and reduces costs for space-critical, in-vehicle applications.



Challenges & Solution:

BUS as a traditional transportation tool is essentially used for every country. This transportation tool brings much convenience to people. With IT technology developing rapidly, BUS application is becoming more intelligent. Generally the BUS application uses ARM based platform, which can only perform few

applications like arrival information, advertisements. Passengers feel boring or nothing to do in the BUS and they feel like wasting time during the travel by BUS.

To make the travel time feeling short and bring more convenience and entertainment to the BUS passengers, Norco developed an X86 platform based on Intel Atom D2550. The Intel X86 platform are multifunctional and much more flexible. It will totally change the traditional BUS. We call this platform "CBP-3000". It is an intelligent in-vehicle control system ideal for municipal and inter-urban bus fleets. Passengers can enhance working efficiency and would be more willing to play and work in the BUS. Intel based platform changed the idea of traditional BUS into intelligent e-Bus. The D2550 platform replaced ARM and accepted by passengers

This platform meets ISO-7637-2-2004 power standard and ISO-16750-3-2003 vibration standard. The Intel cedar trail Atom D2550 CPU makes it work in an extended automotive grade temp rang (-30 up to 70° C) and offer higher processing performance.

System contains the amplifier module, server module, player module, switch module, UPS and the backplane, to build an overall intelligent control system for e-bus, including bus surveillance, Vehicle status monitoring, in-vehicle display system, automotive infotainment, GPS, mobile TV and Internet (3G/Wi-Fi),etc.

This will be the right low power cost effective solution that you are seeking. With the in-vehicle certification, low power Intel CPUs, different functional modules, UPS power and easy installation, CBP-3000 speeds up your products "time-to-market" and reduces costs for space-critical, in-vehicle applications.

We believe this platform is a trend for future BUS!

CBP-3000 Key Spec:

Intel processors: Intel Cedar trail Atom N2800/D2700/D2550 CPUs

Hardware/Modules:

CBP-3000 Bus Control System, including Intel CPU+chipset based Server Module & Player Module, switch module, Amplifier Module, USP, Power Module

1.Vehicle Power Module: Dimension: 200mm (W) X230mm (L) X45mm (H) ,8-36V wide input, ISO_7637-2-2004 compliant

2.Car/Vehicle Amplifier Module: Dimension: 200 (W) x230 (L) x40 (D) mm, Support 4 stereo inputs

3. Vehicle Server/Player Module:

-ATOM N2800/D2700 CPU + NM10 chipset, with 2G DDR3 RAM, maximum 4G

-Panel with 1x SD, 1x CF, rear panel with 1x SATA

-1x RJ45 debug port, 1x Gigabit Ethernet port, connected to switch via backplane

-2x USB3.0 (panel), 4x USB2.0 (internal)

-2 x minis-PCIE for 2x 3G function

-2x SIM card slot

-Panel with 1x CAT5 port(Server Module), 3x CAT5, 1x BNC/AV port(Player Module)

-Passive heat dissipation

-Dimension: 200 (W) x230 (L) x40 (D) mm

4.Switch Module: Integrated WiFi AP function, support 50 WiFi users online, 802.11g/n protocol,8x10/100/1000 Mbps adaptive Ethernet ports,200 (W) x230 (L) x40 (D) mm.

Software:

OS: linux, Car Entertainment System Application Software

Ecosystem Category Alignment: ODM

How Demo Supports ISG Vision: Device To Cloud

***Business Segment: Automotive**

**Key Features:****1. Vehicle-friendly Power Design:**

System power meets ISO-7637-2-2004, offering under voltage, overload, overcurrent, over-temperature and short-cut protection.

3. Unique anti-vibration design: “Air-tight Pin Connection + Guide Pin + 360° fixing” (ISO-16750-3-2003) makes the system dedicated for vehicle applications.

3. Intelligent e-Bus Control: System contains the amplifier module, player module, server, switch, UPS and the backplane, to build an intelligent overall control system for e-bus, including bus surveillance, vehicle status monitoring, in-vehicle display system, car infotainment, GPS, mobile TV and Internet (3G/WiFi),etc.

4. Harsh Environments Survival:

The industrial-grade chassis is built to survive harsh vehicle environments. Powered by Intel Atom D2500 embedded CPUs, combined with rich I/O connectors and industrial CF card, system can operate in an extended temp rang (-30 up to 70° C)

5. Cost Effective Solution

With in-vehicle certification, Intel Atom CPUs, functional modules, vehicle vibration design, UPS power and easy installation, CBP-3000 speeds up system integrators' time-to-market and reduces costs for

space-critical, in-vehicle applications such as police cars, taxis, buses, emergency vehicles, trucks, trains, industrial vehicle fleets and transport trucks.